

AN-NAJAH NATIONAL UNIVERSITY GUIDE

2014

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In the Name of Allah,
the Most Compassionate,
the Most Merciful

INTRODUCTION:

An-Najah National University is pleased to provide students with this guidebook, which contains comprehensive information on the University faculties, academic programmes and instructions to obtain a Bachelor's Degree. Students should make themselves familiar with the contents of this manual helping them to adapt to life at An-Najah and their academic career. It also provides students with the full academic curricula provided by different faculties, helping students select their desired major in their field of interest.

Asking Allah, the Sublime, the Omnipotent, for his blessings



University History:

In 1918 An-Najah National University started life as a primary school: An-Najah Nabulsi School. By 1941 it had become An-Najah College, granting diplomas in some business and academic specialisations. In 1965 An-Najah became a teacher training institute, also granting intermediate university degrees in various fields of study. It then went on to evolve into a full-fledged university, “An-Najah National University” to meet the community needs.

University Vision:

An-Najah National University is dedicated to promoting understanding, providing the highest quality undergraduate and graduate education and serving as a leader in scientific research. An-Najah acts as a base for sustainable development by encouraging students and the University community to assume leadership roles and to participate in serving society.

University Mission:

An-Najah National University is a public institution whose mission is to advance learning, share knowledge and foster the skills needed in young men and women to succeed in all professional spheres of life. An-Najah also aims to instill understanding in the students and to promote a culture of scientific excellence. The University aims to equip its students with the skills necessary to be productive and creative members of Palestinian society and to compete in the domestic, Arab and international employment markets.

The University is also dedicated to advancing scientific research on a global level and to meeting the community's needs by participating in sustainable economic, technical and human development. Additionally, An-Najah strives to preserve the cultural and religious heritage of the Palestinian people and to increase knowledge of this heritage.

The purpose of the Strategic Plan:

1. Advancing, developing and promoting higher education.
2. Advancing and promoting scientific research for the enrichment of knowledge.
3. Cultivating the role of the University as a leader and catalyst in serving the community and solving its problems.
4. Raising the level of efficiency of the administrative performance at the University so that services effectively assist in achieving the mission.

University Councils:

The University policies are determined through a series of Councils which operate according to the University framework. They consist of:

Board of Trustees:

The Board of Trustees is the governing body. It oversees the University financial and administrative systems and the procurement of the financial resources.

Board of Trustees:

- | | |
|----------------------------|------------------------|
| —Chair: Mr. Sabih Al-Masri | —Mr. Bashar Al-Masri |
| —Dr. Farouk Zuater | —Mr. Kameel Saad Eddin |
| —Mr. Farouk Tuqan | —Judge Imad Sleem |
| —Dr. Walid Khoury | —Dr. Hani Nabulsi |
| —Mr. Mehdi Saifi | —Mrs. Lamis Al-Alami |
| —Eng. Riad Kamal | —Mr. Ammar Aker |
| —Mr. Allam Al-Ahmad | |

Council of Deans

The Council of Deans determines and reviews the University's academic policy, making appropriate decisions and recommendations according to the University's established regulations. In particular it looks at the design of study plans and curricula, deciding on the needs of the Faculties and Departments.

The Council of Deans:

- The University President (Chair).
- The Vice Presidents and the Assistants.
- Deans.

Faculty Councils

Each academic faculty at the University is overseen by an individual Faculty Council, which oversees the various departments of that faculty, as well as the University's administrative units. The Council takes decisions within the limits of the authorities given to them, and recommendations are made through the Dean to the responsible parties in the University.

Each Faculty Council consists of the following

- The Faculty Dean, who heads the Council.
- The Head of each department in the faculty.
- Two faculty representatives, who should be at least assistant professors. They shall be elected by the faculty staff annually.

Departmental Councils

Each academic department is overseen by an individual “Departmental Council”, consisting of all its staff members. The Council’s role is to oversee the Department’s academic and staff affairs, providing the Departmental Head with the appropriate recommendations to be submitted to the Faculty Dean. Involving the University Administration responsibility, the department head is responsible for managing the department’s affairs, and implementing the University regulations relating to the administration of the department head.

The Departments’ Councils top priorities are the following:

- Drafting the curricula and study plans for the department courses.
- Passing proposals to the Faculty Council on the curricula.
- Overseeing and assessing students’ academic results.

- Social Activities:
 - Introducing students to the historical and geographical sites of the country.
 - Organising student visits to public institutions.
 - Coordinating student community services.
 - Enhancing students' moral commitment and organising their relationship with the community through lectures.
- Cultural and Artistic Activities:
 - Organising programmes for lectures and seminars.
 - Holding events, exhibitions and artistic festivals.
 - Publishing students' cultural and artistic works in the University publications.
 - Preparing training programmes in theatre and music.

Transport: the Deanship works on securing and organising transport for students who live outside Nablus finding the best solutions.

- Cafeteria: the cafeteria provides daily meals, besides snacks and refreshments. A student committee supervises the work, along with the assistance of the Deanship and Student Council and the cafeteria staff. The income generated goes toward the student fund.
- Public Services: the Deanship works on issuing certificates of good conduct, directing new students, introducing them to the University and conveying the feelings of cooperation and friendship prevailing in the University.
- Student Fund: the Student Fund provides students with the financial assistance as loans, scholarships for needy students, as well as job opportunities inside and outside the University.
- Medical Clinic: the Medical Clinic provides first aid services under the supervision of a skilled nursing staff that transfers emergency cases to the local hospitals, medical labs and specialised doctors.
- Social and Psychological Counselling: the Deanship offers students counselling when they are faced with hard times in their University life. It particularly helps students who are suffering in their personal life as a result of academic pressure. Thus, the Deanship aims to contribute to developing and enhancing students, through admiring their skills and encouraging them to excel and create; broadening their horizons through holding individual and group meetings that spread awareness and improve their behaviour and knowledge; providing individual and group counselling services so that students can tackle the issues and problems they would come across during their study years, namely securing financial resources, either through funds, local financial assistance, or job opportunities; and organising professional counselling sessions that help address social and psychological problems.



LIBRARY:

An-Najah National University includes a central main library and three other branch libraries that offer its visitors, with a comprehensive resource pool and assistance. The libraries have evolved from the establishment of the New Campus library. They offer a wide range of services, adapting to the increasing student numbers and therefore demand, providing users with an open and accessible space.

The University libraries consist of approximately 400,000 volumes, 28,000 electronic and specialised periodicals, donated original and unique books and a collection of manuscripts and documents that are currently numbered and published on the University electronic website and offered to the scholars and inquisitors interested in the national and cultural heritage.

The University and its libraries utilises the most cutting edge technology and is directly linked with databases, internet facilities, along with the subscription to thousands of electronic books.

The Old and New Campuses have two- fully-equipped, high-tech conference rooms, allowing user to hold video/ telephone conferences.

The library uses the Dewey decimal classification system and international recognised Machine Readable Cataloging (MARK 21). Plus a trained cadre who deliver the right information, speedily and with the use of modern technologies.

ADMISSIONS:

Admissions does not just relate to the application to the University, but is a constant process until they graduate. Thus, this relationship between the two parties, students and admissions office, is maintained. The admissions office provides students with a variety of official papers they may require to facilitate activities such as transfer from one college to another, amongst other things Admissions is also responsible for updating students with news regarding curriculum changes, or changes in bachelor's degree requirements. Beyond graduation, Admissions maintains graduate records and updates graduates on service available to them.

Admissions plays an important role in ensuring the flow of communication to students during their time at the University and after graduation.

Objectives and Duties:

Admissions follows up on students' records, their progress from enrollment and up until graduation, ensuring they comply with the stated academic regulations. The Admissions Office cooperates with the related committees to communicate the instructions and special arrangements regarding registration and study programmes.

It also notifies failing students through Zajel, the University's online communicator, when they are placed on academic probation and provides the Deans with the names of students who will be placed on the Honour List.

The Admissions Office advances working procedures through the recruitment and deployment of specialised experts, liaising with international associations and attending conferences in order to exchange expertise in the field of admissions.

Admission Procedures:

When the Tawjihi results are released, the Admissions Office announces the acceptance of applications for holders of the General Certificate of Secondary Education. Successful applicants are notified either in person, by attending the New Campus, or through the University website (Zajel).

The acceptance criterion is based on students' cumulative average in the General Secondary Education Certificate. However, different courses require different minimum averages. The following apply:

- Doctor of Medicine: 90%
- Pharmacy: 85%
- Engineering, Optometry, and Radiography, 80%; Veterinary Medicine and Nursing: 75%
- Law, Media, and Information Technology:70%; and
- Interior Design and Graphic Design form Fine Arts, and Physical, Education from Educational Sciences: 65% + Passing a competencies Exam.
- Music, Painting, and Ceramics form Fine Arts: 60% + Passing a competencies exam.
- All other Programmes/ courses: 65%

N.B. Applicants should have obtained the Tawjihi certificates for a maximum of 5 years to apply for all faculties except the Fine Arts.

After determining the admitted grades in all programmes, the Admissions Office announces the results in the local newspapers, along with the dates to complete registration.

Those who apply should provide the Admissions Office with the original transcripts or a verified copy, original birth certificate or a verified copy, copy of their ID card, a recent photo and pay the enrollment fees. Once completed, he/she is issued with a registration number and a University ID card.

Registration:

Students can register online after they consult with course advisors.

┌ *Guide to obtaining a Bachelor's Degree at* ┐
An-Najah National University
└ *2013/2014* ┘

Article 1: These instructions are modified guidelines for granting of the Bachelor's Degree at An-Najah National University for the year 2013/2014, and it is to be applied to all University students starting from the first semester in 2013/2014.

Article 2: These instructions apply to registered students on the Bachelor's Degree in the University faculties of: Sciences, Humanitarian Sciences, Shari'a, Educational Sciences and Teacher Training, Engineering and Information Technology, Medicine and Health Sciences, Economics and Social Sciences, Agriculture and Veterinary Medicine, Law and Fine Arts.

Article 3: The Council of Deans sets the study plans related to the obtaining of a Bachelor's Degree upon the recommendation of the Faculties' Deans.

Article 4: A: The study plans work of the principle of credit hours, which are set as follows for the various programmes:

Faculty of Sciences:

<input type="checkbox"/> Biology:	126	Credit Hours.
<input type="checkbox"/> Biotechnology:	125	Credit Hours.
<input type="checkbox"/> Mathematics:	123	Credit Hours.
<input type="checkbox"/> Statistics:	123	Credit Hours.
<input type="checkbox"/> Physics:	127	Credit Hours.
<input type="checkbox"/> Physics-minor Electronics:	125	Credit Hours.
<input type="checkbox"/> Chemistry:	125	Credit Hours.
<input type="checkbox"/> Applied Chemistry:	124	Credit Hours.

Faculty of Humanitarian Sciences:

<input type="checkbox"/> Arabic Language and Literature:	124	Credit Hours.
<input type="checkbox"/> English Language and Literature:	124	Credit Hours.
<input type="checkbox"/> French Language:	125	Credit Hours.
<input type="checkbox"/> Tourism and Archeology:	126	Credit Hours.
<input type="checkbox"/> History:	126	Credit Hours.

Faculty of Shari'a:

- Jurisprudence and Legislation (Fiqh and Tashree'): 129 Credit Hours.
- Fundamentals of Religion (Usool Al-Deen): 129 Credit Hours.
- Shari'a and Islamic Banking: 128 Credit Hours.

Faculty of Educational Sciences and Teacher Training:

- Elementary Education: 124 Credit Hours.
- Kindergarten: 126 Credit Hours.
- Upper Basic Education- Mathematics: 124 Credit Hours.
- Upper Basic Education-Sciences: 128 Credit Hours.
- Upper Basic Education- Arabic Language: 124 Credit Hours.
- Upper Basic Education- English Language: 121 Credit Hours.
- Upper Basic Education-Social Sciences: 124 Credit Hours.
- Upper Basic Education-Technology: 126 Credit Hours.
- Physical Education: 130 Credit Hours.

Faculty of Engineering and Information Technology:

- Civil Engineering: 161 Credit Hours.
- Architectural Engineering: 164 Credit Hours.
- Building Engineering: 167 Credit Hours.
- Urban Planning: 161 Credit Hours.
- Mechanical Engineering: 161 Credit Hours.
- Chemical Engineering: 158 Credit Hours.
- Industrial Engineering: 161 Credit Hours.
- Computer Engineering: 161 Credit Hours.
- Electrical Engineering: 161 Credit Hours.
- Telecommunications Engineering: 161 Credit Hours.
- Mechatronics Engineering: 161 Credit Hours.
- Environment and Energy Engineering: 159 Credit Hours.
- Material Engineering: 160 Credit Hours.
- Computer Science: 126 Credit Hours.
- Management Information Systems: 121 Credit Hours.
- Computer Information Systems: 125 Credit Hours.

Faculty of Medicine and Health Sciences:

Direct Majors - Undergraduate Programmes:

- Pharmacy: 152 Credit Hours.
- Optometry: 151 Credit Hours.
- Nursing: 133 Credit Hours.
- Midwifery: 142 Credit Hours.
- Biomedical Laboratory Sciences: 130 Credit Hours.

Majors through Bachelor of Biomedical Sciences:

- Biomedical Sciences: 130 Credit Hours.
- Doctor of Medicine: 265 Credit Hours.
- Pharmacy Doctor: 240 Credit Hours.

Faculty of Economics and Social Sciences:

- Economics: 130 Credit Hours.
- Political Sciences: 127 Credit Hours.
- Geography: 126 Credit Hours.
- Sociology and Social Work: 124 Credit Hours.
- Psychology-minor Psychological Counselling: 126 Credit Hours.
- Electronic Media and journalism: 126 Credit Hours.
- Television and Radio Station: 126 Credit Hours.
- Communication and Public Relations: 126 Credit Hours.
- Accounting: 127 Credit Hours.
- Business Administration: 127 Credit Hours.
- Banking and Finance: 127 Credit Hours.
- Marketing: 127 Credit Hours.

Faculty of Agriculture and Veterinary Medicine:

- Veterinary: 167 Credit Hours.
- Plant Production and Protection: 140 Credit Hours.
- Animal Production and Animal Health: 140 Credit Hours.
- Nutrition and Food Process: 140 Credit Hours.

Faculty of Law:

- Law: 138 Credit Hours.

Faculty of Fine Arts:

<input type="checkbox"/> Musicology:	122	Credit Hours.
<input type="checkbox"/> Interior Design (Décor):	121	Credit Hours.
<input type="checkbox"/> Photography and Paint:	124	Credit Hours.
<input type="checkbox"/> Graphic Design:	121	Credit Hours.
<input type="checkbox"/> Ceramic Art:	124	Credit Hours.

Faculty of Honour: 15 Credit Hours.

B. For the purposes and academic needs, the Council of Deans is authorised to upgrade the minimum grade requirements for different Faculties.

C. Students study the stated credit hours in each faculty according to the relevant articles, in addition to the terms of the study plans in the department of specialty.

Article 5: Taking into account “Article 4/B”, each major’s study plan consists of the following:

Compulsory: “18 Credit Hours” University requirements:

Course No.	Course Title	Credit Hours
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English Language 1	3
*11000322	English Language 2	3
11000105	Palestinian Studies	3
11000108	Community Service	1
11000117	Leadership and Communication Skills	1
** 11000127	Introduction to Computer Science	1
	Total	18

* Numbered according to the following faculties:

- 11000322 University English (2): Programmes of the Faculties of Sciences; Engineering and Information Technology; Agriculture; and Faculty of Educational Sciences and Teacher Training; Upper Basic Education-Mathematics, Sciences and Technology.
- 11000323 University English (2): Programmes of the Faculties of Humanitarian Sciences, Shari’a, Social Sciences (Sociology and Social Work, Psychology- Minor Psychological Counseling, and Geography), Fine Arts, Educational Sciences and Teacher Training; Upper Basic Education-Arabic, English, Elementary Education, Kindergarten, Physical Education, and Media.
- 11000324 University English (2): Programmes of Medicine and Health Sciences

and Veterinary Medicine.

- 11000325 University English (2): Programmes of Administrative Sciences (Accounting, Business Administration, Banking and Finance, Marketing, Economics, and Political Sciences), and of Law.

NOTE:

all students who obtain 49 and below in the English Placement Test should take English 11032100, totaling 3 study hours per week.

English Placement Test:

If students get a total of 50% and above in the English Placement Test, which is held at the beginning of each new academic year, they will be exempted from studying Intermediate English 11032100; and if they successfully pass with a total of 80% and above, they will be exempted from studying English (1) 11000103, which will be discounted from their fees.

Computer Placement Test:

** Students are considered successful in the Introduction to Computer Science (11000127) IF they passed the Computer Placement Test and got 60% and above, or IF they have the ICDL (International Computer Driving License) and they have to pay the course fees.

Course Requirements:

Students study these courses according to the terms of the study plans which set out credit hour requirements.

Free Courses:

Students can study 'free courses' from across the different University Programmes, except courses their Department offers for non-majors. Students free course choice should not be equivalent or less than any course a student might have studied previously.

Article 6:

- Compulsory and elective courses are specified by the department of speciality, whether these courses are from the same department or elsewhere.
- The same course cannot be counted as for more than one requirement.
- By decision of the Departmental Council, students can add courses to the electives the Department offers, in accordance to the needs and changes that achieve the University goals in general, and the Department's exclu-

sively. Universally, the University Presidency and Admission should be informed in writing regarding these agreements.

Article 7: A student is not allowed to register a course without already studying its prerequisite. And he/she can concurrently study the course and its prerequisite if he/she is a graduate or had failed this course before (providing that he/she is not disqualified), upon the agreement of the Department Council.

Article 8: The student is immediately accepted in the major once he/she enrolls with the University.

Study duration:

Article 9:

- 9/A/1: The study duration for students studying the majority of programmes is 8 semesters or 4 four years, except Medicine, Pharmacy, Engineering, and Veterinary Medicine programmes. Students who choose to condense their studies may do so but only on the condition they complete their studies in not less than 6 semesters, or 3 years.
- 9/A/2: The study duration for a Bachelor in Engineering, Pharmacy, and Veterinary Medicine is 10 semesters or 5 years and students are allowed to condense their studies but by no less than 4.5 years.
- 9/A/3: The study duration for a Bachelor degree should not exceed 6 academic years or 12 semesters, except Pharmacy, Engineering, and Veterinary Medicine programmes, where study duration should not exceed 7.5 years or 15 semesters.
- 9/A/4: The study year in the Programmes of Medicine Doctor and Pharmacy Doctor is determined by a minimum of 6 years and a maximum of 10 years. The study duration for the Bachelor's of Biomedical Sciences is a minimum of 3 years and a maximum of 5 years.
- 9/B: The total semester duration is 16 weeks, including exams, with the summer semester totaling 8 weeks, including exams.
- 9/C: Each course credit hours are evaluated on the basis of the weekly lecture or seminar for 16 weeks. Laboratory and practical training hours are separately evaluated for each course. In all cases the calculation of credit hours is not less than 2 credit hours for labs or practical training.
- 9/D/1: The Bachelor students can take a minimum "12 credit hours" and a maximum "18 credit hours" for each semester; noting that the registered hours can reach "21 credit hours" upon the agreement of the student's advisor and approval of the Department's Head, in cases where:
 - Student's cumulative average isn't less than 3.

–Student’s graduation depends on allowing him/her to study “21 credit hours” in the graduation semester.

In either case, the total credit hours should not exceed 21 credit hours.

- 9/D/2: Students are allowed to study a number of credit hours less than the minimum, if this is as a result of ceasing some courses, with reasonable grounds for doing so, and upon the advisor’s agreement with approval of the counselling committee in the Faculty.
- 9/D/3: Where Article 9/D/“1, 2” apply; the Admissions Office should be notified in writing.
- 9/D/4: The Summer semester should not exceed 10 credit hours and 11 credit hours, in the graduation semester.
- 9/D/5: The Summer semester should not be less than 6 credit hours so that it equals half the regular semester.
- 9/H: The Bachelor students are classified in the years: second, third or fourth years, - except for Engineering, Pharmacy and Veterinary Medicine Bachelors; if they successfully accomplished not less than 25%, 50% or 75% of the required credit hours for graduation respectively.
- 9/I: Students are classified in the following years: second; third; fourth; or fifth years; in Engineering, Veterinary Medicine and Pharmacy programmes; if they successfully accomplished not less than 20%, 40%, 60% or 80% of the total graduation credit hours, respectively.

Attendance:

Article 10:

- 10/A: Students should attend every lecture, seminar, practical and training sessions upon which they are registered. The course instructor is responsible for the forms that validate students’ attendance and absence records.
- 10/B: Students are not allowed to be absent to more than 12.5% of the course total credit hours of any particular course without any valid reason.
- 10/C: If the student is absent to more than 12.5% of the course total credit hours without having a valid reason, he/she will be disqualified from setting for the final exam and will be given the minimal grade (E). Taking into account “Article 13”, this grade counts towards the student’s semester grades and cumulative total for the purposes of academic probation or dismissal.
- 10/D: If the student misses more than 12.5% of the course credit hours and he/she has a valid reason, accepted by the course instructor, the absence (with or without an excuse) should not exceed 25% of the credit hours. In the cases where the student’s absence exceeds 25%, he/she will be considered to have withdrawn from the course and the Faculty Dean will notify, in writing, the Dean of Admissions for the record.
- 10/E: In the cases of absence due to illness, students must seek the valida-

tion of the University doctor. This validation should then be submitted to the course instructor in no more than one week of the date of students resuming their studies. In all other cases, the student must provide proof of his/her force majeure within a week of resuming their studies.

- 10/F: Articles 10 “C, D, and E” should be recorded in the Department’s records and the Admissions Office should be notified in writing, so they may decide on suitable procedures to follow.
- 10/G: The Departments’ Heads, Staff Members and Dean of Admissions are responsible for the implementation of these Articles and for notification and publication (via Zajel) of students’ disqualified sitting for the final exam in the relevant course.

Exams and grades:

Article 11:

- 11/A: Grades are scored and recorded out of 100 and credit hours should be clearly marked on the final transcript.
- 11/B/1: The final grade of each course is the cumulative total of the entire final exam and the semester work.
 - 11/B/2: Each course’s final exam is a comprehensive exam that is held at the end of the semester, and attributes to 50% of the course total grade. The grade may cover practical, oral, or report examinations.
 - 11/B/3: Each course will include two written exams as a minimum and students will be notified a week in advance of their dates. Seminars and research may be exempt; where the work includes oral, practical, or report examinations, or a combination of them. Reports and exams papers are returned back to students after grading, and each Department’s Council decides on the suitable evaluation methods to assess students’ level.
- 11/C: The course instructor is responsible for setting out the grades and submitting them signed and dated to the Department’s Head within the time frame fixed by the Council of Deans.
- 11/D: The student’s final grades should not be modified after the grades are published. If any student wishes to appeal their grade, they must do so within 3 days of the date publication and pay a fee of JD5. His/her request is then forwarded to the course instructor for reconsideration. In the exceptional cases of a further appeal, the student must pay a sum of JD10 and his/her objection is then forwarded to the Faculty Dean to consider.
- 11/E: Exam papers are preserved by the Department’s Head for 2 months following the exams end, and then disposed of according to the University policy.
- 11/F/1: Students who are absent to any exam due to reasons of force majeure, should provide the course instructor with proof within 3 days of returning to studies.

- 11/F/2: Students who are absent to any term or final exams, and the course instructor does not accept their reason, will receive a grade of E.
- 11/F/3: If a student does not complete the course requirements or is absent to the course final exam, and in both cases the course instructor does not accept his/her reason, he/she will receive an I (Incomplete) grade; and thus, the student will have a maximum period of 10 days at the end of the semester, and a maximum period of 5 days of the end of the summer semester, to reverse this grade otherwise the student will receive an E grade.
- 11/G: The minimum grade in a course to consider passed is D and the minimum final grade is an E.
- 11/G/1: The course grades and cumulative total are classified according to the following numeric scales:

*Under -graduate:
Cumulative Averages:*

Numeric Grade	Point Value	Letter Grade	Result
100-90	4	A	Pass
89.99-88	3.75	A-	Pass
87.99-85	3.5	B+	Pass
84.99-80	3.0	B	Pass
79.99-78	2.75	B-	Pass
77.99-74	2.5	C+	Pass
73.99-70	2	C	Pass
69.99-65	1.75	C-	Pass
64.99-63	1.5	D+	Pass
62.99-60	1	D	Pass
59.99-45	0.75	D-	Fail
44.99-0	0.0	E	Fail

Under-graduate (except for the Medicine Doctor):

Under Graduates Cumulative Average	
Rate	Numeric Grade
Excellent	4.0-3.65
Very Good	3.64-3.0
Good	2.99-2.35
Satisfactory	2.34-1.7
Weak	1.69 and less

Doctor of Medicine (Clinical trials phase):

Numeric Grade	Point Value	Letter Grade	Result
100-90	4	A	Pass
89.99-88	3.75	A-	Pass
87.99-85	3.5	B+	Pass
84.99-80	3.0	B	Pass
79.99-78	2.75	B-	Pass
77.99-74	2.5	C+	Pass
73.99-70	2	C	Pass
69.99-65	1.75	C-	Pass
64.99-63	1.5	D+	Pass
62.99-60	1	D	Pass
59.99-45	0.75	D-	Fail
44.99-0	0.0	E	Fail

- (D) Pass: Requirements of Biomedical Sciences.
- (C) Pass: For the clinical requirements and any further grade less than (C) at this point is consider a Fail.

Cumulative Average (Clinical Trials phase):

Under Graduates Cumulative Average	
Rate	Numeric Grade
Excellent	4.0-3.65
Very Good	3.64-3.0
Good	2.99-2.5
Satisfactory	2.49-2.0
Weak	1.99 and less

- 11/G/2: The semester average is the total grades achieved in that semester pass or fail. And the general cumulative average is the total grades achieved in both clinical phases, and according to the estimations of the clinical phase.
- 11/G/3: Every student that receives a semester average of 3.5 and above, the Dean places his/her name on the Faculty roll of honour. This is also included in his/her academic record.
- 11/G/4: Taking into account the provisions of “Article 13”, all previous averages are counted by multiplying each course score with the credit hours of the course and dividing by the total of credit hours.
- 11/G/5: The semester or cumulative average is calculated to the nearest decimal place.

Academic Probation and Dismissal:

Article 12:

- 12/a: A student will not receive an academic warning notice for their performance in their first semester of study at the University. However, the grades received in the first semester will still count towards their accumulative average.
- 12/b: If a student gets a cumulative average of less than 1.7 in all courses and less than 2.0 for the Doctor of Medicine programme, he/she will be placed on academic probation.
- 12/c: If the student fails to raise his/her cumulative average to 1.7 or above, and 2.0 or above for the Doctor of Medicine programme, after receiving 3 academic warning notices, he/she will be dismissed from the faculty. The University will permit the student to continue studying for 3 additional academic semesters to remove the academic warning notices. However, they must pay the probationary fees in addition to the regular course fees in order to remain in the University.
- 12/d: A student who fails all the University courses for two consecutive semesters, after the first semester, will be dismissed from the University.
- 12/e: A student who successfully accomplishes at least 75% of the total credit hours required for graduation will be exempted from academic dismissal.
- 12/i: The summer semester does not count for the purposes of academic warning or dismissal.
- 12/j: A student dismissed for a low average may apply for admission to another faculty where the admission requirements are less than his/her former faculty. And if the student's application is approved, he/she can reactivate his/her academic record in accordance with the requirements of the faculty that accepts his/her application. His/her previous study duration will be counted towards their required graduation years, assuming it within the minimum and maximum allowed duration of a programme, and where 12 credit hours will count as one semester.
- 12/k: A student dismissed from the University due to poor academic performance cannot be admitted again.
- 12/l: A student dismissed as per "Article 25/k" of the Student Violation Monitoring System cannot be admitted again.

Repeating Courses:

Article 13:

- 13/a: If a student repeats any course, the higher of two grades will be calculated in his/her cumulative average.
- 13/b: When a student repeats a course due to failure or any other reason, the credit hours of this course are calculated to the credit hours required for graduation once and the higher grade is calculated.

Dropping and adding courses.

Article 14:

- **14/a** : Students are permitted to drop registered courses and add new ones within the first week of regular semester, and within three days of the beginning of the summer semester. The dropped courses will not go in the student's academic transcript.
- **14/b**: Subject to Article 14/a, students can withdraw from a course within the first four weeks of the first and second semester, and within the first two weeks of the summer semester. However, in the latter case, the course will remain in the student's transcript appearing as "Withdrawn". This assumes that the dropped course would not decrease the study load to below the permitted minimum for the semester, unless with the student has the approval of their advisor and the faculty committee. Outside of these specific timings it is not possible to withdraw from any course.
- **14/c**: Students who drop courses only under the conditions set out in Article 14/a, will be entitled to a refund of their tuition fees. Otherwise, they will lose all financial right.
- **14/d**: Withdrawal from a course within the period mentioned in Article 14/b must be done according to a process set out by the Admissions Office, after approval by the student's advisor.
- **14/e**: If a student withdraws from all courses registered for the semester, under Article 10/d, their study would be deferred for that semester, and noted on their transcript.

Postponement of study and withdrawal from the university

Article 15:

- **15/a** : Students are allowed to postpone study by special request, and for reasons approved by the faculty's guidance committee, for a time period that is no longer than two years, whether consecutive or split.
- **15/b**: Students who apply for a postponement must notify the Dean of their faculty within the first week of the semester. The Dean will then decide on whether to grant a postponement and report to the Dean of Admissions and Registration, the Dean of Student Affairs, the Head of the concerned Department and the student's advisor with the decision.
- In cases of an emergency, the counselling committee would consider a postponement request, subject to the period allowed in Article 15/b. They would then report to the concerned officials, by the end of the semester at the latest. Students of the Faculty of Medicine are not permitted to postpone for more than two semesters.

- **15/c:** Taking Article 9/a into consideration, the period of postponement does not count within the maximum period allowed to obtain the degree.
- **15/d:** Students who postpone study, for whatever reason, and seek education at another university during that period, must get permission from the Dean of their faculty, provided that the other University is aware, and is within the recognised education system.
- **15/e:** Students who exceeds the permitted postponement period lose their place at the University, but are permitted to apply as a new student according to the University’s admissions process.
- **15/f:** New students and transfer students are not allowed to postpone study before the end of their first semester. In exceptional cases, a request can be referred to the counselling committee to make a decision and report to the Dean of Admissions in writing.
- **15/g:** Students who wish to withdraw from the University must apply to the Dean of Admissions, completing the required paperwork, and in those cases the note “dropped out” would appear in the transcript, and they will lose their position in the University. If a withdrawn student wishes to re-join the University, after leaving for no longer than 4 semesters, representing the limit for postponement, they would have to submit a new application form and can then return to their faculty and retain their academic record according to the working plan at the time of their return. In such cases the previous study period would count towards their required duration for study to graduate, assuming it is within the maximum and minimum duration limits.
- **15/h:** Students who drop out from the University for one or more semesters without written permission from the University, lose their position at the University, but are allowed to re-apply to join the University according to its Admissions policy.

Transferring from other universities

Article 16:

- **16/a:** The transfer application must be submitted to An-Najah’s Dean of Admissions before registration for the commencement of the regular or summer semester. The Admissions and Registration Committee will then make a decision on the application during the registration period for the semester.
- **16/b :** Students are allowed to transfer to An-Najah, if vacancies are available, under the following conditions:
 - Transferring students meet the admissions requirements.
 - The Tawjihi or equivalent test score is accepted in the faculty the transfer student wishes to join in that specific year.
 - That the student is transferring from a university acknowledged by An-Najah.

- That the student's former study was according to a regular study system.
 - The transferring student's GPA is 2.35 or above in all the courses they studied in the former university.
 - Students who are transferring to the Faculty of Medicine and Health Sciences and Medical Pharmacy should have finished the Bio-Medical Science level with a GPA of no less than 3 in all its courses in the university they are transferring from and their Tawjihi, or equivalent test score, in that specific year of transfer.
 - That the transferring student is not under an academic or behavioural warning notice, or suspended from the university they are transferring from.
- **16/c:** The Department calculates the accredited hours from the original university according to the Department's study plan, provided that no more than 50% of the credit hours required for graduation from An-Najah are accredited from the student's original university, that the grade for the accredited courses is no less than 2.35, and that Dean of Admissions is notified in writing.
 - **16/d:** The courses taken in the former university would not count in the student's An-Najah GPA.
 - **16/e:** A transfer student will be credited one semester for each 12 credit hours in their former university.

Accrediting hours from other universities for An-Najah students

Article 17: It is possible for students who postpone study at An-Najah and return to it with an academic record from another university, to submit that record to be accredited at An-Najah before the end of the semester in which they re-join the university, under the following conditions:

- That the courses studied during the postponed period are within a Bachelor degree programme.
- That no more than 50% of the courses required for graduation from An-Najah are accredited from the courses taken in another university.
- That the student's grade in the course requested to be accredited for is no less than 2.35 (C).
- That the concerned department would accredit the courses that are similar to those of the university according to the department's study plan, and that the Dean of Admissions is notified.

Transferring from one faculty to another at An-Najah

Article 18:

- **18/a:** It is possible for An-Najah students to transfer from one faculty to another, or from one programme to another within the same faculty, provided that there are vacancies in the desired programme, and that their Tawjihi average qualifies them to join that programme in the year they have joined the university. In cases where their Tawjihi grade does not qualify the student to apply for a certain programme, the average for their GPA with the Tawjihi grade is taken instead.
- **18/b:** Students who wish to transfer from one faculty to another must pay a transfer fee of JD 25, and complete the Dean of Admissions' transfer application, in a regular or a summer semester, no later than the day before registration for the course begins. Transfer applications will not be accepted during the registration period, as that is when the Admission committee considers applications.
- **18/c:** Students who transfer from one programme to another (within the same faculty or to a different one) apply to the study plan of the programme they transfer to in that specific year, and will be accredited for all the courses that are similar or equivalent to those in the new programme. Accreditation is with the recommendation of the concerned Department and the approval of the Dean of the faculty. Transferring students would also be accredited for the university requirement courses and the free courses. All other courses that are not within the new programme will be dropped from their transcript, whether they passed or failed them. Transferring students will be accredited one semester for each 12 accredited hours, and the concerned Department is to notify the Dean of Admissions in writing.
- **18/d:** In all the cases stated in this article, the accredited courses will be counted in the transferring student's GPA, and all academic, warnings and suspension regulations will apply to them after one semester in the new programme.

Requirements for a Bachelor's degree

Article 19: The University awards students with a Bachelor degree upon completion of the following:

- **19/a/1:** Passing all the required courses according to the stated study plan for the major.
- **19/a /2:** Having a GPA of no less than 1.7 (or 2 for Medical Pharmacy and Engineering) in all the studied courses.
- **19/b:** Having spent the minimum period of time required to obtain the degree, and not having exceeded the maximum period stated in Article 9/a.
- **19/c:** Having finished no less than 50% of An-Najah's required hours for students transferred from other universities.

General Provisions/ Regulations:

- Article 20/a: If the student's major requires one compulsory course and this course is not available in the graduation semester or is incompatible with another compulsory course, the Departmental Council can approve an alternative or equivalent course on his/her major programme or any other University programme.
- Article 20/b: If the student's graduation requires one elective course and he/she could not sign up to any of the available courses, the Departmental Council can approve the replacement of this course with another one on the same programme, or any other University programme.
- Article 20/c: In both cases, the Dean of Admissions should be notified in writing.
- Article 21: If the student only requires less than 12 credit hours to graduate, in his/her graduation semester, he/she can sign up to the hours he/she needs without penalty.
- Article 22: The advisor and department of major are responsible for the continuity of the academic process, including: keeping an accurate copy of the student's academic record; checking the completion of the graduation provisions; and periodically notifying students with any information of relevance.
- Article 23: The graduate student should receive a clearance form from the University to enable them to complete the graduation procedures.
- Article 24: No student should claim that he/she does not know any of these instructions, and should be responsible for keeping informed of announcements via the University boards.
- Article 25: The certificates carry the date of merit. The graduation ceremonies are held at the end of second semester of the academic year and at the end of the summer semester.
- Article 26: The Council of Deans decides on all matters where there are no fixed procedures within these instructions or provisions.
- Article 27: The University President, Deans of Faculties and Dean of Admissions are instructed to implement these provisions.

Procedures for verifying students' Medical Reports:

- Students who are absent due to sickness should follow the following procedures to verify their medical report, otherwise, they may be considered to be absent without a valid reason.
- The medical report should be submitted in person to the University clinic.
- The medical report should be submitted the day that follows the end of the sick leave; and if this next day happens to be an official holiday, the student should then hand in the medical report on the first day that follows the end of the holiday.
- Students should submit all the laboratory tests and x-rays that verify the sick leave.
- In cases where students need to stay overnight in a hospital, he/she should notify his/her faculty.
- In cases where the medical report are issued/ processed from a hospital, it should be signed by the resident doctor as well as the supervising doctor and carry the hospital stamp.
- Health issues such as, psychological, neurological, heart, kidney and spinal diseases, the University clinic should be notified immediately following diagnosis.
- If the medical report is proved invalid, the University administration should be notified in order to take forward suitable procedures.

Faculty of Honours:

Requirements to apply for the Faculty of Honours:

- To be an undergraduate student at An-Najah National University.
- To have finished at least one year at the University; 30 credit hours.
- To have achieved no less than 87% of the total scores in his/her faculty or 3.63 for the classes of 2008 and above.
- To have a good record.
- To have a shown outstanding achievement within his/her faculty.
- Maintenance of high marks. In the event of a student obtaining lower marks, he/she will be offered another semester to compensate or he/she will be dismissed.

Courses:

- Students take 15 credit hours: 9 hours (mandatory); 6 hours (elective).
- Students do not pay tuition fees to the above mentioned courses.
- There are no marks for such courses and they are not considered in the final total average.
- Qualified lecturers and professors teach the courses.
- The courses are available each semester, and they are:

The compulsory courses (9 credit hours)

391001	Communication Skills	مهارات الاتصال	3 Credit Hours
391004	Study Group for Skill Enhancement	حلقة دراسية في تعزيز القدرات	3 Credit Hours
391003	Leadership Skills	مهارات قيادية	3 Credit Hours

The Elective Courses are from the following:

392001	English Language Skills	مهارات في اللغة الانجليزية	3 Credit Hours
392002	Educational Technology	تكنولوجيا التعلم	3 Credit Hours
392003	Social Work	الخدمة الاجتماعية	3 Credit Hours
392004	Public Relations	العلاقات العامة	3 Credit Hours
392005	Introduction to Law	مقدمة في القانون	3 Credit Hours
391002	Learning and Research Source	المصادر التعليمية والبحثية	3 Credit Hours
392006	Discover Palestine	اكتشف فلسطين	3 Credit Hours

Procedures and regulations in cases of student violations:

Article 1: This is the “Procedures and Regulations for Students’ Violations”, and is valid from 4/4/1984.

Article 2: Every University student is subject to the rules set out here.

Article 3: The following words and phrases contained in these articles have their assigned meanings below, except if their contexts indicate otherwise:

- University: An-Najah National University.
- Registered Student: Regular students (full-time and part-time) in his/her academic career in An-Najah University or irregular students (who stop their study for a semester or more) according to the instructions of obtaining the Bachelor’s Degree in An-Najah University for the year 1982.
- Fraud: Students illegally using or resorting to materials or information or providing them to others in the exam. This includes having information or materials during the exam on his/her desk or in the exam room.
- University Family: Administration, staff and registered students.

Subject 1: Academic Violations

Article 4: The following actions/ behaviours are considered academic violations:

- a. Disturbing order and discipline of lectures, practical classes or any other University activity.
- b. Disturbing the exam process.
- c. Fraud in exams or attempting and participating in the act of fraud.
- d. Deliberately missing lectures, seminars and practical classes which are required under the programme of study.
- e. All incitements to Article 4/d.
- f. Violating the academic regulations established in the different faculties and departments.

Subject 2: Behavioural violations

Article 5: Violating the University laws and regulations.

Article 6: Any act or statement committed by individuals or the corporate bodies inside or outside the University which damages the reputation, or defames/denigrates the University or any of its officials and staff.

Article 7: Violating the sanctity of Ramadan or using words that damage religious or nationalist considerations.

Article 8: If the student is convicted of a crime involving a breach/ violation of reputation.

Article 9: Participation in a collective activity within the University campus that is not authorised by the specialised University bodies, as well as breaches of a licensed collective activity, where it violates the license.

Article 10: Using University facilities, buildings, accommodation and clubs for purposes which they were not made for and without the authorisation of the specialised University bodies.

Article 11: Fund-raising of all kinds without the authorisation of the specialised University bodies or using such funds in a manner they were not intended.

Article 12: Damaging or destroying University facilities/ possessions.

Article 13: Counterfeiting University papers or using forged documents.

Article 14: Pilferage; or attempting or participating in any act of pilferage inside the University. This article shall apply to any of the acts committed outside the University, but where the University is a participant.

Article 15: Forced entry without official permission to University rooms, offices, halls, buildings, or facilities.

Article 16: Failure to comply with an order to leave a classroom by a member of the teaching staff.

Article 17: Obstruction of the work of any of the University committees, including interference, threats, or the like.

Article 18: Possession of tools or materials which are unsafe for others, or threatening to use them inside the University campus or during University activities.

Article 19: Smoking in public places, where smoking is prohibited, indicated by “No Smoking” signs.

Article 20: Ridiculing/mocking or any such behaviour towards an individual or group of the University family so as to cause embarrassment, fear, humiliation, or cause physical or psychological harm.

Article 21: Attacking or participating in the act of attacking any of the University members.

Article 22: An attempt to attack, threat to attack, or incitement against any member of the University family.

Article 23: The use of the name of the University or holding yourself out as representing the University, without written authorisation.

Article 24: Defamation the University reputation in newspapers, magazines, brochures, or any means of mass media.

Subject 3: Sanctions

Article 25: Sanctions are:

- Written warning.
- Financial penalty: in case of damaging the University properties.
- First warning.
- Second warning.
- Third warning.
- Deprivation, for a limited time, of the services offered by a facility or any appropriate area.
- Deprivation, for a limited time, to undertake an activity where the violation was committed.
- Cancellation of registration in a course/s in the semester where the violation is committed.
- Cancellation of examinations in one course or more for one semester and a grade of 0.
- Dismissing the student from the University for a period ranging from one to four semesters.
- Expulsion from the University.

「 Faculty of Economics
& Social Sciences 」

{ Accounting Department }

Requirements for Undergraduate Program in
Accounting
2013-2014

Requirements	Credit Hours
University Requirements	18
Department Compulsory Courses	93
Department Elective Courses	12
Free Electives	6
Total Credit Hours	129

Vision

The Accounting Program is designed with a focus on both theoretical and practical aspects to ensure high-quality accounting education and to provide students with strong accounting skills in accordance with the requirements of the latest international standards.

Mission

The program mission stems from and is in harmony with the mission of the University and the faculty: providing and fostering high quality education, research and community service. This is achieved by keeping abreast of all the latest scientific and practical developments.

Objectives

1. Meet the different needs of the local and regional labor markets.
2. Introduce students to the scientific origins of accounting using high-quality educational standards.
3. Encourage scientific research in the field of accounting.
4. Develop the scientific and practical knowledge as well as the research skills of the students required to meet the needs of the labor market or to pursue graduate study.

Intended Learning Outcomes IOLs:

Firstly: Outcomes of knowledge and understanding:

- Outcomes of general knowledge: Students acquire these outcomes through studying various courses, such as: Palestinian Studies, Islamic Education, Arabic Language and Introduction to Computer Science.
- Outcomes of relevant knowledge: Students acquire these outcomes through taking compulsory and elective courses offered through the other programs relevant to Accounting, such as: Bachelor's in Administration, Bachelor's in Economics, etc.
- Outcomes of specialized knowledge: which are acquired through the intensification of knowledge in the field of Accounting, and which are obtained through compulsory and elective courses, prepared according to the latest scientific and educational standards.

Secondly: Applied Outcomes:

- Outcomes of analytical skills: the student acquires these skills through relevant courses, such as: Financial Statement Analysis, Financial Management and Operations Research.
- Outcomes of applied skills: the outputs acquired by the student through the application and practice of knowledge and managerial theoretical concepts, provided

from textbooks and practical application. The student acquires these courses from courses specially designed for this purpose, for example: Field Training, Computerized Accounting, etc.

- Outcomes of Research Skills: which students learn through learning the methodology of scientific research, with all its steps and stages. And these are achieved through courses in Business Statistics, Research Methods for Business, Seminar in Accounting, as well as other research missions required in other courses.
- Outcomes of mental skills: which are acquired through conducting systematic scientific thinking provided through the application of various teaching methods that develop the mental skills of students.

Thirdly: Outcomes of professional values and ethics

The outcomes that are acquired through the students' knowledge of the professional values, behaviours and ethics students should have right after graduation. This is through practicing their professions in the labour market. These outcomes are achieved through studying courses that deal with these objectives in part or in whole, such as, Auditing.

University Requirements (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
11000101	Islamic Culture	3	
11000102	Arabic Language	3	
11000103	University English I	3	Remedial English (English 100)
11000325	University English II	3	11000103
11000105	Palestinian Studies	3	
11000117	Leadership and Communication Skills	1	
11000108	Community Service	1	
11000127	Introduction to Computer Science	1	

Department Compulsory Courses (93 credit hours)

Course #	Course title	Credit hours	Prerequisite
11101251	Business Law	3	
11032101	English for the Workplace	3	11000325
10801111	Principles of Microeconomics	3	
10801112	Principles of Macroeconomics	3	10801111
10866111	Principles of Management I	3	
10876111	Principles of Marketing	3	
10871121	Principles of Finance	3	
10221109	Business Math	3	
10801113	Business Statistics I	3	
10801211	Business Statistics I	3	10801113
10871213	Financial Management I	3	10871121
10871320	Investment Analysis and Management	3	10871213
10861111	Principles of Financial Accounting I	3	-----
10861121	Principles of Financial Accounting II	3	10861111
10861211	Accounting for Partnership Corporations	3	10861121
10861212	Cost Accounting	3	10861121
10861213	Research Methods for Business	3	10801113
10861221	Accounting: Computer Applications	3	10861121
10861222	Governmental Accounting	3	10861121+10801112
10861223	Tax Accounting	3	10861211
10861224	Intermediate Accounting I	3	10861211
10861311	Managerial Accounting	3	10861212
10861312	Financial Statements Analysis	3	10861224
10861313	Intermediate Accounting II	3	10861224
10861321	Auditing	4	10861313
10861322	International Accounting	3	10861313
10861412	Accounting Information Systems	3	10861313
10861421	Advanced Accounting	3	10861313
10861422	Accounting Theory	3	10861313
10861423	Seminar in Accounting	2	Completion of 100 credit hours including 0801211
10861425	Practical Training	3	Completion of 90 credit hours
11032101	English for the Workplace	3	11000325

Department Elective Courses (12 credit hours)

Course #	Course name	Credit hours	Prerequisite
10861251	Accounting for Subsidiaries and Other Related Issues	3	10861121
1861252	Oil, Gas, and Other Natural Resource Accounting	3	10861121
10861261	Agricultural Cost Accounting	3	10861212
10861214	Accounting for Financial Institutions	3	10861121
10861353	Accounting for Small and Medium-Sized Entities (SMEs)	3	10861121
10861362	Social Responsibility and Environmental Accounting	3	10861313
10861363	Accounting and Auditing Standards for Islamic Financial Institutions	3	10861224
10861454	Contemporary Issues in Accounting	3	10861322
10861464	Readings in Accounting	3	10861321
10866120	Principles of Management II		
10866215	Human Resource Management		
10866411	Operations Research		
10801228	Money and Banking		
10801332	Public Finance		
10801423	Economic Feasibility Studies and Project Evaluation		
10871225	Financial Market		
10871321	Islamic Banks		

Free Electives (6 credit hours)

Course #	Course title	Credit hours	Prerequisite
7303433	Pharmacology and Community	2	-
10311197	French Language	2	-
11000131	Geography of Palestine	2	-
11000142	Family System in Palestine	2	-
11000143	Principles of Islam	2	
11000144	Biography of the Prophet Mohammad PBUH	2	-
11201101	Introduction to Musicology	2	-
11201103	Palestinian Music Folklore	2	-

Course Descriptions

10861111 PRINCIPLES OF FINANCIAL ACCOUNTING 1

This course covers the basic concepts of financial accounting. It includes the definition, the principles, and the assumptions of accounting in addition to the double entry system and the accounting cycle. It also deals with the preparation of basic financial statements (income statement, statement of changes in equity, and statement of financial position). In addition, the course covers the accrual adjustments related to various accounts at the end of the fiscal year, based on a customary basis of accounting, and accrual basis. The course also discusses how to address accounting errors which may be discovered in the same financial period or in subsequent periods.

10861121 PRINCIPLES OF FINANCIAL ACCOUNTING II

This course builds on the Principles of Financial Accounting 1. It covers the accounting treatment of current assets, non-current assets, and current liabilities.

10861211 ACCOUNTING FOR PARTNERSHIP AND CORPORATIONS

This course introduces students to accounting treatment of issues related to partnerships: composition, preparation of financial statements, distribution of profits and losses between the partners, changes in ownership when a partner leaves or a new partner joins, and finally liquidation upon agreement. The course also covers the accounting treatments for corporations. It presents the accounting treatment of the company composition, the issuance of shares capital, and the dividends. The calculation of EPS is also explained. This is in addition to identification of the different types of stocks and their characteristics. The course also covers the accounting treatment for all processes associated with the issuance of bonds. Finally, the course caps with a discussion of the legal and accounting aspects of corporate liquidation.

10861212 COST ACCOUNTING

This course aims to introduce students to the cost accounting practice and applications, mainly in industrial companies. It discusses the cost elements, classifications, and behavior according to both job order costing system and process costing system. This course also addresses the standard costing system and its importance in the control over the elements of variable costs. The course concludes with a discussion of cost losses, joint costs, and standard costs.

10861213 RESEARCH METHODS FOR BUSINESS

This course introduces students to the world of business research. It provides students with practical perspectives on how research can be applied in real business situations. Topics include an introduction to research; scientific investigation; the research process; measurement of variables; measurement scaling; data collection methods and techniques; experimental design; sampling; quantitative and qualitative data analysis; and research report.

10861214 ACCOUNTING FOR FINANCIAL INSTITUTIONS

This course is divided into two main topics: the first addresses accounting for insurance companies. It includes a comprehensive study of the accounts of insurance companies in terms of books and records, and handling of insurance operations. It also includes a thorough study of investments, and the way of accounting for it in the books, as well as the way of preparation of financial statements of insurance companies. The second topic is accounting for banks, especially commercial ones. The students are given a general idea and comprehensive information about the accounting treatment of bank operations offered by various sections of the bank. The course ends with a look at how financial statements of banks are prepared.

10861221 COMPUTERIZED ACCOUNTING

This course enables students to master computerized accounting programs used in the labor market, in addition to accounting applications using Excel.

10861222 GOVERNMENTAL ACCOUNTING

This course deals with the conceptual framework of accounting in the public sector using the fund theory. It includes the accounting rules and principles used in the public sector. It also explains the state budget and stages for its preparation. In addition, the course covers all phases of both internal and external control.

10861223 TAX ACCOUNTING

This course deals with the study of the characteristics and application of tax accounting for direct and indirect taxes. It identifies the conditions of imposing income tax on both individuals and establishments, and on the other hand, the conditions of exemptions from paying taxes. The course focuses on the distinction between accounting income and taxable income by examining the elements of the income statement prepared by the companies to find out their compatibility with tax law. It also sheds light on how to estimate taxes and describe legal procedures to object an estimate. The various aspects of this course will be covered by presenting case studies.

10861224 INTERMEDIATE ACCOUNTING 1

This course builds on the understanding of accounting principles developed

in previous courses to extend the knowledge of the students in financial accounting. Topics covered include exploring the financial reporting environment and accounting standards, the conceptual framework of financial reporting, a detailed theoretical study of the financial statements, cash and receivables, inventories, property plant and equipment as well as advanced treatments for the amortization of assets and impairment. Finally, students are exposed to the accounting treatment of intangible assets.

10861311 MANAGERIAL ACCOUNTING

This course includes case studies designed to help the student understand the accounting basis and application used to provide information necessary for management. It deals with the cost-volume-profit analysis, short-term decisions, and budgeting. Finally, it covers accounting treatments of main and sub-products, and distribution of their joint costs.

10861312 FINANCIAL STATEMENTS ANALYSIS

This course deals with the study of the various items of financial statements and the relationships between them. It focuses on using the tools and methods of financial analysis as a basis for objective analysis to provide the necessary information to decision makers. Case studies will be used, when appropriate, to cover the topics of this course.

10861313 INTERMEDIATE ACCOUNTING II

This course covers in detail important accounting issues such as accounting for financial investments, leases, and pension funds. It also deals with the recognition of income and deferred taxes.

10861321 AUDITING

The aim of this course is to study the techniques and rules followed in auditing the financial statements in accordance with the International Auditing Standards (ISAs). It includes audit plan, program and procedures used to issue an opinion about the fairness of financial statements. This course also examines case studies in auditing concerning the application of audit procedures on specific cases.

10861322 INTERNATIONAL ACCOUNTING

This course covers the principles and concepts of the international accounting, in addition to a comparison between accounting practices in different countries and the process of harmonization of these practices as well as the translation of the financial statements. It also seeks to provide a clear understanding of International Financial Reporting Standards (IFRS) with an explanation of the most important standards and their applications.

10861412 ACCOUNTING INFORMATION SYSTEMS

This course aims to provide students with the basic concepts of accounting

information systems, databases and system operations as well as the processing of different transactions and preparation of financial statements. It also includes providing students with design skills, especially those related to the data flow maps, documents and reports. This course also highlights the stages of system design including implementation of the system. Testing and transferring the data to the new system as well as system maintenance and support are also covered.

10861421 ADVANCED ACCOUNTING

This course includes the accounting procedures for consolidated financial statements, as well as accounting procedures related to investment, merger and acquisition (M &A).

10861422 ACCOUNTING THEORY

This course is a survey of current accounting theory. Topics include the history and development of accounting; the nature, uses and users of accounting; methodologies and approaches to the formulation of an accounting theory; accounting frameworks; the structure of accounting theory; current-value accounting and capital maintenance concepts; the information content of accounting reports and efficient market hypothesis; and modern methods for accounting measurement during inflation.

10861423 SEMINAR IN ACCOUNTING

The aim of this course is to empower and train students to prepare a full scientific research in the area of accounting by shedding light on one of the accounting problems in accordance with scientific research rules.

10861425 PRACTICAL TRAINING

In this course, the student will perform internship in one of the institutions that are agreed upon according to a specific mechanism including at least 180 hours of training. This training is done under the supervision of a department academic advisor who conducts field visits to the student. The trainer of the student will fill out an evaluation form prepared by the Accounting Department.

10861251 ACCOUNTING FOR SUBSIDIARIES AND OTHER RELATED ISSUES

This course aims to introduce students to the accounting procedures used by the companies with various branches and divisions. Furthermore, it addresses accounting for consignment goods and non-profit organizations such as charities and clubs.

10861252 OIL, GAS, AND OTHER NATURAL RESOURCE ACCOUNTING

The aim of this course is to introduce students to the accounting principles and procedures for the financial activities of the extracting projects like oil companies.

10861261 AGRICULTURAL COST ACCOUNTING

In this course, the student learns the cost systems applied in agricultural projects. Student will study the accounting procedures related to agricultural projects, including its two branches, plant and animal, in terms of how to classify and calculate the cost of production, and how to calculate the result of their work and the preparation of financial statements.

10861353 ACCOUNTING FOR SMALL AND MEDIUM-SIZED ENTITIES (SMEs)

This course covers the application of accounting processes in small and medium-sized entities in accordance with IFRS for SMEs which have been developed in 2009 by the International Accounting Standards Board (IASB); modified for the IFRSs. This standard is used by small businesses to prepare the final accounts in accordance with these standards; it gives greater credibility to the accounting information related to this type of entities.

10861362 SOCIAL RESPONSIBILITY AND ENVIRONMENTAL ACCOUNTING

This course deals with social effects of the financial accounting and many different issues that have been ignored in traditional accounting. The course deals with the environmental and the social responsibility, social responsibility accounting concepts, the main trends of social responsibility accounting, accounting and disclosure in social responsibility.

10861363 ACCOUNTING AND AUDITING STANDARDS FOR ISLAMIC FINANCIAL INSTITUTION

This course deals with accounting and auditing standards for Islamic financial institutions issued by the Accounting and Auditing Organization for Islamic Financial Institutions. These standards provide accounting treatment of operations that are consistent with the principles of Islamic law shari'a such murabaha (resale) and musharaka (participation)

10861454 CONTEMPORARY ISSUES IN ACCOUNTING

The aim of the course is to provide students with practical and scientific applications of fair value accounting, accounting for human resources and other recent issues in the field of financial accounting.

10861464 READINGS IN ACCOUNTING

This course is designed to keep up with international research in the field of accounting. It also involves a deep discussion and review of ideas in recent articles and their findings.

FACULTY MEMBERS:

Name	Academic Rank	University of Graduation
Dr. Nafith Abu Baker	Associate Professor	University of Dundee, Britain.
Dr. Mu'z Abu Alia	Assistant Professor	Université Libre De Bruxelles, Brussel, Belgium
Mr. Hatem Al-Kukhun	Assistant Preofessor	Sudan University of Science and Technology, Sudan
Mr. Saed Al-Kouni	Assistant Professor	Germany
Mr. Ghassan Da'ass	Assistant Professor	Amman Arab University, Jordan
Mr. Sameh At'out	Assistant Professor	Arab Academy for Banking and Financial Sciences, Jordan
Mr. Bahjat Younis	Lecturer	University of Jordan, Amman
Mr. Bashar Fattouh	Lecturer	Arab Academy for Banking and Financial Sciences, Jordan
Mr. Alaa Jarrar	Instructor	An-Najah National University, Palestine
Mrs. Sara Al-Sargali	Instructor	Lancaster University, UK
Mrs. Doha Al-Tanbour	Instructor	An-Najah National University, Palestine
Mr. Ahmad Ridda	Instructor	An-Najah National University, Palestine
Mrs. Dalia Al-Ezza	Instructor	University of Sussex, UK

{ Business Administration Program }

Undergraduate Program in Business Administration

Requirements	Credit Hours
University Requirements	18
Department Compulsory Requirements	87
Department Elective Requirements	18
Free Electives	6
Total Credit Hours	129

Historical Background

The Department of Business Administration, established in 1978, is one of the main departments of the Faculty of Economics and Social Sciences. Since its establishment, the department has supplied the national and regional labor markets well-qualified graduates who are academically and professionally prepared and equipped with the required skills and knowledge to meet the needs of these markets.

At present, the department offers a single major in business administration. Students wishing to major in this field should complete 126 credit hours. Of these, 18 are university requirements, 87 are department compulsory courses and 18 are electives.

Vision

Providing an outstanding academic curriculum and publishing quality research in the field. This will support the local society and regional markets by preparing students for professional life and/or graduate study in management.

Mission

Reinforcing high quality education to produce and prepare a competent workforce that has the required qualifications and necessary background needed in the field. Graduates will then be able to successfully serve the domestic and international markets. The department is committed to excellence in teaching and scientific research and to a continuous development of its academic staff.

Objectives

- Recruiting the best qualified academic staff who are specialized in different business management fields, and strengthening the capacity of the existing staff.
- Developing a mastery of the knowledge base of graduates of business management.
- Demonstrating skills in the local, regional and international markets.
- Developing the competency and skills of students in carrying out scientific research in business management.
- Developing the communication skills of graduates, including the use of English language in business.
- Building a positive attitude and perception in students for a better response to internal and external changes in the environment.
- Developing effective communication channels with society as well as with academic and business organizations/institutions

University Requirements (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
11000101	Islamic Culture	3	-----
11000102	Arabic Language	3	-----
11000103	University English I	3	
11000325	University English II	3	
11000105	Palestinian Studies	3	-----
11000117	Leadership and Communication Skills	1	-----
11000108	Community Service	1	-----
11000127	Introduction to Computer Science	1	-----

Department Requirements (102 credit hours)

a) Compulsory Courses (87 credits)

Course	Course title	Credit hours	Prerequisite
10211109	Business Math	3	-----
10801111	Principles of Microeconomics	3	-----
10801112	Principles of Macroeconomics	3	10801111
10801113	Business Statistics I	3	-----
10861111	Principles of Financial Accounting I	3	-----
10861121	Principles of Financial Accounting II	3	10861111
10861300	Cost Accounting (Managerial Approach)	3	10861121
10866111	Principles of Management I	3	-----
10866120	Principles of Management II	3	10866111
10866215	Human Resources Management	3	10866111
10866217	Principles of Management Information Systems	3	11000127
10866222	Scientific Research Methods	3	10801113
10866224	Materials Management	3	10866120
10866226	Business Communications	3	11000103
10866311	Organizational Behavior	3	10866120
10866313	Production and Operations Management	3	10221109
10866320	Strategic Management	3	10866120
10866324	International Business Management	3	10866226
10866328	Organizational Theories and Design	3	10866311
10866411	Operations Research	3	10221109
10866420	Field Training	3	Completion of 90 credits
10866424	Management Seminar	3	10866320
10866426	Managerial Skills	3	10866320
10871121	Principles of Finance	3	-----
10871213	Financial Management 1	3	10871121
10876111	Principles of Marketing	3	-----
10876122	Marketing Management	3	10876111
11032101	English in the Workplace	3	11000325, or 11000322

b) Program Elective Courses: 18 credit hours to be chosen from the following:

Course #	Course title	Credit hours	Prerequisite
10801226	Palestinian Economy	3	10801112
10806420	Crisis and Art of Negotiations	3	Completion of 90 credits
10866250	Entrepreneurship and Small Businesses	3	10866120
10866266	Modern Public Management	3	-----
10866270	Health Care Management	3	10866120
10866273	Knowledge Management	3	10866120
10866353	Total Quality Management	3	10866120
10866360	Human Resources Training and Development	3	10866120
10866365	Local Administration	3	10866266
10866467	E-Business	3	10866217
10866475	Performance Management and Compensation	3	10866215, or 10866120
10866450	Organizational Change and Development (OC&D)	3	10866328
10866477	Managerial Control	3	10866313
10866485	Office Management	3	10866217
10866490	Corporate Governance	3	10866120
10871412	Financial Institutions Management	3	10871121
10876318	Marketing Communications	3	10876111
10876318	Consumer Behavior	3	10876111
10871312	Risk and Insurance	3	10871121

Free Electives (6 credit hours)

Course #	Course title	Credit hours	Prerequisite
7303433	Pharmacology and Community	2	-
10311197	French Language	2	-
11000131	Geography of Palestine	2	-
11000142	Family System in Palestine	2	-
11000143	Principles of Islam	2	
11000144	Biography of the Prophet Mohammad PBUH	2	-
11201101	Introduction to Musicology	2	-
11201103	Palestinian Music Folklore	2	-

Course Descriptions

10866120 PRINCIPLES OF MANAGEMENT II

This course is designed to complement and broaden the student's knowledge of the essential principles and concepts of management. The student will be given the opportunity to learn about the concept of strategic management, human resource management, organizational behavior, motivation and other related concepts. All of this will help the student to learn the skills required to be a good leader and manager.

10866215 HUMAN RESOURCE MANAGEMENT

This course focuses on presenting and discussing various principles and concepts of human resources management. It stresses the policies, programs and methods that have been developed and implemented successfully in the field. This course includes the discussion of the various functional activities of human resource management such as planning, recruitment, selection, job analysis, performance appraisal, training and development, compensation, career planning and promotion, safety and health, and labor relations.

10866217 PRINCIPLES OF MANAGEMENT INFORMATION SYSTEMS

This course introduces the essentials of Management Information Systems (MIS), provides an overview of Information Systems (IS) and their applications in business organizations. It also highlights management of information resources in organizations and the use of Information Systems (IS). The technical issues are blended with managerial concepts to provide enough knowledge to enable the student to feel at ease when hearing or using some of the technical jargon.

10866222 SCIENTIFIC RESEARCH METHODS

This module aims at exploring the methodology of conducting scientific research from the earlier stages of formulating research questions, sampling, and research design to data collection and analysis and report writing. Research validity and reliability measurements are also addressed.

10866224 MATERIALS MANAGEMENT

The basic objective of purchasing and inventory management is to fulfill the basic management objectives and goals through control and coordination

and execution of the functions related to the flow from inside, through and outside the organization. The effectiveness of this task should start from product planning and continue to the final product. This course introduces the student to the functions of course management, including forecasting, planning, purchasing, quality assurance and inventory control.

10866226 BUSINESS COMMUNICATIONS

This course presents an overview of the nature, significance, elements/steps, forms, and barriers of communication in organizations. It discusses the effective messages and the ways of developing and writing effectively various kinds of business letters, such as letters of inquiry, reply, order, sales, etc., using the modern communication technological tools. Main types of oral communication are discussed, too

10866311 ORGANIZATIONAL BEHAVIOR

This course deals with human behavior in organizations. It aims at helping students develop analytical skills necessary for identifying, diagnosing and solving behavioral problems in the workplace. It provides a study of behavior at the individual level in terms of perception, personality, motivation, learning, creativity, values and attitudes. It also provides a study of behavior at the collective level in terms of group dynamics, conflict, leadership and communication. In addition, it includes a study of behavior at the organizational level in terms of organizational design, organizational development and organizational culture.

10866313 PRODUCTION AND OPERATIONS MANAGEMENT

This course covers the following topics: production and operations management, operations analysis and decision making, forecasting, strategies and plans for operations, capacity planning for manufacturing and service companies, facility location planning, layout planning, production and process design, just-in-time system, and job design, production operations standards, and work measurements.

10866320 STRATEGIC MANAGEMENT

This course provides students with an introduction to the concepts and basic skills which allow them to understand the operation of strategic management in the planning, implementation and evaluation stages.

10866324 INTERNATIONAL BUSINESS MANAGEMENT

This course analyzes the international business environment and discusses the strategies and operations of multinational firms, the international trade concepts, and the management of the various functional activities of the multinational firm

10866328 ORGANIZATIONAL THEORIES AND DESIGN

This course explains the varied approaches to the process of organizing, starting with classical theories, and ending with modern ones, as well as their

implications for the structure of organizations. It also aims at developing the students' skills in designing and structuring organizations and identifying related problems

10866411 OPERATIONS RESEARCH

This module emphasizes the understanding of the use of quantitative analysis in business domain for making better effective decisions. This module encompasses decision making theory, probability theory, linear programming, transportation and assignment.

10866420 FIELD TRAINING (COMPLETION OF 90 CREDITS)

This course allows students to practice the principles, concepts and functions of management in real life in a particular organization, with special emphasis on managerial activities and aspects of organizational operations.

10866424 MANAGEMENT SEMINAR

This course focuses on providing the students with specialized knowledge on selected management issues, including but not limited to globalization, knowledge society and economy, intellectual capital, knowledge management, learning organization and organizational learning, strategic thinking, corporate social responsibility, managerial ethics, crisis management, entrepreneurship, and other emerging trends/ issues in management.

10866426 MANAGERIAL SKILLS

This course focuses on particular managerial issues that were not covered in other courses of the program, e.g. management of meetings, time management, technical report writing, presentation skills and negotiating skills.

10866250 ENTREPRENEURSHIP AND SMALL BUSINESS

The course covers the followings: definition of small-business enterprise - its nature and importance; its characteristics; different approaches of studying it; services offered to support small-business enterprise; government policy towards it; setting a plan of action and its routines ; business incubators, their advantages and disadvantages; family small-business enterprise; and strategic planning for small-business enterprises

10866266 MODERN PUBLIC MANAGEMENT

This course is designed to give students the opportunity to understand the theoretical foundations of modern public management - including how the entrepreneurial spirit is transforming the public sector; partnerships with the private sector; transparency; privatization; result focused; and citizen focus.

10866270 HEALTH CARE MANAGEMENT

This course examines medical services systems and institutions, such as hospitals. It also looks at the characteristics of these medical institutions problems they face, their functions, administration and organization. Some modern issues, such as increasing costs, quality, competition and marketing

are emphasized.

10866273 KNOWLEDGE MANAGEMENT

This course is a thorough coverage of the latest theory and practice of Knowledge Management (KM), with an integrated interdisciplinary presentation that makes sense of the confusingly wide variety of computer science and business KM perspectives arising simultaneously from artificial intelligence, information systems, and organizational behavior. It solidly covers the “hard” technical components of computer tools and technology for managing knowledge, without losing sight of the “soft” management needs and challenges in leveraging knowledge effectively within an organization. It critically evaluates the nature, computer representation, access, and utilization of knowledge versus information within a human context, and essential preparation for managerial, technical, and systems workers alike in today’s modern knowledge-based economy.

10866353 TOTAL QUALITY MANAGEMENT

This course aims at introducing the philosophy of total quality management, its historical evolution and elements such as leadership, customer satisfaction, employee involvement, continuous process improvement, supplier partnership and performance measurement. The course also introduces the tools and techniques of total quality management.

10866360 HUMAN RESOURCE TRAINING AND DEVELOPMENT

This course aims to provide students with the necessary knowledge about the nature and importance of training and developing human resources. It also provides students with the skills necessary for identifying training and development needs; the design, management, implementation and evaluation of training programs; the study of new staff orientation; and the design of careers and promotion policies.

10866365 LOCAL ADMINISTRATION

This course focuses on the relationship of local administration with public administration, the objectives of local administration, decentralization, establishment of local councils, the relationship between central government and local councils, the role of local administration in development of employment and finance of local administration, and problems of local councils and reform methods.

10866450 ORGANIZATIONAL CHANGE AND DEVELOPMENT

This course seeks to increase students’ awareness of the necessity and importance of planned organizational change, in light of unrecorded transformations and environmental changes in all spheres. The course also aims to upgrade students’ skills in successfully managing organizational change and selecting proper change strategies that greatly contribute to outstanding

performance and excellence at the individual, group and organizational levels. Also, students will be fully aware that resistance to change is natural, and can have positive outcomes, if managed successfully.

10866467 E-BUSINESS

Topics covered in this course include basic fundamental concepts of electronic business and commerce, practical use of Internet for commercial use, and navigation of the Internet as well as design of web work and publication of web pages on the Internet. Other topics covered include e-retailing, e-stock trading, e-publishing and e-banking, problems surrounding the e-commerce including security, privacy, new business processes and cross border commerce.

10866475 PERFORMANCE MANAGEMENT AND COMPENSATION

This course focuses on the performance of individuals in an organization. It aims to train the students how to design and implement a system for performance management. The course also introduces various approaches to managing financial and non-financial compensations and benefits required to attract, retain and motivate competent recruits. It covers issues related to assessing jobs, designing and managing the structure of salaries, wages and incentives (financial and non-financial).

10866477 MANAGERIAL CONTROL

This module aims to introduce the importance of controlling the firm's functions - marketing, production, human resources, financing and other activities of the firm.

10866485 OFFICE MANAGEMENT

This course covers several topics: concept of administration offices and nature of management, administrative organization of the office and its importance, office design, physical environment and its impact on the office staff and reviewers, written communications, office automation, office models, and secretarial work in the modern office.

10866490 CORPORATE GOVERNANCE

This course deals with the concept of corporate governance. It explains the causes underlying the problems of control and direction in organizations. It also shows the control mechanisms that permit the exercise of a certain degree of supervision and control over managers.

ASSISTANT PROFESSORS

Name	Academic Rank	University of Graduation
Yousif Masou'd Al-Ghaniam	Assistant Professor	An-Neelain University Republic of Sudan, Sudan
Abdul Fattah A. Shamleh	Assistant Professor	University of Nagpur, India
Nadedr Al-Qaryouti	Instructor	Ain Shams University, Cairo, Egypt
Hussein M. A. Abed	Instructor	An –Najah National University, Nablus, Palestine
Rani M. Shahwan	Instructor	Maastricht School of Management, Maastricht, The Netherlands
Firas Hamdan	Instructor	University of Cyprus, Cyprus.
Abdallah Hassouna	Assistant Professor	Korea Maritime University, Korea.
Mohammad Najjar	Instructor	East Tennessee State University, United States.

{ Curriculum Plan for a B.A. Degree
in Economics }

Requirements	Credit hours
University requirements	18
Department compulsory courses	90
Department elective courses	18
Free courses	6
Total	132

Vision

The Department of Economics seeks to make every effort to enable its graduates meet the needs of the Palestinian and regional labor markets. The Department aims to educate highly-skilled economists who have the ability to effectively contribute and add value to the Palestinian economy by putting their theory and knowledge into practice.

Mission

The Department's aims to help, serve and develop the Palestinian economy by preparing well-qualified and knowledgeable students who are capable of thinking critically, providing solutions and looking forward to innovation and novelty, and have adept leadership skills and managerial proficiency.

Objectives

- Recruit high-quality human resources to the Department.
- Continuously improve and develop the curriculum through updating texts and teaching methods in the Department.
- Create a strong economic awareness of the national economy, as well as regional Arab and international economies.
- Prepare students to deal with economic developments effectively and professionally by putting theory into practice.
- Encourage research and connect students with the private and public economic institutions in the local environment.

Compulsory Courses: 90 CH.

Course #	Course title	Credits	Prerequisites
11101251	Business Law	3	
10221109	Business Mathematics	3	
10801111	Principles of Microeconomics I	3	
10801112	Principles of Macroeconomics II	3	10801111
10801113	Business Statistics I	3	10801113
10801211	Business Statistics II	3	
10861111	Principles of Financial Accounting I	3	
10861121	Principles of Financial Accounting II	3	10861111
10871121	Principles of Finance	3	
10866111	Principles of Management I	3	
10876111	Principles of Marketing	3	
10801213	Microeconomic Theory	3	10801111
10801220	Innovation and Information Economics	3	10801111
10801222	Macroeconomics Theory	3	10801112
10801224	Scientific Research Methods	3	10801112
10801226	Economics of Palestine	3	10801112
10801228	Money and Banking	3	10801111
10801315	Mathematical Economics	3	10221109
10801317	International Trade	3	10801112
10801319	Econometrics I	3	10801113
10801330	Islamic Economics	3	10801112
10801332	Public Finance	3	10801112
10801336	Economic Development	3	10801112
10801421	Labor Economics	3	10801213
10801423	Economic Feasibility Studies and Project Evaluation	3	10801112
10801438	Economics Seminar	3	10801224 10801112
10801440	Empirical Applications in Economics	3	10801319
10801442	Field Training	3	Student should end 90 hours
10806101	Principles of Political Science	3	
10861211	Corporate Accounting	3	10861121
10871213	Financial Management I	3	10871121
10861224	Intermediate Accounting I	3	10861211
10801250	History of Economic Thought	3	10801112
10801251	Service Economics	3	10801112
10801254	Agriculture Economics	3	10801112
10861300	Cost Accounting (Managerial Approach)	3	10861121
10801355	Political Economics	3	10801111 - 10806101
10801356	Industrial Economics	3	10801213
10801357	Israeli Economics	3	10801112
10801358	Arab World Economies	3	10801112
10801360	Contemporary Economic Issues	3	10801112
10871410	International Financial Management	3	10871213
10871412	Financial Institutions Management	3	10871121
10801464	Economic Growth	3	10801112
10801465	Economy of Cooperatives	3	10801112
10801466	National Income Accounts	3	10801112
10801467	Econometrics II	3	10801319
10801468	Urban Economics	3	10801112
10801469	Environment Economics	3	10801112
10871225	Stock Exchanges	3	10871121

Course descriptions

10801113 BUSINESS STATISTICS I

This course gives the business students a conceptual introduction to the field of statistics and its business applications. Both business applications of data analysis and business statistical methodology are included. By the end of the course, the students will be introduced to the principles of business statistics, data classifications and graphical displays, measures of central tendency, measures of dispersion, some of the statistical distributions, probability, hypothesis testing, correlations and regression analysis.

10801211 BUSINESS STATISTICS II

This course gives the business students an introduction to inferential statistics, including estimations techniques, hypothesis testing and analysis of variance. It also introduces the business students to correlation and regression techniques with applications to business data.

10801111 PRINCIPLES OF MICROECONOMICS

This course provides an introduction to microeconomics. Students are familiarized with the basic tools used to solve household and firm problems. Also, they are familiarized with microeconomic concepts such as demand, supply, elasticity, production, profit, cost, monopoly and perfect competition. In addition, the course focuses on the relationship between the firm's costs and output. This course concludes with a discussion of the price determination through supply and demand interactions and differentiates between monopoly and perfect competition frameworks.

10801112 PRINCIPLES OF MACROECONOMICS

This course is designed to introduce students to classic macroeconomic issues such as growth, inflation, unemployment, interest rates, exchange rates, technological progress, and budget deficits. The course will provide a unified framework to address these issues and to study the impact of different policies, such as monetary and fiscal policies, on the aggregate behavior of individuals. These analytical tools will be used to understand the recent experiences of the United States and other countries and to address how current policy initiatives affect their macroeconomic performance.

10801226 ECONOMICS OF PALESTINE

This course reviews the developments and structural changes in the Palestinian economy that have occurred in various economic sectors and indicators at various stages, and in particular since beginning of the colonial occupation and Israeli Zionist settlement policy. The course focuses mainly on developments and economic transformations witnessed by the Palestinian economy since the establishment of the Palestinian National Authority in 1994 and gives a thorough view and analysis of various economic indicators and economic performance and policies pursued by the successive Palestinian governments, and their impact on the process of development to strengthen and build an economic basis for the state of law and institutions.

10801224 SCIENTIFIC RESEARCH METHOD

The aim of this course is to provide the students in their study with the research skills and methods. These include research design, data collection techniques, analysis and presentation of data (quantitatively and qualitatively), and finally the writing of the research report.

10801213 MICROECONOMIC THEORY

The main aim of this course is to provide a further understanding of microeconomics. This course covers the following topics: the basic theory of consumer behavior; production and costs; partial equilibrium analysis of pricing in competitive and monopolistic markets; general equilibrium; welfare; and externalities. The skills developed in this course will help students make informed, responsible and critically discriminating judgments about current economic and social policy issues.

10801220 INNOVATION AND INFORMATION ECONOMICS

This course gives an overview of innovation economics, including studying the most prominent theories and applications in this field in the service or industrial sector. It also explains the relationship between innovation and economic performance and growth, and the role of innovation in the restructuring of the production process inside the firms where the knowledge and technologies become very crucial for keeping a competitive advantage.

10801222 MACROECONOMICS THEORY

In this course, students will build on and apply what they have learned in the introductory macroeconomics course (Principles of Macroeconomics). They will use the concepts of output, unemployment, inflation, consumption, and investment to study the dynamics of an economy at a more advanced level. As the course progresses, they will gain a better appreciation of how policy shifts and changes in one sector impact the rest of the macroeconomic scene (whether the impacts are intended or unintended). They will also examine the causes of inflation and depression, and discuss various approaches to

responding to them. By the end of this course, students should be able to think critically about the economy and develop their own unique perspective on various issues.

Macroeconomics attempts to explain the role of government and the scope of total production in a national economy. Economists use abstract quantitative tools to develop concepts about how markets and systems work; basic assumptions are made and then relaxed to create more flexible and realistic models. This course will use a variety of mathematical techniques to describe how the macroeconomic changes over time.

10801228 MONEY AND BANKING

This course focuses on the economics of money, banking and financial markets. The course aims to provide the student with an introduction to the role of money, financial markets, financial institutions and monetary policy in the economy, thus providing a solid foundation for graduate study or employment in the financial services industry.

There are three main components in the course. First, the role of financial markets in the economy will be considered with a particular emphasis on bond markets and interest rate determination. The course will then cover the main aspects of banks and other financial institutions before turning to an investigation of the role of money, central banking and monetary policy.

10801250 HISTORY OF ECONOMIC THOUGHT

This course surveys the main schools in the history of the development of economic thought, beginning with the pre-Classical school, “classical school” and the works of Smith, Ricardo, J.S. Mill, Thornton, Say, and others. It then reviews challenges to the classical school by Marx, Marginalists, and subsequent key figures like Marshall, Walras and the “Neoclassicalists”. Economic thoughts associated with the early 20th century transitionalists are briefly addressed, including those of economists such as Wicksell, Schumpeter, Fisher, and others. Students study Keynes’ General Theory, focusing in particular on Keynes in areas of investment, interest rate theory and money demand post-1945 revisions of Keynes and Neoclassical economics in the form of early and late IS/LM analysis; and its main challenges by Friedman (Monetarism) Lucas (rational expectations), real business cycle theorists, and post-Keynesian thought (UK and US). The course concludes with a consideration of “efficient markets” theory and the views of its critics such as Tobin, Hyman Minsky, Shiller, and others

10801251 SERVICE ECONOMICS

This course aims to give an overview about service economics, which is becoming very important and responsible for economic growth and employment in most countries. It studies the definition and nature of service

economics, in comparison with industrial economics, the most prominent theories and the relationship between service economics and economic performance.

10801254 AGRICULTURE ECONOMICS

This course covers several topics: the nature and features of the agricultural sector, demand on the agricultural yields, economies of agricultural production; markets for agricultural produce and organization of these markets; agricultural policies; and agricultural lending and financing.

10801315 MATHEMATICAL ECONOMICS

This course begins with an explanation of mathematical economics, its origin and the importance of using the mathematical method in analysing economic laws. The course then moves to identify mathematical tools that are employed in economics, particularly in the Consumer Behavior Theory, in the business or firm, for general balances and economic growth and for the Input-Output Model.

10801317 INTERNATIONAL TRADE

The aim of this course is to provide students with an understanding of the principles and

applications of international trade, so that students will be prepared to face the future

complexities of the world economy. The course will cover the law of absolute advantage, comparative advantage, the gains from trade, the Heckscher-Ohlin theory, the standard and alternative trade theories, international factor movements, and trade policies such as tariff and non-tariff barriers. The political economy and controversies in trade theory are also discussed. Trade issues in developing countries are highlighted.

10801319 ECONOMETRICS I

This course will give students a conceptual introduction to the field of statistics and its many applications. Both applications of data analysis and statistical methodology are included. At the end of the course the students are expected to become familiar with the principles of statistics, data classifications and graphical displays, measures of central tendency, measures of dispersion, some of the statistical distributions, probability, testing of hypothesis, correlations and regression analysis.

10801330 ISLAMIC ECONOMICS

This course introduces students to the basic premise that the study of Islamic economics proceeds from the Islamic worldview and has to be developed according to a methodology that is founded upon this worldview. Therefore, the 'foundations' that need elaboration are the Islamic worldview, Islamic

economic methodology and the features of an Islamic economic system. Since economics deals with the production, consumption and distribution activities, these areas will be addressed in this course, in addition to other more prominent areas of contemporary Islamic economics such as the prohibition of riba (usury).

10801332 PUBLIC FINANCE

This course focuses on the application of economic theory on the analysis of the issues pertaining to public expenditures and taxation. The first part of the course discusses theories on public expenditures, such as theories on public goods and social cost benefit analysis. The second part of the course explores the principles and theories of taxation.

The course is designed to secure a better understanding of the theory of public finance and its practical application. Upon successful completion of this course, students will have acquired a grasp of the main recent issues and theories in public finance. In particular, they will be able to critically assess the role of government and public policies. In addition, the course aims to strengthen analytical capacities and skills of students in the areas of public finance. Finally, the course will also develop students' cooperation skills, as there will be opportunities for student in class and outside of class to work with others.

10801355 POLITICAL ECONOMICS

This course deals with the science of political economy; and social and economic relations that arise between people through the process of production and operation of the economic activity. It also focuses on the impact of economic laws through different economic systems; political and social variations in the light of globalization and the knowledge-based society, linking the relationship between the economy and politics and mutual influences between them.

10801336 ECONOMIC DEVELOPMENT

This course is an attempt to explain the essence of 'economic underdevelopment' - its origin and its dimensions. The course also highlights the importance of economic planning as a key method for development. Students will learn about development theories, strategies and reasons for expansion and for the employment of economic planning in different economic systems. Students are also introduced to types and tools of economic planning, with emphasis on the planning methods used in developing countries.

10801356 INDUSTRIAL ECONOMICS

Industrial organizations apply microeconomic theory and econometric analysis to study firms and markets. Both theoretical and empirical work is considered, and implications for business strategy and public policy are discussed.

The theory deals with standard models for oligopoly and monopoly markets, product differentiation, cartels, dominant firms, price discrimination, entry and exit, horizontal and vertical integration, and innovation. The course also covers certain types of regulations.

10801357 ISRAELI ECONOMICS

This course exposes the students to the major issues facing the Israeli economy through an examination of background factors and the historical development of the economy. This is in addition to analysis and monitoring of recent developments in the Israeli economy. The course concludes with an understanding of the characteristics and main data of the economy, using economic theory to analyze economic phenomena in the Israeli economy.

10801358 ARAB WORLD ECONOMICS

This course aims at introducing students to the factors that have influenced the shaping of the economies of Arab Countries. It traces the developments of these economies, with emphasis placed on the Arab countries' efforts to solve the problems of agricultural issues and

10801360 CONTEMPORARY ECONOMIC ISSUES

The purpose of this course is to deepen student's knowledge of pressing contemporary economic issues, particularly those having global influence and those influencing Arab and local environments. This course focuses on team work, presentation and case studies.

10801421 LABOUR ECONOMICS

This course provides facts and theories of labor economics. Students are introduced to the tools of the labor market, including labor supply and demand and the factors that affect the labor market. Furthermore, it focuses on labor theory and the interaction between supply and demand, which is necessary to understand labor force participation and unemployment. The course caps with a look at combination of the investment in human capital, the determination of wages and the differences in wages, mobility and the effect of unions.

10801423 ECONOMIC FEASIBILITY STUDIES AND PROJECT EVALUATION

The course introduces students to entrepreneurship, especially for small enterprises. The discussions begin with idea creation, feasibility analysis (market feasibility, market feasibility, financial/economic feasibility, organizational/managerial feasibility), the business plan, organization, and business development. The aims of this course are to introduce students to entrepreneurship concepts, to drill students on developing and analyzing ideas, arranging and drafting plans, organizing and developing business. The course also provides an opportunity for students to master the skills of conducting research in some small businesses.

This course applies economic theory in evaluating the impact of investment on social welfare. Project evaluation entails studying the economic and financial aspects of a project. This course teaches the technical and philosophical skills of project evaluation and the way of applying these to development projects. The discussion begins by considering the objectives and the organization of investment appraisal. Relevant financial analysis, to be used for the development of performed cash flow statements and application of various investment criteria, are NPV, IRR, payback period, and cost-benefit ratio. The course objectives are to introduce the impacts of a project toward social welfare, to apply economic technical analysis in providing project appraisal information, and to study various cases of development projects.

10801438 ECONOMIC SEMINAR

The main objective of this course is to improve the ability of the students to research and discuss different issues in economics. All students should produce a well-researched paper about one of the economic topics and then discuss it in front of a department committee.

10801440 EMPIRICAL IMPLICATIONS IN ECONOMICS

This course includes empirical implications in economics using computer programs, mainly for analysis of economic data like SAS, E-views and SPSS. This includes statistical analysis, correlation, hypothesis testing, and regression analysis. This course helps the student to get more understanding of the different economic issues at micro and macro levels and investigate the economic theories they have studied in their courses.

10801442 FIELD TRAINING

This course is offered to students who have completed at least 90 credit hours. This course gives the students the opportunity to receive intensive training in a local firm in order to enrich his/her practical experience and be able to start his job after graduation. It also strengthens students' abilities to apply their study in real business situations.

10801464 ECONOMIC GROWTH

This course is an attempt to analyse the reasons behind the emergence and development of economic growth theories and their theoretical foundations. Emphasis is placed on the study of Marxist, Keynesian and Neoclassic growth theories against the background of the outstanding economic ideological contributions of these schools.

10801465 ECONOMY OF COOPERATIVES

This course examines the origin, development and philosophy of cooperatives as a form of production organisation and economic activity. The course focuses on identification of the types of economic cooperatives in the West Bank and the Gaza Strip.

10801466 NATIONAL INCOME ACCOUNTS

This course is a study of income distribution theory, both in terms of the functional and the personal factors. The course also explains theories pertinent to the ways of measuring the distribution of personal income and the factors behind the differences in its distribution. The course ends with an emphasis on the importance of national income distribution and its role in achieving both economic growth and social justice

10801467 ECONOMETRICS II

This course builds on what students have taken in Econometrics I. It will introduce more advanced topics in econometrics like the analysis of time series and panel data, and the most important problems that face us when analyzing such data. This course also teaches students how to analyze models in the case of qualitative data, like the logit model.

10801468 URBAN ECONOMICS

This course covers several topics: localization of population, development of urban locations, the location structure of urban regions, uses of land, organizational structure, urban regions, changes in urban systems, and some problems in urban economics.

10801469 ENVIRONMENT ECONOMICS

This course introduces the student to environmental issues and problems and the economic impacts of environment policies and laws. It also introduces the most prominent policies that most countries adopt to deal with environment problems.

FACULTY MEMBERS:

Faculty Member	Rank	University of Graduation
Prof. Abdulfattah Abu Shukur	Professor	Philipps-Universität Mrburg, Germany
Dr. Mahmoud Abu Alroub	Associate Professor	Berlin School of Economics and Law, Germany
Dr. Rabeh Morrar	Assistant Professor	Lille University, France
Dr. Haythem Owida	Assistant Professor	Cairo University, Egypt
Dr. Aas Attrash	Assistant Professor	The Hebrew University of Jerusalem, Jerusalem
Yusr Al-Azhari	Instructor	Yarmouk University, Jordan
Baker Ishtayeh	Instructor	An-Najah National University, Palestine
Ma'ali Sa'oudi	Instructor	Catholic University of Leuven, Belgium
Shaker Khaleel	Instructor	Birzeit University, Palestine
Nael Adel Mousa	Instructor	University of Hordan, Jordan

{ Department of Finance and Banking }

The Vision:

This department seeks to be a pioneer department in terms of quality of education, distinction in scientific research, and activity in serving the community and providing methods for its growth.

The Message:

Is to prepare students to excel and possess the knowledge and the skills in the field of finance and banking, so they are able to meet the needs of the profession and compete with graduates from other universities .This preparation includes constant development for the faculty members, the curriculum and the methods of teaching it, for students to finally arrive to excellence and leadership in the public and the private sectors.

The objectives:

1. To meet the needs of the economic sectors, regarding finance and banking.
2. To prepare students for work or higher studies.
3. To develop the students thinking, and research skills.
4. To develop the students' ability to understand the financial and economic subjects and problems through theory and application.
5. To provide the opportunity for students to get to know the sector of banks and other financial institutions.
6. To develop the students' ability to use computers and information technology in making financial decisions.
7. To develop the students' communication skills.
8. To train students on group work and reinforce its spirit.
9. To help students develop love of constant learning and research.
10. To reinforce graduates self-confidence and their appreciation of education in the society.

The ILOs

1. The outcomes of knowledge and comprehension.
 - **The outcomes of general knowledge**, which are the outcomes students of this department acquire through studying the university requirement courses such as Islamic culture, Arabic language, English language...
 - **The outcomes of related knowledge**, which is the knowledge students acquire through the elective and compulsory courses which the department of finance and banking has to offer , such as 'principles of accounting ' microeconomics' ,macro-economics' , 'statistics of business' ...etc.

- **Outcomes of specialized knowledge :** which is the knowledge students get in the field of their specialization (namely finance and banking)which represents the foundations of this field and is acquired through the elective and compulsory courses of the department which aim at teaching students the bases and principles of finance and banking , such as principles of finance , financial administration ,expenses accounting ...

2. The Applied skills :

- **Analytical skills outcomes:** which are the outcomes acquired by analyzing financial statements for companies and corporations in the courses of “financial management “and “operation research” which the department of finance and banking offers.
- **Applied skills outcomes:** which are the outcomes acquired through practicing and applying the theoretical administrative knowledge and concepts which students have learned from books and references, in the practice course of “Field training “ which consists of 200 hours of practice.
- **Research skills outcomes :** which are the skills students acquire through the writing of reports and conducting scientific research using different sources (the traditional ones such as books and references or the electronic ones such as the internet) in the courses which they study in the department of business administration such as :”research methodology “ which teaches students the foundations and methods of scientific research , and which is preferred to be taken at the beginning of the major , and “statistics “ which teaches students the bases of testing hypotheses through statistical programs and testing methods.
- **Mental skills outcomes:** which are the skills acquired through organized, sequential thinking that comes to logical results and conclusions in a way that motivates the students to deeply think about the science of administration; its foundation, philosophy and theories. These skills are taught in courses such as “Seminar’ and “portfolio theory”.

The outcomes of ethical and professional values: which are the outcomes students acquire their knowledge of the ethics, behaviors, and values of the profession which they should have after graduation through the practice of their profession. These outcomes are acquired through courses that deal with the subject either partly or completely, such as “financial behavior” and “international finance”.

Type of course	Hours
University requirements	18
Department requirements	Compulsory 90 Elective 15
Free courses	6
Total	129

Course #	Course title	Credits	Prerequisite
10871111	Research Methodology	3	10871121
10871121	Principles of Finance	3	-
10861121	Principles of Financial Accounting II	3	10861111
10871334	Financial Information Systems	3	10871320
10871225	Financial Markets	3	10871121
10871213	Financial Management I	3	10871121
10871310	Financial Analysis	3	10871121
10871311	Banks Management	3	10871213
10871320	Investment Analysis and Management	3	10871213
10871321	Islamic Banks	3	10871121
10871312	Insurance and Risk	3	10871121
10871411	Financial Management II	3	10871213
10871410	International Financial Management	3	10871411
10871421	Seminar	3	10871420
10861214	Accounting Financial Institutions	3	10861121
10871420	Portfolio Management	3	10871411
10871439	Contemporary Issues in Finance	3	10861121
10876224	Banking Services Marketing	3	10876111
10801319	Econometrics 1	3	10801113
10861212	Cost Accounting	3	10861121
10871415	Practical Training	3	Completion of 90 credits
11101251	Commercial Law	3	
10866111	Principles in Management 1	3	
10801111	Microeconomics	3	
10861111	Principles of Financial Accounting 1	3	
10876111	Principles of Marketing	3	
10801113	Statistics in Business 1	3	
10221109	Business Mathematics	3	
10871412	Financial Institution Management	3	10871121
11032101	English in the workplace	3	

Course #	Course title	Credits	Prerequisite
10801211	Statistics in Business II	3	10801113
10871256	Computer-based Financial Application	3	10871213
10871376	Personal Finance	3	10871121
10871464	Bank Credit Management	3	10871311
10871379	Quantitative Finance	3	10871225
10871423	Project Evaluation and Feasibility Study	3	10801112
10871388	International Banking Operations	3	10871311
10866411	Operations Research	3	10221109
10871473	Planning and Financial Control	3	10871310
10801213	Microeconomic Theory	3	10801111
10871365	Financial Mathematics	3	10871121
10861311	Managerial Accounting	3	10861212
10871261	Real Estate Financing	3	10871121
10871465	Introduction to Behavioral Finance	3	10871421
10871490	Derivatives Markets	3	10871225
10871489	Public Budgeting	3	10871412
10801112	Macroeconomics	3	10801111
10866111	Human Resources Management	3	10866111

Course descriptions:

10871121 PRINCIPLES OF FINANCE

This course aims at introducing students to the main concepts of finance. Topics covered include the time value of money, the relationship between return and risk, companies' appropriate financing foundations, measurement of risk, the cost of capital and optimum capital structure.

10871213 FINANCIAL MANAGEMENT I

This course is a study of the role of financial management in projects, the functions of the financial department, profitability planning, financial planning, financial forecasts and analysis, the management of working capital and the valuation of assets. The course also covers the management of short-term and long-term financial sources.

10871111 RESEARCH METHODOLOGY

The aim of this course is to help students to understand the methods and tools employed in research writing in the administrative sciences and in the field of finance in particular. Students will learn the basics of research methods: hypothesis development, data collection, sampling, questionnaire design, and data analysis. By the end of the course, students should be able to write term papers and reports.

10871225 FINANCIAL MARKETS

In this course, students are introduced to the concept of financial markets and the efficient market hypothesis. Students will also learn about types, instruments and pillars of securities markets including Palestine Stock Exchange. Furthermore, the course highlights monetary markets and their role in the economy and the financial instruments used.

10871310 FINANCIAL ANALYSIS

This course is a study of the different financial statement items and the methods used in financial analysis as a basis for objective decisions. The course also looks at the relationships among the different items of these statements and compares them with historical criteria and specific patterns in order to judge the efficiency of the project management and its long and short financial positions.

10871311 BANKS MANAGEMENT

This course begins with an introduction to the banking system: types of banks, commercial bank operations, money creation, the sources of financing commercial banks, aspects of employing different direct credit facilities and an analysis of commercial bank budgets. The course then moves to the internal organization of commercial banks, the central bank and its relationship with the commercial banks and other specialized credit institutions. The course concludes with a comparison between commercial banks and Islamic banks.

10871320 INVESTMENT ANALYSIS AND MANAGEMENT

This course introduces the concept of 'investment,' financial investment decisions, and risks and returns. Emphasis will be placed on the methods of valuation, asset pricing models and the assessment of securities risks.

10871321 ISLAMIC BANKS

This course discusses money in Islam, types of banks and the history, definition, philosophy and objectives of Islamic banks. Furthermore, the course focuses on financing and investment contracts and methods, like *mudaraba*, *murabaha*, sale and lease-back, Islamic *sukuk*, Islamic banks' sources of funds, Islamic bank services, financial statements and the control of Islamic banks.

10871312 INSURANCE AND RISK

This course introduces students to the meaning of 'risk,' its types, insurance functions, the types of insurance, insurance premiums, reserves, the administrative organization of insurance firms, insurance marketing, insurance policy procedures, the settlement of claims and compensation, the control and supervision of insurance facilities and reinsurance. The course also explores the impact of insurance on the country's economy, its relationship with trade and industry and its role in investment and finance, as well as investment opportunities in insurance.

10871411 FINANCIAL MANAGEMENT II

This course is a study of several topics related to advanced financial management such as the theories of dividend policies, the cost of capital, capital structure of the company, capital budgeting and business valuation.

10871410 INTERNATIONAL FINANCIAL MANAGEMENT

This course focuses on the study of international financial management within the framework of the globalization of the economy. Other topics raised in the course include the impact of foreign funding on economic developments, rates of exchanges and the relationship with macroeconomic variables, and balance of payments in particular. In addition, the course focuses on international enterprises and the means of funding. The course briefly examines how international companies manage their assets and liabilities in the short and long terms.

10871421 SEMINAR

This course aims at testing the student's ability to research financial problems. In coordination with a supervisor, students should choose a topic of their own interest in order to conduct a study on it. In writing this project, students should submit a well-documented research paper. This paper should include a research problem, literature review, a hypothesis, methodology, results and discussion and implications. The student, upon completion of the project, should discuss it with his/her supervisor and/or examiners for final approval.

10871420 PORTFOLIO MANAGEMENT

This course begins with the definition of investment portfolio, the concept of portfolio optimization, and the way of building portfolio optimization and reducing risk through diversification. Then it moves to the use of beta to predict the risk of the investment portfolio, determine the required rate of return when using CAPAM, and evaluate the performance of the portfolio manager.

10861214 ACCOUNTING FINANCIAL INSTITUTION

The first part of the course deals with accounting in insurance companies. This study includes the statements of insurance institutions in terms of bookkeeping, records and processing of insurance operations. The course is also a study of investments and how they are dealt with in bookkeeping. It also looks at the 'how-tos' of preparing final financial statements for insurance companies. The second part of the course focuses on bank accounting and commercial banks in particular. Students will get a general but comprehensive idea about the importance of banks and their role in the development of the country's economy. The second part also examines the activities/operations of the banks' different departments, and the current accounts department and the foreign transactions department (currency transfer and credits) in particular. The course ends with the how-to's of preparing financial statements for banks and the main elements forming these statements

10871439 RECENT TOPICS IN FINANCE

This course discusses recent theoretical and empirical topics in finance. Topics to be discussed include capital structure, merger and acquisition, pricing models, IPO markets, market microstructure, etc. Typically, this course is conducted using a participatory approach, where discussions of recent journal articles and case studies will be the main medium of learning.

10871376 PERSONAL FINANCE

This course discusses the issues related to personal finance from the view point of both the individual and the lending bank. Factors related to success or failure of personal loans and the objectives of personal finance are among the topics to be discussed.

10871379 QUANTITATIVE FINANCE

This course introduces students to quantitative methods in finance. Among the topics to be discussed are time series regression analysis and panel data econometrics.

10871465 INTRODUCTION TO BEHAVIORAL FINANCE

Students in this course are taught about investment decisions under conditions that deviate from rationality assumptions. The implications of relaxing this assumption on the pricing of assets and portfolio management will be discussed.

10871490 DERIVATIVES MARKETS

This course dwells on derivatives markets, the mechanisms of trading and pricing of derivatives.

10876224 BANK-SERVICES MARKETING

Students, in this course, learn about the principles of banking services marketing, analyzing banking services, purchasing behavior and its determinants, consumer behavior, the marketing environment of the banking services, the development and innovation of banking services, pricing of banking services, and clients' patterns and the ways of dealing with them.

10801319 ECONOMETRICS I

This course aims to provide students with an idea about the principles and ways followed in economics in order to quantitatively check the extent to which economic models and theories match the present situation. The course presents the basics of the regression models, analysis of variance, hypothesis testing, the general linear model estimators and their properties, ordinary least squares and confidence intervals. Finally, the course looks at economic forecasting using the regression models

10861212 COST ACCOUNTING

Students in this course will learn about the concepts and analytical procedures related to the generation of cost data for management planning and control. The course will specifically deal with the accounting systems used in industrial companies. In this regard, the course will analyze elements of costs and their classifications. The course will also discuss standard costs and their importance in controlling cost elements. Finally, the course examines some mathematical models, such as linear programming and probability theory, used to help management in taking its economic decisions.

10866111 PRINCIPLES IN MANAGEMENT I

The aim of this course is to develop the student's concepts of 'management,' its principles, methods, theories, schools, fields, problems and elements. It also aims at providing students with information about its history and philosophy,

its processes, planning, organization and evaluation. The course is also designed to keep the student abreast of recent developments in management where students will diagnose some management problems and take rational decisions.

110801111 MICROECONOMICS

This course aims at examining the functioning of individual industries and the behavior of individual decision-making units. These units are business firms and households.

10861111 PRINCIPLES OF FINANCIAL ACCOUNTING 1

The goal of this course is to acquaint students with the basic principles and concepts which represent the framework of accounting. The course will specifically discuss the meaning of 'accounting,' its historical development, its importance in taking economic decisions and its basic theories on which financial principles and procedures and final financial operations are based. All this is for the purpose of serving the management of the company and other parties involved in making economic decisions related to the company. This is based on the assumption of the accuracy and the validity of financial operations during the year.

10876111 PRINCIPLES OF MARKETING

This course is an analysis of the elements of marketing mix: product pricing, promotion and distribution decisions. The course aims at providing students with the economic and marketing analytical skills required for marketing environmental elements and to make appropriate decisions. It also aims at arming students with the marketing skills of non-profit services, material distribution and customer services.

10871256 COMPUTER-BASED FINANCIAL APPLICATION

The course is an application of the students' theoretical study of computers. The focus will be on qualitative materials, analytical developments in security selection, portfolio performance evaluation, investment analysis and time-value of money. For these aspects to be analyzed, the course will utilize various computer programs, and Excel in particular.

10871464 BANK CREDIT MANAGEMENT

In this course, students learn about the structure of a model banking system, the pricing of banking loans and their relationship with economic circumstances and variables, credit instruments, credit considerations, credit types and risk management models.

10871423 PROJECT EVALUATION AND FEASIBILITY STUDIES

In this course, students learn how to use scientific methods and tools in data collection for projects. In addition, they learn how to study and analyze

these data to arrive at results that may determine the feasibility of the project from technical, marketing, financial and social aspects. Students also learn about the foundations of financial analysis, the concept of 'cash flow,' the techniques used in evaluating investment projects and in choosing the best project, whilst taking into consideration sensitivity analysis.

10871388 INTERNATIONAL BANKING OPERATIONS

This course focuses on the study of international financing institutions and the world investment structure within the framework of the globalized economy, and the effect of that on the performance of the national economy, which depends on the scope of the external funding available. Other topics raised in the course include the impact of foreign funding on economic developments, rates of exchange and the relationship with macroeconomic variables, and the balance of payments in particular. In addition, the course focuses on local economic enterprises and the means of funding internationally.

10871365 MATHEMATICAL FINANCE

This course aims at introducing students to the concepts of simple and compound interest, installment loans, risk management models, pricing models and mathematical models of derivatives.

FACULTY MEMBERS:

Name	Academic Rank	University of Graduation
Prof. Tariq Hajjaj	Full professor	Berlin, Germany
Dr. Mufeed Daher	Assistant professor	Al-Neelain University, Sudan
Dr. Islam Abdeljawad	Assistant professor	National Malaysian University, Malaysia
Dr. Moath Asmar	Assistant professor	Malaysia school of Science, Malaysia
Mr. Khaled Zeidan	Lecturer	An-Najah University, Palestine
Mr. Fadi Samoor	Lecturer	University of Texas Arlington, USA
Mr. Bassam Al-Shouli	Lecturer	Tarleton University, USA
Ms. Hala Atirah	Lecturer	Lancaster /UK
Mr. Ra'fat Jalad	Lecturer	Belgium

{ Marketing Department }

History and background

Consistent with the mission of An-Najah National University and the Faculty of Economics and Administrative Sciences in coping with the requirements of the new era and contributing to the building of a promising generation of Palestinian people, and given the growing demand for graduates of this Field of Specialty of Business, the Marketing Department was established in the Faculty of Economics and Administrative Sciences in 1999-2000. The An-Najah Marketing Department became the first Marketing Department on this level amongst the Palestinian Universities. It became a separate Department in the first semester of the academic year 2003-2004. The Marketing Department currently has seven faculty members of PhD's and master's who are specialized in marketing. It is considered to be the Third Department in the Faculty in terms of its total number of students.

Vision

The vision that the Marketing Department holds is that it will be a real contributor in providing the Palestinian and Regional Economy with academically qualified graduates and will be able to shoulder the responsibilities of decision-making and formulating a Marketing Strategy. This vision requires the Department to continue developing its teaching and attracting the best academic qualifications, updating teaching methods and making full use of information technology resources.

Mission

In consistent with the mission of An-Najah National University, the Marketing Department focuses on three key areas: education, research and community service. The mission of the Marketing Department reveals these areas:

- To provide students with an outstanding education at the undergraduate level and to assist students in acquiring the skills and experience that qualifies them for practical life and for successfully completing their higher studies.
- To provide graduate students with an opportunity to excel in research which is related to problems found in the Palestinian reality.
- To encourage students and Faculty Members in the Marketing Department to contribute to the activities and to the service of the Palestinian society.

Objectives

The Marketing Department aims to achieve the following objectives:

- Theoretically and practically qualifying students in the field of Marketing and providing students with the skills necessary in line with the Philosophy of Modern Marketing and in line with the concepts of marketing organizations. For this to be achieved, students will be provided with thorough knowledge in the areas of consumer behavior, product management, the management of distribution, pricing, promotion, marketing research, planning and control in marketing.
- Training students to master the preparation of various marketing plans and their implementation and control.
- Developing the skills and abilities of students in the stages of planning, implementation and control of sales operations.
- Enriching the student's knowledge of the local market and how to provide the most appropriate marketing mix.
- Enabling students to develop effective communication plans that include advertising campaigns, public relations and others.
- Developing the skills of scientific research and its applications in the field of Marketing.
- Developing students' computer skills.
- Qualifying marketing students to devote more marketing opportunities in the fields of teaching in Commerce Schools, in the management of Public Relations, in the management of research and in planning and management in various ministries and non-ministerial government institutions.

Program Vision:-

In accordance with of the university vision the program vision can be summarized in the following:-

“Looking for to contribute in the Palestinian and regional economy by providing distinctive qualifications”.

Program mission:-

In accordance with the university mission the program mission composed of three areas to concentrating on: Education, Research, and Social contributions. So, program mission clearly advocate the following:-

Program objectives:-

As a means to achieve the vision, the program tries to accomplish the following objectives:-

Program learning Outcomes:-

First:- Knowledge and understanding outcomes:-

1. General knowledge outcomes

Such knowledge's can be provided by the core and selective courses the students intended to learn. Such courses like: Islamic course, Arab language, English language, and computer courses.

2. Related General knowledge outcomes:

Such a knowledge's can be provided by compulsory and selective program courses, such as

3. Field knowledge outcomes:

The program offer several types of marketing courses (compulsory, selective) consider to a base courses for upgrading studies for the future. Such as marketing management, management, Global marketing product's management, marketing research, sales management, and consumer behavior.

Second: - Experiential outcomes:

1. Analyzing skills outcomes, such as skills offered by corporate finance, operation research, and marketing communication courses.

2. Applied skills outcomes: Such a skill offered by field training course (200hrs, training) and graduation research course.

Research skills outcomes:

The outcomes acquired by the student through teaching how to write reports and scientific research from various sources.

Traditional sources such as books, references and periodicals. Electronic sources such as the internet and filed resources such as questionnaires and interviews.

The student a queries that outcomes through the course a marketing students usually study such as: Research methodology which teaches the student the foundations and methods of scientific research this course is offered to the students at the beginning of acceptance to major in marketing and the course named statistics in business I which teaches students hypothesis testing and tactics besides the graduation project course.

Mental skills outcomes:-

The thinking skills acquired by the student through systematic thinking based on the sequence of steps in thinking to reach logical conclusions and provisions and to motivate students to think about the philosophy and theories of marketing and its origins.

Those outcomes are acquired through the different courses offered by the marketing department such as: contemporary marketing issues and a course of consumer behavior.

Professional and Ethical values outcomes:

The outcomes acquired by the student, through their knowledge of the values ethics and behavior of the profession which they must display after their Thais graduation and through the exercise of the profession in the labor market and for the advancement of the profession.

Those outcomes are acquired through courses exposed to the either students then fully of partially such as buyer behavior and the course contemporary marketing issues where the contents of this course is marketing ethics and social responsibility.

Requirements	Credit Hours
University Requirements	18
Program Elective Requirements	90
Program Selective Requirements	15
Program Free Courses	6
Total Requirements For graduation	129

University Requirements:

Course No.	Course Title	Credit Hours	Prerequisites
11000101	Islamic Education	3	-
11000102	Arabic Language	3	-
11000103	English Language I	3	-
11000325	English Language II	3	11000103
10032100	Remedial English (English 100)	3	-
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	3	-
11000108	Community Service	3	-
11000127	Introduction to Computer Science	3	-

Program compulsory courses (90) credit hours:

Course Code	Course Title	Credit Hours	Prerequisite
10801113	Business Statistics	3	None
10221109	Business Mathematics	3	None
10866111	Principles of Management (1)	3	None
10871121	Principles of finance	3	None
10861111	Principles of financial Accounting (1)	3	None
10801111	Principles of Microeconomics	3	None
10876442	Products Management	3	10876111
10876111	Principles of Marketing	3	None
10861121	Principles of Financial Accounting (2)	3	10876111
10801112	Principles of Macroeconomics	3	10801111
10876222	Research Methodology	3	10801113
10876122	Marketing Management	3	10876111
10866215	Human Resources Management	3	10866111

10876318	Marketing Communications	3	10876111
10876212	Sales Management	3	10876111
10876224	Banking Services Marketing	3	10876111
11101251	Business Law	3	None
10871213	Financial management (1)	3	10871121
10876421	Contemporary Marketing Issues & Marketing Case Studies	3	10876111
10876422	Strategic Marketing	3	10876111
10876322	Marketing Research	3	10801113 10876111
10866411	Operations Research	3	10221109
10876449	Graduation Project	3	10876222 10801113
10876321	Consumer Behavior	3	10876111
10876427	Management of Marketing Channels	3	10876111
10876231	Services Marketing	3	10876111
10866120	Principles of Management (2)	3	10866111
10876445	Field Training (internship)	3	End the 90 credit hours
10876328	Global Marketing	3	10876111
11032101	English at the Workplace	3	None

Program Elective Courses (15) credit hours:

Course Code	Course Title	Credit Hours	Prerequisite
10876351	Personal selling	3	10876111
10876352	Public Relations	3	10876111
10876461	Customer Services Management	3	10876111
10876459	Marketing Audit	3	10876111
10876362	Social marketing	3	10876111
10801423	Project Evaluation & Feasibility Studies	3	10801112
10876263	Marketing for Hospitality and Tourism	3	10876111
10876264	Agricultural Marketing	3	10876111
10876366	Sustainable Marketing	3	10876111
10866217	Introduction to MIS	3	11000127
10876357	Sports marketing	3	None
10876368	Pricing Management	3	10876111
10861300	Cost Accounting/Managerial Approach	3	10861121
10871225	Financial markets	3	10871121
10876371	Healthcare Services Marketing	3	10876111
10866226	Business Communications	3	11000103
10876454	Electronic Marketing	3	10876111,11000127
10801226	Economics of Palestine	3	10801112
10876363	Industrial Marketing	3	10876111
10876553	Brand management	3	10876111
10871412	Financial institutions Managing	3	10871121
10876555	Consumer Protection and Competition	3	10876122
10866353	Total Quality Management	3	10866120

Course descriptions:

PRINCIPLES OF MARKETING

This Course is an analysis of the elements of Marketing Mix: product pricing, promotion and distribution decisions. The Course aims at providing students with the economic and marketing analytical skills required for marketing environmental elements, to make appropriate decisions and with the marketing skills of non-profit services, material distribution and customer services.

PRINCIPLES OF ACCOUNTING II

This Course is a continuation of 'Accounting I.' In this Course, students will learn how to conduct a settlement of different statements of accounts by the end of the fiscal year. The Course also discusses the how of dealing with accounting errors which might be discovered during or after preparing final statements of accounts. Furthermore, the Course discusses practical and scientific accounting methods- particularly the American accounting methods- and accounts reconciliation.

PRINCIPLES OF MACROECONOMICS

This Course is one branch of economics that aims at examining the economic behavior of aggregates on a national scale. It will cover income, employment, output and other aspects.

RESEARCH METHODOLOGY

This Course is a study of the basic concepts of 'research' and the methods and tools used in business management. The Course aims at helping students become aware of new methods of research and their applications. Students are expected to write papers based on the skills acquired in the Course

MARKETING MANAGEMENT

This Course provides students with skills on how to apply managerial functions in marketing activity, marketing planning skills, organizing, directing, implementing and controlling marketing activities.

HUMAN RESOURCES MANAGEMENT

This Course is a critical look at organization's principles, methods and resources. Topics covered include strategic human resources development and management for effective employee training and education. It also discusses management issues on employment recruiting, testing, selection and placement, job evaluation, wage and salary administration, labor relations and

communication, performance evaluation, benefits and services, discipline, motivation, morale, accident prevention and safety.

MARKETING COMMUNICATIONS

Students develop skills in planning, constructing and organizing one-to-one marketing activities. Included in these activities are collaborative relationships between consumers and sellers that can be applied by both small and large organizations. New technologies in interactive marketing and in database creation and implementation will be studied.

SALES MANAGEMENT

The purpose of this Course is to provide the student with the necessary skills to predict sales and manage sales operations. To this end, students will be introduced to the statistical methods used in this field and the ways followed in the management of personal sales operations.

BANKING SERVICES MARKETING

Students, in this Course, learn about the principles of marketing banking services, analyzing banking services, purchasing behavior and its determinants, consumer behavior, the marketing environment of the banking services, the developing and innovating of banking services, pricing banking services, clients' patterns and the ways of dealing with them.

CONTEMPORARY MARKETING ISSUES & MARKETING CASE STUDIES

The objective of this course is to study the various issues in marketing and to apply this knowledge through case studies that are derived from real situations on the local and international level. Furthermore, this course will discuss current marketing topics and tackle problems that might occur in a changing environment, using Jordan as the main example.

STRATEGIC MARKETING

This Course aims at deepening student's knowledge of managing marketing activities, particularly linking available resources with marketing opportunities which emerge as a result of developments and changes in the environment. The Course also provides students with the intellectual skills that enable them to analyze the state of marketing activities in the light of results as a prelude to drawing a clear-cut policy for the future. Finally, it introduces students to strategic alternatives in the context of economic crises.

OPERATIONS RESEARCH

This Course introduces the basic principles of Operations Research, with special emphasis on administrative aspects. The Course also teaches the student how to calculate quantity data and enter them as a major element in the decision-making process, thus achieving maximum profit at the lowest possible cost

GRADUATION PROJECT

This Course aims at testing the student's ability to analyze Management and Marketing Problems. In co-ordination with a supervisor, students should

choose a topic of their own interest in order to conduct a study. In writing this Project, students should include: a research outline, an outline of the methods used and an analysis of results. The student, upon completion of the Project, should discuss it with his/her supervisor for feedback and approval

FIELD TRAINING (INTERNSHIP)

The student training is carried out under the academic supervision of the marketing department in order to activate the theories and concepts learned in the field of marketing, all marketing department students are required to pass a training period of 180 hours under the supervision of the marketing department academician or the manager or supervisor in the organization chosen by the student in coordination with the department to enable the student to develop effective professional attitudes and acquire the necessary ethical principles in the workplace, the student during the training period in the institution shall be exposed to:

1. How to prepare marketing studies for products.
2. How to prepare marketing plans for products.
3. How to prepare instruments to collect primary data for different marketing studies.
4. How to segment the market, determine the target market, and how to differentiate company product in the market.
5. Managing of distribution channels and build and managing relationships with customers.
6. Building the ability to manage product pricing.
7. How to manage and evaluate promotional and advertising campaigns. 8 – How to evaluate the company marketing activities.
8. How to use the means of e-marketing and social marketing.

GLOBAL MARKETING

This Course introduces students to alternative methods that are used in entering foreign markets and how to evaluate these alternatives. The Course also provides students with skills to analyze, study and evaluate risks and successes, opportunities in foreign markets and the how's of managing the elements of Marketing Mix in the light of differences among foreign external environments.

CONSUMER BEHAVIOR

The aim of this Course is to introduce students to human behavior concepts which are important in the study of Purchasing Behavior. Students will also be provided with behavioral models which explain purchasing behavior. The Course also looks at the skills employed in the application of different behavioral concepts on the state of the Palestinian consumer.

MANAGEMENT OF MARKETING CHANNELS

This course aims to let students get acquainted with the importance of the distributing activity as a part of the marketing mix. And analyzing the environmental factors that may affect the behavior of marketing institutions.

This course also aims to acquaint the students with the different types of marketing institutions and how it differs in its role and marketing activities as a wholesale institution or retail one's. This course concentrates on managerial sides of planning for the distribution system in a firm and the application of the concept of controlling the marketing performance a particular firm. It also concentrates on kinds of ways of leadership inside marketing channels, and how to deal with conflicts, if there are any.

This course also aims to update the student on subjects that deal in managing marketing channels, marketing mix. Customer services, logistic management, international distribution channels, and services marketing.

SERVICES MARKETING

This course covers the following topics: the concept of service marketing, the development of services marketing, the characteristics of services and its marketing applications, marketing planning for services; the service marketing mix elements, services quality & productivity; international marketing of services and management of marketing of services & control

PERSONAL SELLING

This course provides the fundamentals of selling skills, qualifications for effective selling as well as techniques for organizing, staffing, motivating and evaluating the sales force. Topics covered in this course will include principles in selling, sales presentations, the salesperson as a merchandiser, customer service, sales organizations and functions, forecasting, sales force selection and training.

PLANNING AND DEVELOPMENT PRODUCT

This course aims to acquaint the students with the nature and duties of the new product management concerning its role in the firms' marketing efforts, the identification of a product, and the characteristics of new products and the steps of planning for a new product including : goals , strategies, & marketing programs.

This course also aims at enriching the students with theoretical and practical knowledge about developing & inventing new products (since its a general idea until it hits the markets). It also enriches students in how to set marketing plans and programs for new products. Furthermore this course elaborates deeply on the concept of new product adoption and the factors that affect this

PUBLIC RELATIONS

This Course aims at providing students with the basic skills necessary for communicating with the internal and external community of the institutions. Students learn methods of studying and analysing public opinion, its trends and formation and its encounter. The Course also looks at the necessary skills for planning Public Relations Campaigns for the benefit of institutions and their reputation in the market place.

CUSTOMER SERVICES MANAGEMENT

Emphasis, in this Course, is on the reception and processing of clients' orders by using the computer, in addition to the preparation, packaging and shipment of these orders. Other topics covered include: stockpiling procedures in warehouses, transportation, purchasing and information.

MARKETING AUDIT

This Course discusses control methods and their application in marketing activities in order to enhance the marketing competency and effectiveness in organizations.

SOCIAL MARKETING

This Course focuses on how to introduce and apply marketing concepts in public health, social welfare institutions, and fund-raising campaigns for charitable societies and in free education services.

PROJECT EVALUATION AND FEASIBILITY STUDIES

In this Course, students learn how to use scientific methods and tools in data collection for projects. In addition, students will study and analyze the data to arrive at results that may determine the feasibility of the project from technical, marketing, financial and social aspects. Students also learn about the foundations of financial analysis, the concept of 'cash flow' and the techniques used in evaluating investment projects. Finally, students will consider the choice of the best project and take into consideration sensitivity analysis.

MARKETING FOR HOSPITALITY AND TOURISM

The purposes of this course is to acquaint the students with essential concept of Marketing of Tourism and also with importance of Marketing Tourism and its developments, and enrich students with knowledge concerning applications of Marketing of Tourism and marketing strategy, and get acquainted with decisions and policies concerning Marketing in Tourism especially in Jordan.

AGRICULTURAL MARKETING

This Course aims at providing students with the necessary skills to apply marketing concepts on agricultural produce. To this end, students will be taught how to study and analyze the nature of agricultural produce, to analyze

this in comparison with other products and to analyze the influence in the marketing and management of the produce.

SUSTAINABLE MARKETING

This course covers topics related to understand the social environment of marketing and the role of ethics in influencing the practice of marketing activities in its all aspects This course includes experiences related to social and ethical trends of marketing in the light of modern economic and social developments.

INTRODUCTION TO MIS

In this Course, students will learn about Information Systems and their importance in the organization. The Course mainly focuses on the importance of Management Systems and their benefit in determining goals and directing them towards the achievement of these goals. In addition, the Course highlights the importance of information in that it is considered an important element in planning and co-ordination to make sure that plans are implemented in proper ways. The Course also dwells on the ways of obtaining the necessary information about customers and distributors since it is important in Supervision Operations. The Course ends with shedding some light on the stages of Information Flow

SPORTS MARKETING

This course aims to introduce students to the concepts related to marketing in sports, its components and steps, its role in the success of local, regional, and international tournaments and the economic dimension of sport, the exposure to some of the global models used for sports marketing. In addition, this course aims at developing student's ability to prepare a blueprint for marketing of sports events, in all its dimensions

PRICING MANAGEMENT

This objective of this course is to introduce the student to one of the most important factors in the marketing mix. Pricing is very critical for the success of any product or service. This course will give the students a solid background on the different methods of pricing as well as on the different approaches in pricing and when we should each pricing policy and under what circumstances.

COST ACCOUNTING/MANAGERIAL APPROACH

Students, in this Course, learn about the concepts and the analysis procedures to generate cost data for management planning and control. The Course will specifically deal with accounting systems that are used in industrial companies. In this regard, the Course will look at the elements of costs and their classifications. The Course also discusses standard costs and their importance in controlling cost elements. Finally, the Course examines some

mathematical models, such as linear programming and probability theory, used to help management in taking its economic decisions.

FINANCIAL MARKETS

In this course, students are introduced to the concept of financial market & the hypothesis of its efficiency. Students will also learn about Palestine Securities Exchange Market, types, instruments and pillars of securities markets. Furthermore, the course highlights monetary markets and their role in the economy and the investment instruments used.

HEALTHCARE SERVICES MARKETING

In this Course, students are provided with the necessary skills to apply modern marketing concepts in private and public health care institutions. To this end, students will learn how to study and analyze the nature of health services, the dimension of investment in health institutions and the beneficiaries' objectives from their services.

BUSINESS COMMUNICATIONS

The purpose of this Course is to develop the student's ability in writing business letters and writing them properly without mistakes. The Course teaches students how to write business letters in terms of forms, styles and types. The Course also teaches students how to apply for vacancies, how to write a C.V. or resume. The Course ends by teaching students how to write sales offers for products

ECONOMICS OF PALESTINE

This Course is a study of Palestine's economic resources, its economic development and its demographic growth before and after the Israeli Military Occupation. The Course also studies the major economic sectors and aspects of underdevelopment and imbalances as results of the Israeli Economic Policy, which aims at making Palestine's economy dependent and underdeveloped via the different hindrances and obstacles.

ELECTRONIC MARKETING

This course helps you to understand the different approaches taken towards e-marketing and the various components of an e-marketing plan. A series of strategies are also provided to assist you when implementing a Web presence as part of your marketing mix. You will learn to identify common approaches to e-marketing identify typical components of an e-marketing plan, incorporate Internet elements into a marketing mix by following three strategies, construct your web site, promote your Web presence, and manage online content effectively.

INDUSTRIAL MARKETING

The course includes the principles of wholesale trade and industrial exchange,

and analysis of wholesale institutions and industrial marketing, problems and issues related to the strategic planning of goods directed to wholesale and commercial establishments.

CONSUMER PROTECTION AND COMPETITION

The course includes the definition of the consumer and the importance of his protection and his internationally recognized rights, such as the right to health and safety, the right to warranty and after-sales services, the right to be informed, the right to join associations to defend his interests, the right to protect him from unfair contract conditions. The course includes also a study of how to protect consumer according to Palestinian law, whether according to the general rules or by the laws enacted to this purpose, such as competition laws and those that are in the process of emergence, especially the draft law to protect the consumer for the year 2005, the concept of rationalization of consumption and its mechanisms, the methods of lobbying and advocacy, to put pressure on legislators to pass legislation that specializes in the Palestinian consumer protection, health and safety and expenses.

BRAND MANAGEMENT

This course examines brands and brand management focusing on three primary functions including building brand equity, measuring brand equity, and managing brand equity. The courses focus includes brand positioning, choosing brand elements, designing marketing programs, integrating marketing communications, measuring brand equity, developing a brand equity measurement and management system, measuring sources and outcomes, design and implementing strategies. Additional areas of study include introducing and naming new products and brand extensions, managing brands over time, geographical boundaries, and market segments.

TOTAL QUALITY MANAGEMENT

This course aims at introducing the nature of total quality control in its general frame, and historic development. It also includes the introduction of the elements of quality control, leadership, pleasing customers, enabling workers, constant improvement of operations, suppliers associations, and performance standards. The course will also display the means and methods of categorizing quality control.

STAFF MEMBERS:

Name	Position	University of graduation
Dr. Majid Mansour	Assistant Professor	Rajasthan, India
Dr. Sam Fuqha	Assistant Professor	Amman Arab College for Higher studies, Jordan
Dr. Moutafa HajjALi	Assistant Professor	Kiel University, Germany
Dr. Moutasem Mas'oud	Assistant Professor	Amman Arab College for Higher studies, Jordan
Mr. Najeh Abdelqader	Lecturer	An-Najah University, Palestine
Mr. Abdallah Samara	Lecturer	University of Jordan
Mr. Ma'rouf Dweikat	Lecturer	Ben jab University, Pakistan

{ Department of Geography }

Undergraduate requirements for a B.A. degree in Geography

The Department of Geography offers specialization in human and physical geography.

The Department teaches and trains students according to clear and modern scientific and educational basics that fit with the requirements and needs of the community. Doing that, graduates become capable of pursuing their higher education to obtain the Master's either from An-Najah or any other university. Graduates are also expected to become capable of enter the labour market, in the fields of learning, environment, natural resources, consulting studies, and others.

Students wishing to obtain a B.A. in geography must successfully complete 126 credit hours. These include university and department compulsory requirements, as well as elective courses in addition to two "free" courses carrying two credits hours each.

Intended Learning Outcomes ILOs:

Geography students are expected to have these skills:

- Concentration, attention and good listening.
- Scientific and logical thinking which leads to linking the theoretical subject and the practical applied aspect of the course.
- Raising the level of self-confidence and trust in the education the student received; in order for him/ her to be eligible to compete with other graduates from other universities in the different academic, educational, behavioral and performance fields.
- Having the skills to use various teaching aids and tools that serve the areas of work when needed.
- Having the knowledge of basic and elementary concepts that qualifies students and expands their horizons of knowledge, awareness and research.
- Orienting and qualifying the undergrads and grads to possibly pursue their higher education.
- The ability to deliver information in a logical, scientific and interesting way.
- The ability to relate to geography and other sciences when it requires.
- Enjoying the spirit of perseverance, determination and patience.
- The ability to express their ideas in a calm scientific manner, avoiding complexity, uncertainty and prolongation.
- The ability to use the scientific and systematic method of thinking and ways of raising different topics.
- The ability to use the computer; and customize it for the application of many scientific programs studied by the student during his/ her study years.
- The ability to write reports and displaying them in an objective convincing manner.

Hence, the graduate should be expected to have a strong character, able to positively interact with the others, patience, intelligence, perseverance, seriousness, discipline and

spirit of initiation. Here are some of the personal characteristics geography alumni are expected to enjoy:

1. Field working and solving environmental issues.
2. Contributing to minimizing the effects of natural disasters.
3. Contributing to exploitation of natural resources.
4. Actively interacting with national issues.
5. Ability to understand the natural phenomena.

Program Objectives:

- Graduating qualified cadres that can meet with the labor market needs in various sectors.
- Participating in national research projects to solve the community and environment problems.
- Keeping pace with the technical and scientific updates in the field of geographical analysis of the natural, physical and economic phenomena.

Program Vision:

The Department of Geography at An-Najah National University is looking forward to achieving an advanced level in teaching geography; theory and practice. Furthermore, keeping with the updates and modern technologies applied.

Program Mission:

The Department of Geography is committed to providing students with knowledge and skills; developing their capacities to better understand and analyze geographical phenomena; developing solutions to the society-related problems, such as: environmental pollution and climate change. The Department also provides students with the skills to use tools, devices and modern computerized programs in building, managing and analysing data bases and spatial planning for developmental projects.

IA. Compulsory courses (92 credits)

Course #	Course title	Credits	Prerequisites
10811111	Geography of Palestine	3	-
10811112	Introduction to Human Geography	3	-
10811113	Introduction to Physical Geography		-
10811114	Principles of Surveying	3	-
10811115	Principles of Maps and Cartographic Representation	3	-
10811116	Principles of Climate	3	-
10811117	Principles of Geology	3	-
10811118	Principles of Geomorphology	3	10811217
10811119	Principles of Statistics	3	-
10811120	Economic Geography	3	-
10811121	Computer Use in Geography	3	-
10811122	Geography of the Arab World	3	-
10811123	Introduction to Aerial Photo Analysis	3	10811115
10811124	Introduction to GIS	3	10811115
10811125	Principles of Demography	3	-
10811126	Agricultural Geography	3	10811216
10811127	Geography of Industry	3	10811220
10811128	Advanced Surveying	3	10811114
10811129	Urban Geography	3	-
10811130	Geography of Development	3	10811220
10811332	Research Methods in Geography	3	
10811333	Water Resources Geography	3	08112161 08112171
10811434	Applied Geography	3	08112241, 08112181
10811435	Transport Geography	3	10811220
10811436	Regional Planning	3	-
10811437	Population Geography	3	10811225
10811439	Remote Sensing	3	
10811440	Geography of Arid Land	3	08112161 08112181
10811441	Graduation Project	3	10811332
10811442	Practical Training	5	10811441

1B. Elective courses (12 Credits)

Course#	Course title	Credits	Prerequisite
10811250	Fundamentals of Global Navigation Satellite System (GNSS)	3	-
10811251	Climate and Plant Geography	3	10811216
10811252	Ancient World Geography	3	-
10811253	Environment Preservation	3	-
10811254	Computer -Aided Design	3	08111151 08112211
10811355	Cartographic Representation (Practical)	3	10811115
10811356	Principles of Rock Formation	3	10811217
10811357	Geography of the Muslim World	3	-
10811358	Geomorphologic Studies	3	10811218
10811359	Geography of the New World	3	-
10811360	Biogeography	3	-
10811361	Soil Geography	3	10811218
10811362	Geographical Field Studies	3	-
10811363	Tourism Geography	3	-
10811364	GIS 2	3	10811224
10811365	Location Theory	3	
10811466	Study and Analysis of Maps	3	10811115
10811467	Methods of Demographic Analysis	3	-
10811468	Astronomical Geography	3	-
10811469	Geographical Topics in English	3	-
10811470	Geopolitics	3	-

Free Courses: 4 credit hours.

Course descriptions

GEO 10811111 GEOGRAPHY OF PALESTINE

This course aims at introducing students to their homeland Palestine with its pre- 1948 borders. Physical and human characteristics are studied. It also aims at strengthening the students' loyalty to their land and people.

GEO 10811112 INTRODUCTION TO HUMAN GEOGRAPHY

This course includes the study of human geography research methods and its schools of thought. It also studies the appearance of man and his distribution on the earth.

GEO 10811113 INTRODUCTION TO PHYSICAL GEOGRAPHY

This course aims at introducing the students to theories that have addressed the formation of the solar system, the earth, oceans and seas, and the movements of the earth's crust.

GEO 10811114 PRINCIPLES OF SURVEYING

This course aims at providing students with skills to do field measurements of terrestrial features such as buildings, land parcels, and roads. It also aims at enabling students to prepare large-scale maps and plans, using different surveying instruments. The course includes both theoretical and practical materials.

GEO 10811115 PRINCIPLES OF MAPS AND CARTOGRAPHIC REPRESENTATION

Topics covered in the course include principles of map drawing, cartographic symbols used in maps, instruments used in map drawing, technical and mathematical methods used to make projections, methods of land survey, creation of projections, spaces on maps, nature, and familiarity with equipment used in various surveying operations, in addition to ways of elevating a natural area on a map or a physical plan.

GEO 10811216 PRINCIPLES OF CLIMATE

This course begins with a definition of climatology and the relationship between climatology and meteorology, atmosphere in terms of structure and its effect on controlling earth's environment, a study of climatic elements (sun rays, heat, winds, air pressure, moisture, precipitation, rain, clouds, mist) and a general foundation on which international climate classifications are based.

GEO 10811217 PRINCIPLES OF GEOLOGY

This course covers the earth's formation and structure, topography or elevation (relief) generating movements, and external factors influencing the external surface of earth.

GEO 10811218 PRINCIPLES OF GEOMORPHOLOGY

This course covers topics such as forms of earth surface in terms of their description, distribution, development, and interpretation of their origin. The course also discusses the earth's geological structure and the geomorphologic process. In addition, the course introduces the pillars and the basic concept of geomorphology, and highlights the role of geomorphologic processes and factors which are attributed to structural factors: volcanic and geomorphologic changes resulting from external processes such as land-sliding, coastal, and karstic factors.

GEO 10811219 STATISTICS USED IN GEOGRAPHY

This course introduces a number of topics: measurements of central speed, and dispersion, natural distribution, coefficient correlation, regression coefficient, sampling theory and statistical significance.

GEO 10811220 PRINCIPLES OF ECONOMIC GEOGRAPHY

This course aims at deepening students' knowledge of the principles of economic geography, its rules and sections, and its research approaches. This will allow students to understand physical and human environments which in turn decide centers of economic activities in the world.

GEO 10811221 COMPUTER USE IN GEOGRAPHY

This course begins with the basics of computer science, and then it moves to the use of Word, Excel, Access, SPSS, and Internet.

GEO 10811222 GEOGRAPHY OF THE ARAB WORLD

This course is a comprehensive regional geographical study of the Arab World. This will be followed by detailed studies of some Arab countries.

GEO 10811223 INTRODUCTION TO AERIAL PHOTO ANALYSIS

This course introduces the history of aerial photography, its types and geometric characteristics as well as its importance in land use/ land cover mapping and quantitative and qualitative analysis of aerial photographs using stereoscopes.

GEO 10811224 INTRODUCTION TO GIS

This course introduces a number of topics: basics of Geographical Information System (GIS), its importance for geographers in spatial analysis and mapping, using the well-known GIS software.

GEO 10811225 PRINCIPLES OF DEMOGRAPHY

This is a study of different population theories and policies, sources of demographic and urban data, mortality, migration and its rates, and factors influencing them.

GEO 10811326 AGRICULTURAL GEOGRAPHY

This course focuses on the analysis of the significance and status of agricultural geography, the physical circumstances influencing agriculture as an independent science and its relationship with human environment, social and economic factors and their impact on development of agriculture, agricultural systems in the world, the most important foundations and methods followed in field studies.

GEO 10811327 GEOGRAPHY OF INDUSTRY

This course will examine industry in terms of geographic, economic, historical and political perspectives, regional distribution of industry, industrial systems and their development, patterns of industrial distribution, industrial production on the regional and international levels, factors influencing it, theory of industrial location and strategic goals for development planning.

GEO 10811328 ADVANCED SURVEYING

Building on the subjects taught in Principles of Surveying, this course introduces other subjects: the computation of areas and volumes, route surveying, horizontal control surveys, and adjustment computation.

GEO 10811329 URBAN GEOGRAPHY

This course is a study of urban and rural housing patterns and characteristics, city planning, patterns of land use, and major city problems.

GEO 10811330 GEOGRAPHY OF DEVELOPMENT

This course introduces students to the main principles of development geography and its various aspects: political, economic, social, demographic, health, and technical. It analyses the spatial dimensions of the concept of sustainable development on the different geographic levels: It assesses the effects of physical and human phenomena on the process of development in the different countries of the world, while giving special emphasis to studying the geographic context of development in Palestine. The course analyzes regional and international disparities in the dominant developmental patterns around the world and the historical reasons that led to their appearance. It discusses the different development strategies that have been followed and implemented by different countries and the effectiveness of such strategies in the realization of sustainable development. The course also presents a methodological analysis of International Aid, its different kinds, and the role it has played in motivating or retardation of the process of development in the different countries and regions of the world. The course ends with examples for illustration.

GEO 10811332 RESEARCH METHODS IN GEOGRAPHY

This course explains the steps to be followed in conducting geographical research. It concentrates on methods of data collection and provides students with the necessary skills to carry out research work.

GEO 10811333 WATER RESOURCES GEOGRAPHY

Topics covered in this course include the water cycle - in particular, its basic elements: rainfall, evaporation, precipitation, water infiltration in soil, underground water, rivers and lakes, seas and oceans, water amount availability and scarcity, changes in time and place, utilization, development and preservation of these resources.

GEO 10811434 APPLIED GEOGRAPHY

This course aims at improving students' capabilities of understanding spatial distribution, properties, and changes of geographical features existing in different environments. It also aims at providing students with the necessary skills, such as data collection methods, data processing, data analysis and displaying results, and map and report preparation. This course is based on field work, computer geographic software, and lab work.

GEO 10811435 TRANSPORT GEOGRAPHY

This course examines a number of topics: transportation and travel, development of transportation system and its influence by human and physical factors, types of ground, sea and air transportation, means of transportation and their development up to the present. It also investigates the extent of their reaction to the natural environment they are used in and their effect on national and world economies.

GEO 10811436 REGIONAL PLANNING

This course highlights the relationship between planning and geography, factors influencing planning, and types of planning: agricultural, industrial, etc. It also introduces patterns of planning in countries that have different social systems. The course concludes with methods of classifying regions within each area of study.

GEO 10811437 POPULATION GEOGRAPHY

Topics covered in this course include the geographical distribution of population, factors influencing this distribution, different demographic structures, general mobility of population, people's relationship with the environment and natural resources.

GEO 10811439 REMOTE SENSING

This course covers the basic concepts of remote sensing, the spectral characteristics of different features of the environment, remote sensing satellites orbiting the earth, and satellite image processing techniques.

GEO 10811440 GEOGRAPHY OF ARID LAND

Students in this course will be introduced to the location of arid regions, their climate, morphological and vital circumstances, resources of natural wealth, water resources and their influence on human systems, and economic and social spheres. The course also examines problems of the environment, such as desertification, salinity, soil erosion and pollution, and the most important solutions possible to solve environmental problems and future aspirations to develop and create a sustainable environment.

GEO 10811441 GRADUATION PROJECT

This course aims at training students on how to write term papers and theses in geography, and how to apply geography research methods. Students are expected to conduct different research projects on geographical topics.

GEO 10811442 PRACTICAL TRAINING

In this course, students who have passed the graduation project course do practical training in private and public institutions at home or abroad in geographical fields. This internship aims at arming students with the necessary skills to be ready for employment.

GEO 10811250 FUNDAMENTALS OF GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

This course will cover fundamentals of the Global Navigation Satellite System (GNSS). It provides an overview of the GNSS system, its operation, concepts of satellite navigation, signal structure, major sources of error, positioning techniques, and GNSS applications on land at sea and in the air. This course will also include field work which will consist of GPS data collection and analysis of different types of receivers.

GEO 10811251 CLIMATE AND PLANT GEOGRAPHY

This is a quantitative applied study of climatic elements and the most important systems used in different scientific and practical situations such as heat, dryness and moisture coefficients, water balance, sun ray balances, identification of movement of winds and its quantitative representation, studies on weather forecasts and conditions and their representation on weather boards.

GEO 10811252 ANCIENT WORLD GEOGRAPHY

This course is a study of regional geography in Asia and Europe.

1. Europe: geographical location, structure and elevations, climate regions, population, economic activity (agriculture in all its forms) mining and industry. Two countries are taught as case studies.

2. Asia: geographical location, structure and elevation, climate regions, natural plants, deserts, population, agricultural crafts, mining industry and industrial regions, the Mediterranean Sea Basin, and a comprehensive description of the Mediterranean region.

GEO 10811253 ENVIRONMENT PRESERVATION

This course investigates the relationship between man and his old and present environment and the mutual influence of both. The course also surveys old and modern schools concerning this mutual relationship and the subsequent problems resulting from this interaction, especially in the age of technology, which has resulted in very dangerous problems and has created an imbalance in the environment. These problems can be seen in pollution in all its types, production, food distribution, draining of resources, and desertification. These problems will be studied in terms of their causes and effects and possible solutions. There is also an emphasis on the importance of proper scientific planning to maintain environmental balance for the sake of man's life on this planet.

GEO 10811254 COMPUTER-AIDED DESIGN

After completion of the Computer Use in Geography course, students in this course learn about the software of geometric drawing that is useful to geographers. They also learn how to produce large-scale maps and plans.

GEO 10811355 CARTOGRAPHIC REPRESENTATION (PRACTICAL)

This course introduces methods of cartographic representation, and techniques used in making distribution maps, namely, the transformation of different figures and statistics to specialized maps. Students are introduced to the technical methods used in building this type of maps, technical problems that face cartographers when using these methods, ways of overcoming them, using some mathematical and statistical methods.

GEO 10811356 PRINCIPLES OF ROCK FORMATION

This course is a study of earth surface, rocks, their types, their distribution and their identification.

GEO 10811357 GEOGRAPHY OF THE MUSLIM WORLD

This is a brief regional study of the Muslim world. It sheds light on the importance of its location and its strategic dimension for natural unity. Emphasis will be given to physical circumstances, geological structure, climate, biosphere, human conditions, types of economic activity, and their reflections on social conditions. The course also covers the possibility and potentials of unity on the basis of belief and location circumstances. Two political case studies will be considered: one from the Arab world and another from outside the Arab world.

GEO 10811358 GEOMORPHOLOGIC STUDIES

This course investigates geomorphologic phenomena and capitalizes on students' knowledge taken in Geography 34215 which tackles geomorphologic processes in terms of analysis, description and classification. The course also dwells on mechanical engraving processes because of geomorphologic

phenomena in arid, dry areas represented in desert forms. It also examines draining networks, river floors and coastal forms in both mild and hot weather areas. This is in addition to ice forms in cold areas, karstic erosion/ weathering as a result of chemical dissolution and its variations according to climates and different rocks. The course, finally, highlights the significance of geomorphologic study and the possibility of its contribution to the preparation of engineering projects, economic geology and military purposes.

GEO 10811359 GEOGRAPHY OF THE NEW WORLD

Topics covered in this course include a history of discovering North America, its structure and elevation, climate and climate regions, natural plants, soil divisions, population and its distribution, economic activity, agriculture and patterns of agricultural use, mining and areas of its concentration, industry and trade. There will be a detailed study of Canada and its geography's human and physical aspects. A study of South America will cover location, structure, elevations, climate, climate regions, natural plants, forests, grass, provinces and extension of the continent, population and its different structures, economic activity, agriculture, pasture, rainfall agriculture, irrigated agriculture, mining and industry. Two case studies, Brazil and Chile will be studied in detail in terms of human and physical aspects: population and economic activity.

GEO 10811360 BIOGEOGRAPHY

This course aims at emphasizing the need to protect and maintain environmental elements from factors of destruction and deterioration. This course will examine the spatial distribution of flora and fauna life on the surface of the earth, factors that have led to diversity and variation in spatial patterns, geographical approach, nature of biogeography, bases of animal and plant classification, the most important classifications, factors controlling the distribution of plant cover, major plant and animal groupings. Finally, the course will look at natural plants and wild animals, and aquatic animals such as fish.

GEO 10811361 SOIL GEOGRAPHY

This course covers a number of topics: soil and its components, factors behind its formation, its major classifications, and distribution in the world, effect of all this on picture of distribution of natural plant cover and agricultural produce in particular.

GEO10811362 GEOGRAPHICAL FIELD STUDIES

This course aims at introducing students to geographical phenomena and their monitoring and field observation through field studies and trips.

GEO 10811363 TOURISM GEOGRAPHY

This course studies the relationships between tourism and geography. It also studies types of tourism and the factors affecting tourism activities on different geographical levels.

GEO 10811364 GIS II

This course builds on the Introduction to GIS course. It focuses on studying advanced methods of spatial and attributes data. It also includes applications and projects in different topics such as mapping, urban planning, environment, population and land use, using the GIS software.

GEO 10811365 LOCATION THEORY

This course is meant to introduce different factors and location theories, i.e., von Thunen; weight loss and transport cost; labor differential and transport costs, Weber Theory, Fetter theory, in addition to location concepts such as site vs. situation, etc.

GEO 10811466 STUDY AND ANALYSIS OF MAPS

The purpose of this course is to train students on how to draw topographical-geological points on maps and analyze these points as an integral part of the map components. They will also receive training on analysis of some other maps.

GEO 10811467 METHODS OF DEMOGRAPHIC ANALYSIS

Students in this course learn methods used in measuring and evaluating demographic data, demographic data analysis pertinent to birth, mortality, migration, life tables, and population projections.

GEO 10811468 ASTRONOMICAL GEOGRAPHY

This course studies theories which address the universe's formation, including the solar system. It also studies the characteristics of stars and planets. Students are also trained on using the telescope for monitoring the universe.

GEO 10811469 GEOGRAPHICAL TOPICS IN ENGLISH

This course is a study of geographical subjects in English. These subjects are human, physical and economic geography. Topics covered are not taught in the four-year curriculum plan of the department. The course aims at helping students acquire English technical terms used in geography.

GEO 10811470 GEOPOLITICS

This course covers a large number of topics: man and his internal and external relationships on a specific area of land, international problems, relations between countries, their potential and political borders, stages of countries' development, international relations, colonial expansion, old colonial activity by some colonial powers such as Britain France, Italy, Germany, the U.S.A, and Holland, etc. The course illustrates some methods of modern colonialism and contemporary international border disputes which have caused wars among many countries.

STAFF MEMBERS:

Name	Academic rank	University of Graduation
Mohammad Abu Safat	Professor	University of Anlagen, Germany
Hussein Ahmad	Associate Professor	University of Durham, UK
Aziz Dweik	Associate Professor	University of Pennsylvania, USA
Ahmed Ra'fat Ghodieh	Assistant Professor	University of Durham, UK
Ahmad Taha	Assistant Professor	Nottingham University, UK
Taha Salameh Adarbeh	Assistant Professor	Charles University, Prague, The Czech Republic
Maher Abu Saleh	Assistant Professor	Al Banat College, Ein Shams, Egypt
Wa'el Inab	Assistant Professor	University of Durham, UK
Sa'ed Abu Hijlah	Lecturer	University of Northern Iowa, USA

{ Department of Political Science }

The Vision:

The Department of Political Science is fully committed to the elevation of scientific and political thinking that should distinguish our graduates. The Department has a vision of a free civil society in which our graduates contribute. That is why the Department is insistent on a very high standard of education that could be delivered by highly qualified instructors and through the use of modern technology. Our students are expected to occupy key jobs that require ability, resolve and analytical thinking, and are expected to meet all expectations through hard-work, perseverance and commitment. The Department encourages extracurricular activity that is essential for personality building.

The Message:

The message of the Department is that societies can achieve progress and prosperity through highly educated people, and that is exactly what the Department is doing.

The Objectives:

The Department of Political Science aims at achieving the following:

1. Contributing to national development through preparing students to do so.
2. Enhancing certain political values such as democracy, freedom, good governance and the rule of law.
3. Achieving permanent development in of knowledge and expertise.
4. Enhancing the students' theoretical knowledge which is essential for understanding political phenomena.
5. Enabling students to understand concepts and how they are interrelated.
6. Elevating the students' understanding of responsibility and accountability.
7. Upgrading the students' readiness to conduct team work.

The Intended Learning Outcomes (ILOs):

The outcomes of knowledge and comprehension:

- 1. The outcomes of general knowledge**, which are the outcomes students of political science acquired through studying the university requirement courses, such as Islamic culture, Arabic, English, computer skills, and leadership and communication skills.
- 2. The outcomes of related knowledge**, which are acquired through the compulsory and elective courses which the Department of Political Science offers, such as Introduction to Law, Micro-economics, and Principles of Management.
- 3. The outcomes of specialized knowledge**, which is the knowledge students acquire in their field of study, which is represented by the three pillars of political science: political thought and theory, political systems, and international relations. This

knowledge is acquired through the Department's compulsory and elective courses which aim at teaching students the basics, principles and aspects of political science in courses such as Principles of Political Science, Political Thought, Islamic Political Thought, Israeli Political Thought, and Introduction to International Politics.

Applied Outcomes:

1. **The outcomes of analytical skills**, which are the outcomes students acquire through studying courses that help them analyze, such as: General Politics, Democracy and Human Rights, and American Policy in the Region.
2. **The outcomes of applied skills**, which are the outcomes that students acquire through the application of the theoretical knowledge which they learn in they learn from the books and references. These skills are acquired through the courses of the political science department, the most important of which is Applied Studies in Political Science.
3. **The outcomes of research skills**, which are the outcomes acquired through writing reports and conducting research from different sources, both traditional (like books) and modern (such as the Internet), within courses such as Research Methodology, which is preferably taken at the beginning of the program and teaches students the basics and methods of scientific research, Methods of Studying Political Science, and the Seminar.
4. **The outcomes of mental skills**, which are the outcomes that are acquired through organized, sequential thinking and lead to rational conclusions in a way that motivates students to ponder the theory and philosophy of political science and its foundation.
5. **The outcomes of morals and ethics**, which are the outcomes that students acquire through their knowledge of the values and ethics that philosophers and intellectuals have taught, and which have been the center of interest for three of the main systems of governance: justice (Islam), freedom (capitalism), and equality (communism) These values are to be studied, comprehended and applied by the students during their post-graduate careers. These values are taught in courses such as Democracy and Human Rights.
6. The outcomes of loyalty and patriotism.

The Department of Political Science seeks to reinforce the possibility of balancing between the theories that the students study and their application to their daily life, and it does that through organizing conferences, lectures, and workshops, in which experts and academics participate in talking about subjects such as the political system, the Palestinian issue, and Palestinian studies.

Studying political science enables students to understand the theoretical frame for politics and international relations, in addition to the regional and international political environment.

To obtain a B.A in Political Science, students must finish a total of (129) credit hours, which include University requirements, Department requirements and free courses.

Departmental study plan:

Requirements	Credit hours
University requirement courses	18
Department compulsory courses	87
Department elective courses	18
Free courses	6
Total	129

First: University Requirements (18 credit-hours)

Course #	Course Title	Credit Hours	Prerequisite
11000101	Islamic Culture	3	-
10032100	Remedial English 100	3	-
11000102	Arabic Language	3	-
11000103	English Language I	3	Remedial English 100
11000325	English Language II	3	11000103
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	1	-
11000108	Community Service	1	-
11000127	Introduction to Computer Science	1	-

Second: Program Requirements (129 credit-hours)

a) Program Compulsory Courses: 87 credit hours composed of:

Course #	Course Title	Credit Hours	Prerequisite
11000105	The Palestinian Studies	3	-----
10806101	Principles of Political Science	3	-----
10806102	Introduction to Political Development	3	-----
10806103	Introduction to International Politics	3	10806101
10806104	Introduction to International Law and International Organizations	3	10806101
10806105	Western Political Thought	3	10806101
10806206	Comparative Politics	3	10806101
10806207	Political Parties and Movements in the Arab World	3	10806101
10806208	Changes and Transformations in Arab Political Systems	3	10806101
10806209	The Palestinian Political System	3	10806206
10806210	The Israeli Political System	3	10806206
10806311	Public Opinion	3	10806101
10806312	Scientific Research Methods	3	-----
10806313	Approaches to Political Science	3	10806101
10806314	Basics of Diplomacy	3	10806101
10806315	The Foreign Policy of Major Powers	3	10806103
10806416	Public Policy Analysis	3	10806101
10806417	Islamic Political Thoughts	3	10806101

Course #	Course Title	Credit Hours	Prerequisite
10806418	Democracy and Human Rights	3	10806101
10806419	European Union	3	10806101
10806420	Crisis Management and the Art of Negotiation	3	-----
10806421	Seminar	3	10806312
10806422	Field Training	3	Completion of 90 credit hours
10851111	Principles of Public Relations	3	-----
10866111	Principles of Management 1	3	-----
11032101	English in the Workplace	3	11000325 or 11000322
11101110	Introduction to the Study of Law	3	-----

b) Program Elective Courses: 18 credit-hours to be chosen from the following

Course #	Course Title	Credit Hours	Prerequisite
10806150	Zionist Thought	3	10806101
10806151	Philosophy and Logic	3	-----
10806152	Theory of Israeli Security	3	-----
10806153	Political Sociology	3	-----
10806154	Political and Economic Development	3	10806101
10806255	The Palestinian Question on the International Stage	3	10806105
10806256	Civil Society Organizations	3	10806101
10806257	The Arab World, Iran and Turkey in International Politics	3	10806101
10806258	American Policy in the Arab Region	3	10806101
10806259	Islam and the West	3	10806101
10806260	Geopolitics	3	-----
10806361	Arab National Security	3	-----
10806362	Arab World Economies	3	10801112
10806363	Contemporary International Issues	3	10806105
10806464	Globalization	3	-----
10806465	The European Union and the Arab - Israeli Conflict	3	10806101
10806466	Readings in Political Science	3	10806101
10806467	Applied Studies in Political Sciences	3	10806101

Third: Free Electives (6 credit-hours)

Course #	Course title	Credit hours	Prerequisite
7303433	Pharmacology and Community	2	-
10311197	French Language	2	-
11000131	Geography of Palestine	2	-
11000142	Family System in Palestine	2	-
11000143	Principles of Islam	2	-
11000144	Biography of the Prophet Mohammad PBUH	2	-
11201101	Introduction to Musicology	2	-
11201103	Palestinian Music Folklore	2	-

Course Descriptions:

11000105 PALESTINIAN STUDIES

This course is designed to equip the student with sufficient knowledge on the development of the Palestinian cause, and enlighten him/her on the approaches to analyzing the different stages of seeking a solution. The course starts with the history of the region and the successive civilizations that appeared in Syria, including the land of the Canaanites, i.e., Palestine. The course provides a history of the British Mandate, the formation of the Zionist organization, and the international efforts to create Israel. It also focuses on Palestinian resistance during the Mandate and after the 1967 war. It discusses the PLO and the efforts to find a solution for the Palestinian question.

10806101 PRINCIPLES OF POLITICAL SCIENCE

This course is meant to acquaint students with the basic principles of politics, such as the concepts of government, legislation, elections, justice, public opinion and citizenship. It also informs the students of the history of the field, and how it relates to other social sciences. It provides students with different approaches to studying political science, and gives him/her bits of the different areas of political studies such as political theory, comparative politics, and international relations and organizations.

10806102 INTRODUCTION TO POLITICAL DEVELOPMENT

The course touches on the different meanings of political development, and it outlines and evaluates different approaches to this concept. Citizenship and free political participation of different political groups and entities are given special emphasis. Political development is discussed in view of human rights and the freedom of individuals and political parties. Discussing the tenets of democracy constitutes a good part of the course. Political development is also viewed as a kind of political change that takes different forms.

10806103 INTRODUCTION TO INTERNATIONAL POLITICS

This course is a study of the theoretical concepts and methods which are used in studying political relations among sovereign states. It deals with local and international environments and their influence on the state's domestic and foreign policy and behavior.

10806104 INTRODUCTION TO INTERNATIONAL LAW AND ORGANIZATIONS

This course is essential toward understanding the recognized international laws that organize relations between states and nations and that govern the

activities of international organization together with their relations with all states. The course looks at the Charter of the United Nations, as well as all related international accords and agreements, such as the Universal Declaration of Human Rights and the Geneva Conventions. The course also enlightens the student on bilateral and multilateral relations, and the exchange of ambassadors and cultural programs.

10806105 WESTERN POLITICAL THOUGHT

This course introduces students to the most important trends and tendencies in Western political thought. It discusses political doctrines developed by Plato, Aristotle, Augustine, Rousseau, Montesquieu, Machiavelli, Locke, Hegel and Marx. The course emphasizes a number of concepts related to politics, such as justice, equality, legitimacy, sovereignty, individualism, freedom, revolution and state. It is essentially a summary of Western political thought from Plato to the present.

10806206 COMPARATIVE POLITICS

This subject studies political systems in terms of their environment, their stability and their socio-political orientations, as well as their structures and functions. It examines in great details the political models of the USA, Britain, France, Russia and China. These systems are compared with those in the Arab and Third World countries.

10806207 POLITICAL PARTIES AND MOVEMENTS IN THE ARAB WORLD

This course is a study of different ideological trends on which political movements and parties have been based. It covers Marxist, Islamic and Pan-Arabism parties. It concentrates basically on Islamic movements that have been playing a major and mounting role in the Arab-Islamic region. It also discusses the roles of Ba'ath party and other local parties. The groups and movements that have taken part in the Arab uprisings will receive special attention.

10806208 CHANGES AND TRANSFORMATIONS OF ARAB POLITICAL SYSTEMS

The Arab Spring represents an unusual multidimensional development in modern Arab politics. It represents changes in Arab political systems, in particular, Arab republic regimes in Tunisia, Libya, Egypt, Yemen, as well as forced changes in Arab monarchies to avoid future political risks. In addition, it deals with changes of how people perceive their political regimes. These changes require examining major changes prior to and in the aftermath of the Arab Spring. It deals with political inputs and outputs and the decision making process. Democratic terminology in the Arab world, its usage and variety of challenges that may affect political stability at economic, social and cultural levels, are thoroughly discussed. The impact of these transformations on the Arab-Israeli conflict will be discussed and students will be assigned to

deal with case studies that require active and meaningful participation.

10806209 THE PALESTINIAN POLITICAL SYSTEM

This course is a study of the Palestinian political system, its form of government, its institutions and its political environment. The course also studies the relationship between the executive and legislative authorities, with a special emphasis on political parties, functionaries, and the decision-making process.

10806210 THE ISRAELI POLITICAL SYSTEM

This course is a comprehensive survey of the Israeli Political System, its institutions and environment and the characteristics of Israeli society. Emphasis is placed on political parties, functionaries and the political decision making process. The course also shows the link between ideology and Israeli political behavior.

10806311 PUBLIC OPINION

This course defines public opinion and evaluates its role in shaping public policies. Methods of measuring public opinion are discussed together with statistical elements. The student is trained on how to seek public opinion according to scientific methods and objectivity.

10806312 SCIENTIFIC RESEARCH METHODS

The purpose of this course is to teach students library skills: the documentation of library materials, the collection of data and data classification and analysis. Furthermore, the course instructs students on the different methods and tools of field research. Each student is trained on how to write a research paper with the direct supervision of the instructor. It is important to teach the student on objectivity and originality.

10806313 APPROACHES TO POLITICAL SCIENCE

This course is an analytical and critical examination of traditional and modern methodologies that are used in the study of political science. Special emphasis is given to historical, behavioral, functional and realistic methods in addition to simulation and game theories. This is related to scientific research methods, but is political science-oriented, and concentrates on the different approaches to the study of politics.

10806314 BASICS OF DIPLOMACY

This course deals with modern and popular diplomacy, its typology and the way it has locally and internationally been practiced. It concentrates on diplomatic methods at all levels, in particular when dealing with embassies, consulates or permanent representatives. The course also deals with the role of diplomacy in executing foreign policies and spreading international peace and stability.

10806315 THE FOREIGN POLICIES OF MAJOR POWERS

This course acquaints the students with the foreign policies of the superpowers: China, the US, France, Russia and Britain. It discusses the aims of each superpower and the principles that guide its foreign policy. The course also discusses the peaceful means that each superpower adopts in its policies, and its military approaches in achieving its goals and realizing its interests.

10806416 PUBLIC POLICIES ANALYSIS

This course discusses public policies that are generally designed to run the public and civil affairs of the people. Theories of decision making are discussed, and the process of that making are put forward. Policies concerning education, taxes, urban and rural development, social welfare public transportation and wealth distribution are discussed.

10806417 ISLAMIC POLITICAL THOUGHT

This course is an investigation into the basic political principles in Islam, according to the Holy Qur'an and Prophetic traditions, as well as according to the independent judgments and interpretations of senior Muslim scholars. The course also discusses the thoughts of traditionalists, theologians and al-Asha'iras. The course will attempt to link the intellectual arguments and debates among Islamic schools of thought with the political philosophical trends in the Muslim world. The course also introduces a new approach in studying Islamic political thought.

10806418 DEMOCRACY AND HUMAN RIGHTS

The tenets of democracy are discussed in this course. The advantages and the shortcomings of democracy are put forward. The importance of human rights is also debated, and the connection between these rights and democracy is demonstrated. The roles of civil societies in enhancing democracy and human rights are discussed too.

10806491 EUROPEAN UNION

This course examines the origin and development of the European Union as well as its official institutions which are in charge of drawing up general policies and taking decisions. The course analyses the relations of the EU with non-member countries and investigates the expansion of the EU along with the challenges surrounding it. It also looks into the future of the EU, particularly in the economic, monetary, security, social and foreign aspects.

10806420 CRISIS MANAGEMENT AND THE ART OF NEGOTIATIONS

This course concentrates on the art of negotiations, the conditions for successful negotiations, and the detailed elements of reaching a negotiated accord. This is coupled with a detailed study of crisis management which

could be part of the negotiation process. The importance of negotiation as a tool toward establishing peace and cooperation is also emphasized. The student receives practical negotiating skills through in-class simulations.

10806421 RESEARCH SEMINAR

By the end of the BA program, the student is required to participate in a research seminar and write a research paper in one of the fields of political science. This seminar includes a quick review of the theoretical elements of scientific research and an application of these skills. The students make presentations in the classroom.

10806422 FIELD TRAINING

This is meant to give the student field training by working in a public institution after he/she has completed 90 credit hours. The student is required to apply the principles and the thoughts he/she has received during his/her years of education. The students remain under the supervision of a department instructor.

10806150 ZIONIST THOUGHT

This course begins with an introduction to Zionist ideology in an analytical and historical context. Emphasis is placed on the Jewish and Western origins of Zionism, the major trends in Zionist ideology and the creation of the Zionist movement. The course also traces the beginning of the Jewish colonization of Palestine and the relationship between Israel and the World Zionist Organization. The course ends with a brief survey of the present Zionist movement and ideology.

10806151 PHILOSOPHY AND LOGIC

This course is essential for elevating scientific and logical thinking. It deals primarily with concepts and philosophical and logical derivations. It concentrates on both traditional and behavioral approaches to political analysis and conclusions building.

10806152 THEORY OF ISRAELI SECURITY

The focus in this course is on Israeli security theory, and starts with the Jewish search for security during the suppressive policies in Europe over the centuries. Next, it gives attention to the Zionist endeavors for the establishment of a Jewish state in Palestine. The course concentrates on the basic principles of Israeli security concerns, mainly, the Israeli efforts to build their own military arsenal and to remain a strong state able to deter the Arab countries individually and collectively.

10806153 POLITICAL SOCIOLOGY

In this course, the strong interrelation between political science and sociology is emphasized. The course studies the social and ethical fabrics of societies

and how they influence the political structure and behavior in the state. The course explains how social and political cultures are interrelated and that none of them could be exposed to change without change in the other.

10806154 POLITICAL AND ECONOMIC DEVELOPMENT

Political development is tied with economic development, and the interrelation between the two factors is so strong to the extent the one could not be achieved without the other. Successful political systems head toward political development but with a special concentration on economic development. The idea of development is meant to achieve progress, and economic development is an important tool in pushing toward political development.

10806255 THE PALESTINIAN QUESTION ON THE INTERNATIONAL STAGE

The status of the Palestinian question in international politics is discussed. The course tries to find out how big powers and the United Nations regard the Palestinian question. It discusses the role of the United States in undermining the question and giving every possible support to Israel to ensure its hegemony over the area. The roles of other powers such as Britain, China and Russia are also discussed.

10806256 CIVIL SOCIETY ORGANIZATIONS

The growth of civil society organizations is studied in this course. The course studies the reasons behind this growth and questions the social and political needs for their establishment, as well as the financial assistance furnished to them. The course will give answers coupled with examples of real achievements of these organizations.

10806257 ARAB WORLD, IRAN AND TURKEY IN INTERNATIONAL POLITICS

The relations that tie the Arab countries, Iran and Turkey are the focus of this course. These areas constitute a major international neighborhood, and its well-being is reflected on the international society. The course also discusses the European and the American influence on the three areas, and gives attention to the rivalry between Iran and the US.

10806258 AMERICAN POLICIES IN THE ARAB REGION

America plays a major role in the Arab countries, a matter that should be studied. This course will take a look at American policies in the Gulf and toward the Palestinians, American economic and military measures against many Arab countries, American support to Arab dictators and tribal regimes, and American policies in view of principle and expedience.

10806259 ISLAM AND THE WEST

The course discusses the Western understanding of Islam, and the image of the Muslims in the Western countries at the public and official levels. The course also discusses Muslims' reactions to the policies of the West towards

Islamic countries, and the development of the feelings of animosity between the two parties. The development of armed jihad against the West is also studied, together with the attacks in New York and other Western cities.

10806260 GEOPOLITICS

This course tries to reach a definition of geopolitics. It discusses the importance of the location of a state, its economic resources, and its demographic impetus. The course also discusses different theories of geopolitics and their applications.

10806361 ARAB NATIONAL SECURITY

This course tries to define Arab national security and to establish a concept of Arab security. The course discusses the importance of oil in this regard, and the Israeli role in threatening Arab security. The course also concentrates on the interest of the big powers to dominate over the Arab oil states, and to weaken other Arab countries that might face Israeli aggression.

10806362 ARAB WORLD ECONOMIES

The course discusses the economic capabilities of the Arab countries, and their economic potential to achieve economic advancement in all reams of life. Also, the course asks the question of enhancing an international Arab status through the economic potential the Arabs have.

10806363 CONTEMPORARY POLITICAL ISSUES

The course concentrates on major international issues, such as economic development, the establishment of peace, resistance and terrorism, globalization, environment, democracy, and the status of women. The student is exposed to these issues thorough analysis of the international trends toward seeking solutions. It also concentrates on the issues that have a direct and special impact on Arab and Islamic countries.

10806464 GLOBALIZATION

In this course, the student studies the phenomenon of globalization under the leadership of the United States. It discusses the importance of scientific and technological advancement in gaining international influence. The course differentiates between objective globalization which is tied with technological development, and subjective globalization which is tied with the will of the US to dominate over the world culturally and militarily.

10806465 THE EUROPEAN UNION AND ARAB-ISRAELI CONFLICT

The role of the Europeans in seeking a solution for the Palestinian question is given thorough attention in this course. The role of the European Union is discussed together with the role of individual influential European states such as Britain, France and Germany. The development of the Arab and European relations are also discussed.

10806466 READINGS IN POLITICAL STUDIES

This course is meant to teach the student political concepts in the English language. English is an international language, and the student is required to complete readings in English, and to participate in classroom discussions.

10806467 APPLIED STUDIES IN POLITICAL SCIENCES

This course aims at helping students to apply what they have studied regarding political models and phenomena in the various areas of political sciences. The students will choose certain applied cases like the practice and work of the Palestinian Parliament, an Arab summit meeting, or a session of the UN Security Council or the UN General Assembly. Visits will be made to enable the students to attend meetings of the Palestinian Parliament or one of its standing committees, in addition to scientific visits to the Palestinian Ministries of Foreign Affairs, the Planning and International Cooperation: Local Government, or the Negotiation Affairs. Finally, the student will have to apply a case study of a related subject.

Staff Members:

Name	Academic rank	University of Graduation
Abdelsattar Qasim	Professor	University of Missouri-Columbia
Saeb Erekat	Associate Professor	University of Bradford-Britain
Saqir Al-Jabali	Assistant Professor	Institute of Arabic Researches and Studies-Egypt
Hasan Ayyoub	Assistant Professor	University of Denver-USA
Ibrahim Abu-Jaber	Assistant Professor	Goethe University-Frankfurt, Germany
Nayif Abu-Khalaf	Assistant Professor	Bradford University-Britain
Othman Othman	Assistant Professor	University of Munster-Western Germany
Farouq Al-Alyah	Assistant Professor	Complutense University of Madrid, Spain

{ for Psychology and Psychological Counseling }

Mission:

The Department of Psychology and Psychological Counseling aims at challenging problems, psychological and social disorders, identifying the psychological needs that should be fulfilled, understood and achieved; developing practical, logical and critical thinking; coping up with the updates in fields of psychological, educational and social services.

Vision:

achieving difference in providing the psychological, counseling and research services; accomplishing psychological awareness and mental health at the local community.

Objectives:

- Providing the local community with specialists who are capable of serving the psychological needs.
- Preventing disorders and psychological and educational problems.
- Adjusting trends towards psychological services.
- Providing graduates with the skills of thinking, scientific research and counseling services.

ILOs:

Students should:

- Have their own theoretical principles in their areas of specialty.
- Be capable of defining and solving psychological problems.
- Be aware of counseling skills
- Be able to conduct research work in the fields of psychology and counseling.
- Be able to build and develop counseling projects that suit every different category.

Requirements	Credit hrs.
University Requirements	18
Department Requirements	89
Department Electives	15
Free Courses	4
Total	126

The department compulsory requirements: 87 credit hours

Course #	Course Title	Credit	Prerequisites
10805100	Introduction to Psychology	3	-
10805101	Guidance and Psychological Counseling	3	-
10805102	Psychology of Growth	3	10805100
10805103	Physiological Psychology	3	10805102
10805104	Principles of Mental Health	3	10805100
10805205	Personality Psychology	3	10805100
10805206	Theories of Psychological Counseling	3	10805100
10805207	Mental Disorders and Their Diagnosis	3	10805103
10805208	Social Psychology	3	10805100
10805209	Psychological Counseling Skills	3	10805206
10805210	Computer Statistical Methods	3	-
10805211	School Counseling	3	10805206
10805212	Educational Psychology	3	10805100
10805313	Psychological Measurement	3	10805210
10805314	Experimental Psychology	3	10805210
10805315	Cognitive Behavioral Therapy	3	10805206
10805316	Group Counseling	3	10805206
10805317	Contemporary Issues in Psychological Counseling	3	-
10805318	Students' Problems and Their Therapies	3	10805206
10805319	Psychological Addiction	3	10805207
10805320	Media Psychology	3	10805208
10805421	Family Counseling	3	10805206
10805422	Career Counseling	3	10805206
10805459	Religious Counseling	3	10805206
10805423	Skills in Dealing with Psychological Pressure	3	10805206
10805424	Research Methodologies in Counseling and Guidance	3	10805313
10805425	Psychological Tests	3	10805210
10805426	Counseling Field Training 1	3	10805316+ 10805211
10805427	Counseling Field Training 2	3	10805426
10805428	Applied Graduation Project	3	10805427 or Syncro.
	Total		87

Department Elective courses: 27 credit hours.

The student chooses 12 credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10805151	Psychology of Play	3	-
10805152	Adolescence Psychology	3	-
10805253	Introduction to Special Education	3	10805100
10805254	Cognitive Psychology	3	10805100
10805255	Criminal Psychology	3	10805207
10805356	Crises Guidance	3	10805206
10805357	Counseling for Special Needs	3	10805206
10805458	Clinical Psychology	3	10805207
10805460	Counseling Expressive Activity	3	10805206
10805459	Religious Counseling	3	-

Course Descriptions:

10805100 INTRODUCTION TO PSYCHOLOGY

This course aims to introduce psychology in terms of concept, objectives, fields and methods of research. In addition, it deals with several psychological subjects that interest interns of psychology, such as: concentration, memory, conflict, and motivation. It also provides an overview of several psychological theories, such as: analytics, behaviorism, cognitivism, Gestaltism, and Rogerism.

10805101 GUIDANCE AND PSYCHOLOGICAL COUNSELING

This course aims to introduce psychological counseling in terms of: objectives, methods, presuppositions, principles, theories, fields, approaches, and the means of data collection. It also discusses the process of counseling, guidance and psychological counseling programs in the schools, some students' school problems (including absences, lack of motivation, school violence, test anxiety), and the counselor's role in dealing with these problems).

10805102 PSYCHOLOGY OF GROWTH:

This course looks at growth in terms of concept, development, and its physical, mental, social, and emotional dimensions. It also covers the principles of growth - its physical and psychological developments, the extent of the impact of its attributes and developmental characteristics on genetic factors, family and social upbringing; and furthermore, the important relationship between the development of important manifestations of growth and family, environment and school formation in various stages of life. The course also offers a range of default training cases related to various aspects of growth, the developmental changes that occur on individuals in different ages, and the characteristics of some developmental stages such as adolescence, maturity and senescence.

10805103 PHYSIOLOGICAL PSYCHOLOGY:

This course covers the different functions of the human body and their relationship with human behavior. Students learn about the nervous system (the brain and spinal cord), as well as the endocrine glands and the role of each system on a person's emotional and psychological situation. Furthermore, the course provides an adequate explanation of the sensory organs functions - namely, eyesight, hearing, skin sensations, taste, smell, etc. In addition, the course addresses some physical problems that are rooted in psychological causes, the psychological methods that can be used to alleviate

psychological pressures, and dealing with psychophysical problems. The practical side of this course includes holding visits and hosting instructors of the Faculty of Medicine to introduce the physiological functions of organs, and understanding the nature of the psychological and physical sides of the human being.

10805104 PRINCIPLES OF MENTAL HEALTH:

This course addresses basic themes in the field of mental health and its importance and role in our daily lives, the adaptation and building of mentally healthy personalities, the prevention of mental and psychological disorders, helping students to communicate with mental health institutions to receive special training in the fields of mental health, and the areas of family, school and community.

10805205 PERSONALITY PSYCHOLOGY :

This course is designed to introduce the personality in terms of concept, definition, and theory, as it also discusses the factors and indicators related to forming the personality and giving it specific traits. The training aspect in this course includes training students on using and correcting some personality tests, such as Cattell and Eysenck.

10805206 THEORIES OF PSYCHOLOGICAL COUNSELING:

This course addresses theory in the field of psychological counseling in terms of historical background, development and basic principles, the most important therapeutic and counseling methods emanating from each theory, and the strengths and weaknesses of each theory. It also discusses some cases and their treatments according to the theories of psychological counseling and treatment. In this course, students receive training on some counseling cases through role playing, displaying remedial audio and visual recordings and discussing them according to theories of psychological counseling, such as Stan's and Suad's clinical case.

10805207 MENTAL DISORDERS AND THEIR DIAGNOSIS:

This course covers various mental and psychological disorders such as personality, anxiety, sleeping, eating, and schizophrenic and bipolar disorders; and the classification, prevention and treatment of disorders. The course trains students how to use global manuals such as the Diagnostic and Statistical Manual DSM-IV and the International Classification of Diseases (ICD) produced by the World Health Organization.

10805208 SOCIAL PSYCHOLOGY:

This course covers subjects in social psychology - its objectives and fields, research methods, social upbringing and growth and change of trends, attraction, violence and aggression, compliance, obedience, delinquency, social impact and influence, leadership, group dynamics, and environmental

psychology impacts. This course trains students to conduct surveys and social studies, including special studies examining trends and tendencies and community problems.

10805209 PSYCHOLOGICAL COUNSELING SKILLS:

This course trains students on basic skills necessary for practicing counseling and on master advisory interviews skills through role playing and displaying visual and auditory recordings - beginning with establishing the advisory relationship, attentive listening skills, clarification, showing feelings and attendance behavior, summarization skills, posing questions skills, confrontation, explanation, skills of motivation and challenge, behavioral problems identification, goals identification; and ending with dealing with hesitation, resisting the counselor, ending the counseling relationship, evaluation and referring. On the other side, the practical aspect of this course includes practical training for these skills through role playing, displaying remedial sessions which contain using these skills in the fields of individual and group and family counseling.

10805210 COMPUTER STATISTICAL METHODS

This course covers basic concepts in descriptive, analytical statistics, such as parametric tests hypotheses related to the arithmetic mean, and the analysis of variance; furthermore, the course introduces some non-parametric tests and their uses in the educational and psychological fields and their software applications. The course aims to train students on preparing reports for inferential statistics using the computer.

10805211 SCHOOL COUNSELING:

This course deals with school counseling in terms of: the counselor's role and responsibility, the advisory services the school counselor offers, and the procedures and advisory programs the school counselor applies. The course trains students on establishing, developing and applying advisory programs that address school problems, such as a decrease in academic achievement, violence, dropping out of schools, exam anxiety, and lack of study motivation.

10805212 EDUCATIONAL PSYCHOLOGY:

This course describes educational psychology and its relationship to general psychology, how to apply behaviorism and cognitivism concepts in the process of education that will facilitate the process of learning, the appropriate atmosphere for the process of learning, education of slow learners, disabled and talented children, and the necessary capacities to complete and measure the process of teaching and evaluate the process of learning and teaching.

10805313 PSYCHOLOGICAL MEASUREMENT:

This course includes reviewing major concepts in measurement and statistics, introducing the classical measurement theory. It also addresses

the psychometric properties of tests and their relationship to the theory of measurement; furthermore, the course trains students on psychological measurement in the educational process and checking on the quality of the psychometric properties for accurate measurement.

10805314 EXPERIMENTAL PSYCHOLOGY:

This course deals with the methods of laboratory and field psychological experimentation in the fields of psychology and the basic elements for the psychological experience. In addition, students are trained on holding memory, reaction time, perception, and doing field experiments, including computerizing and analyzing their results.

10805315 COGNITIVE BEHAVIORAL THERAPY:

This course is designed to introduce the principles, foundations and steps of behavioral therapy, and to study the principles and foundations that cognitive therapy is based on in its different aspects. The course addresses studying therapeutic cognitive methods, such as reinforcement, deletion, progressive sensitivity reduction, assertiveness training, saturation, and aversion therapy. Furthermore, the course addresses the various cognitive methods in treating the problems of anxiety, depression and tension. The practical aspect includes a set of therapeutic video tapes on the cognitive behavioral techniques, and the modeling of these techniques is applied to many of the behavioral cognitive problems, such as exam anxiety, social anxiety and irrational thoughts.

10805316 GROUP COUNSELING:

This course addresses the nature of group counseling, and how to organize the advisory group and leadership patterns; furthermore, it helps students to set and develop group advisory programs which address the different advisory categories.

10805317 CONTEMPORARY ISSUES IN PSYCHOLOGICAL COUNSELING:

This course deals with contemporary issues in psychological counseling in its both theoretical and practical aspects, including the methods and theories of modern psychological counseling such as narrative therapy, brief therapy, feminist therapy, positive psychology, and technology and psychological counseling; in addition, the course presents and discusses research papers on contemporary issues and areas.

10805318 STUDENTS' PROBLEMS AND THEIR THERAPIES:

This course includes an introduction on behavioral change, the main steps in behavioral change programs, and the behavioral, academic, and educational problems students face and their methods of dealing with them. The practical aspect, on the other hand, includes helping students to set and develop advisory programs for problems in the schools, such as dropping out of school, lack of motivation, nail-biting, nocturnal enuresis, and other problems students face at schools.

10805319 PSYCHOLOGICAL ADDICTION:

This course addresses the concept, reasons, and different types of addiction - namely, drugs, alcohol, smoking, and medicine, and the extent of the impact of these materials on the human behavior physically, psychologically and socially. In addition, the course discusses the methods of addiction diagnosis, its manifestations, and methods of prevention and treatment. The course's practical aspect includes training students on setting psychological counseling programs that deal with counseling services and prevention, addicts' rehabilitation, and applying them in the centers and institutions of addiction treatment.

10805320 MEDIA PSYCHOLOGY:

The aim of this course is to identify media psychology applications, such as publicity, psychological warfare, and spreading community awareness; furthermore, the course covers applications of psychological theories in the fields of media - particularly, the behavioral and cognitive theory. The practical aspect of this course is displayed through coordination with the Faculty of Media and An-Najah FM, preparing and presenting community awareness psychological programs, psychological counseling and the issues of interest to the local community.

10805421 FAMILY COUNSELING:

This course covers the stages of family development, the characteristics of each stage, the psychological and social problems associated with each stage, and the most important theories that address psychological problems from the family perspective: the psychodynamic theory in family guidance and therapy, the behavioral theory in family guidance and therapy, the rational emotional theory and theory of systems. Students are trained on setting and developing family advisory programs emanating from theories of psychological counseling, networking with family care and protection institutions to apply these programs, such as: enhancing the family communication programs, social programs to reduce conflicts, and family problems.

10805422 CAREER COUNSELING:

This course introduces career counseling in terms of definition, principles, importance, the different needs that led to its emergence, theories of selection, adaptation, and professional orientations, capabilities, readiness and different counseling programs. In addition, students learn the methods of guiding and career counseling which help them choose careers that suit their abilities and tendencies on the one hand, and conditions, circumstances of the profession, and community's needs on the other. Students in this course are trained on using professions' orientation tests and setting different career counseling programs, such as special programs to get rid of work pressures, or advisory programs for those who have suffered work injuries, the unemployed, and

retirees; and coordinating with the concerned centers and institutions to apply some of these programs.

10805423 COUNSELING FIELD TRAINING 1:

This course is divided into two sections: the theoretical section, which aims to provide students with individual counseling skills, group counseling and guidance, building and developing counseling programs and remedial intervention programs. The practical section, on the other hand, aims to train students on the methods and counseling techniques and follow them under supervision, applying what they have studied to 200 practical hours spent in local schools under the supervision of course instructor and in coordination with the school's psychological counselor.

10805424 SKILLS IN DEALING WITH PSYCHOLOGICAL PRESSURE:

This course introduces psychological pressure in terms of types and reasons, social, psychological, physical and emotional implications of the psychological pressures, personality relationship with the psychological pressures, different theories that try to explain psychological pressures such as Seeley's, Lazarus and Cannon theories, skills in dealing with psychological pressures (for instance, creative problem-solving, building knowledge, training to relax, training to conduct assertive behavior, Yoga, joke and humor therapy, music therapy, social skills, and time management skills).

10805425 RESEARCH METHODOLOGIES IN COUNSELING AND GUIDANCE:

This course discusses the nature and purpose of research, reviewing educational literature, methods of data collection, different research methodologies, the historical, survey, case study, feedback studies, experimental approaches, research designs, pre-experimental designs, semi-experimental designs, and real experimental designs. The student is asked to prepare a research proposal, taking into account the instructions and accepted research rules.

10805426 PSYCHOLOGICAL TESTS:

This course covers various psychological tests in terms of characteristics, types, sincerity, reliability, and how to use them in the various psychological fields. The course also trains students on building and computerizing psychological tests, using tests in the fields of psychology and guidance, such as personality tests, IQs tests, tendency tests and career selection.

10805427 COUNSELING FIELD TRAINING 2:

This course applies the principles students learned in the Field Training 1, Group Counseling, and Special Groups Counseling course; students are sent to counseling and psychotherapy centers, the Red Crescent, and non-governmental centers for the individual and group intervention procedures, guidance sessions amounting to 200 training hours. There will also be supervisory meetings, and weekly trainings with students for two hours a

week devoted to discussing the cases, video treatments, and reviewing reports students prepare and providing them with the appropriate feedback.

10805428 APPLIED GRADUATION PROJECT:

This course includes the application of the principles taught in the scientific research courses, psychometrics, psychological tests, and contemporary research issues in counseling. The teacher in this course helps students to choose research topics in the areas of psychology and counseling; the research topics are discussed collectively in front of a specialized committee of the faculty so that the faculty and psychological counseling programs may benefit from the results.

10805151 PSYCHOLOGY OF PLAY:

This course discusses the nature of play, its historical evolution, educators' (such as Froebel and Pestalozzi) interest in its educational importance, exposure to psychological viewpoints of play behavior as it is explained in Freud's, Bruner's, Piaget's and Ericsson's theories, and the importance of play in kindergarten, and adopting it in the primary education core for children before school. The course deals with the methods and mechanisms of employing play in the counseling process, the different models of play used in the counseling process; furthermore, the practical aspect includes helping students to develop psychological counseling programs based on playing.

10805152 ADOLESCENCE PSYCHOLOGY:

This course covers teenagers' personalities, physical, emotional, mental, and cognitive changes which occur in adolescence; in addition to the stages of adolescence, the characteristics of each stage, and their relevance to the stages of basic, secondary and university education, with a focus on the demands of each stage, as well as the psychological and social adolescence problems.

10805253 INTRODUCTION TO SPECIAL EDUCATION:

This course introduces students to individuals with special needs with a focus on the different categories of disabilities, the nature and forms of disabilities in terms of causes and characteristics, and the best ways and means of providing services for these disabilities which benefit the maximum degree of the capabilities of individuals of special needs. The practical aspect of this course includes distributing students to care and rehabilitation centers for individuals with special needs to become aware of the counseling and rehabilitation services provided in these centers.

10805254 COGNITIVE PSYCHOLOGY:

This course discusses the cognitive processes of information and knowledge in each individual's cognitive system; it addresses introducing this science and its subjects, attention, perception, remembrance, forgetfulness, problem solving and strategies, gaining experience and the language of humanity in terms of acquisition, evolution and understanding.

10805255 CRIMINAL PSYCHOLOGY:

This course studies the psychological, biological, social, and environmental factors of criminal behavior; the psychology of the judge, attorney general, investigator, accused, victim, witness, defendant, and lawyer; and then the modern psychological means of investigation, instincts and imbalances, especially sexual and mental instincts, psychological and mental retardation, and their relationship to criminal behavior; and the impact of the psychological diseases in the criminal responsibility. The practical aspect entails student visits to rehabilitation and care centers, care for juvenile delinquents, and applying some counseling services in the criminal behavior.

10805356 CRISES GUIDANCE:

This course introduces students to the concept of the counseling process and strategies of using it in dealing with crises, and it also includes the patterns and stages of crises in the field of education, the application of crises (divorce, death, sickness, fatal diseases, and suicide), the therapeutic interventions emanating from psychological counseling therapies which could be used in dealing with the crisis, in addition to training on time management and dealing with crises preventively and indicatively.

10805357 COUNSELING FOR SPECIAL NEEDS:

This course studies groups of individuals with special needs, in terms of the nature of their problems, the causes and symptoms of their disabilities, and counseling methods and indicators that depict the possibility of evolution of problems for these groups, of which focus is being given to alcoholics, drug addicts, the elderly, abused children, juvenile delinquents, street children, homosexuals, school violence groups, cancer patients, chronic diseases, divorces, taunted women, the agonized, children in charity institutions, and spinster women. The practical aspect of this course includes training students on building counseling programs for category of the advisory categories.

10805458 CLINICAL PSYCHOLOGY:

This course focuses on the diagnosis of emotional and mental disorders, their treatment and prevention, and training students on using various psychological therapies. It also addresses the clinical categories diagnostically, preemptively and therapeutically, distributing students among clinical centers to acquire special training skills to deal with clinical cases and psychological tests, such as the MMPI test, and Wechsler and Binet intelligence tests.

10805459 RELIGIOUS COUNSELING:

This course is interested in the spiritual and religious aspects of those who ask for advice, helping them get rid of the psychological, social and family problems through strengthening the spiritual and religious aspects, differentiating between religious preaching and religious counseling, and

the relationship between religion and self-actualization, religious guidance methods, namely, confidence and patience, belief of fatalism, and searching for the reason of existence, in addition to some theories and counseling models based on the religious aspect of therapy.

10805460 COUNSELING EXPRESSIVE ACTIVITIES:

This course addresses the methods of using expressive activities in counseling, such as drawing, music, clay, drama, novel, and expressive writing; in addition to the psychological theories of each of these activities, such as the Adler, Gestalt theories; and cognitive and behavioral expressive activities. The practical aspect of this course includes training students on building and developing counseling programs that are based on expressive activities to deal with various counseling problems, such as trauma, depression, loss, and phobias.

Faculty members:

Name	Academic Rank	University of Graduation
Abed Mohammad Assaf	Professor	Ohio University
Ali Adel Shakaa	Associate Professor	Ain Shams University
Fayez Azeez Mahameed	Assistant Professor	University of Jordan
Hasan Mohammad Tayyem	Assistant Professor	University of Jordan
Abdulkareem Mohammad Ayoub	Assistant Professor	Yarmouk University
Ali Abduljaleel Abu Hamdan	Assistant Professor	University of Jordan
Ma'roof Abdulraheem Al-Shayeb	Instructor	Ain Shams University
Amna Rady Al-Barq	Instructor	Illinois University
Muna SaadAllah Sha'th	Instructor	An-Najah National University
Fakher Nabil Al-Khalili	Instructor	Yarmouk University
Shadi Khalil Abu-Alkbash	Instructor	Yarmouk University
Filistine Mohammad Nazzal	Instructor	Yarmouk University
Maha Mohammad Ya'esh	Instructor	Cairo Demographic Centre CDC
Ein'am Mustafa Sabri	Instructor	An-Najah National University

{ Department of Sociology and Social Work }

The Vision:

The department aims to ensure that An-Najah National University is highly respected for what it offers throughout the world's higher education system, and that it becomes a leading center of scientific research and contributes positively in serving the needs of the Palestinian Society for sustainable development.

The Mission:

The Department seeks to promote the preparation and training of highly effective and professional graduates who will become the base for running and administering all aspects of social and societal activities in the social agencies of Palestine. It will also lead to the creation of a vast knowledge base and the preservation of our cultural, civil, and religious heritage.

The Goals:

1. The development of a long term strategic plan to provide the professional and trained work force for the local market.
2. The development of a highly effective and professional academic staff.
3. The improvement of the level of scientific and intellectual educational capabilities that will match the local, regional and international standards.
4. The improvement of the educational and research qualities of the students in the Department.
5. The activation of the Department's role in serving the entire society and solving its problems.

Department's Educational Outcomes

1. Perfecting theoretical and practical knowledge of the research methods, practices and analysis of the social cases and forms of interaction that we live through and the complex social structure.
2. Applying the scientific methods of research and analysis on use of social work practices objectively, professionally and following the ethical rules and provisions of service.
3. Enhancing the graduates' professional character and providing a sense of professionalism, strong commitment to service and self discipline.
4. Entering the job market with a high and genuine degree of preparation, commitment, participation and will to serve the Palestinian Society.

The New Curriculum for the Sociology and Social Work Department

University Compulsory Requirements:

Students should pass all the courses in this group, 18 credit hours.

Course No.	Course Title	CH.
11000101	Islamic Education	3
11000102	Arabic language	3
11000103	English Language 1	3
11000325	English Language 2	3
11000105	Palestinian Studies	3
11000117	Communication and Leadership Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1

Free Courses:

Students should pass 4 credit hours within the free courses the University provide.

Department Compulsory Requirements:

Course No.	Course Title	CH.	Prerequisites
10816111	Palestinian Society	3	-
10816112	Introduction to Social Work	3	-
10816113	Demography and Sociology	3	-
10816114	Introduction to Sociology	3	-
10816115	Arab Society	3	-
10816116	Introduction to Psychology	3	-
10816220	Methodology of Scientific Research	3	-
10816221	Social Psychology	3	-
10816222	Social Statistics	3	Introduction to Social Service 10816112
10816223	Individual Service	3	-
10816224	Fields of Social Work 1	3	-
10816225	Field Work 1	3	-
10816226	Immigrants and Forced Migration	3	-
10816330	Social Theories	3	-
10816331	Political Sociology	3	-
10816332	Applied Sociology	3	-
10816333	Community Work	3	Individual Service 10816223
10816334	Rehabilitation and Theories of Therapy	3	-
10816335	Management of Social Institutions	3	-
10816336	Fields of Community Service 2	3	Fields of Community Service 1 10816224
10816337	Field Training 2	3	Field Training 1 10816225
10816440	Local Community Service	3	Social Work 10816333
10816441	Social Politics	3	-
10816442	Social Legislations	3	-
10816443	School Counseling	3	-
10816444	Youth and Juveniles' Care	3	-
10816445	Graduation Project	3	Methodologies of Scientific Research 10816220

Department Elective Courses: 21 credit hours

Course No.	Course Title	CH.	Prerequisite
10816150	Sociology of Social Stratification	3	-
10816151	Social Problems	3	-
10816152	Economic Sociology	3	-
10816153	Principles of Philosophy and Logic	3	-
10816260	Anthropology	3	-
10816261	Rural and Urban Communities	3	-
10816262	Social Planning	3	-
10816263	Women and Society	3	-
10816264	Criminology and Delinquency	3	-
10816265	Sociology of Literature	3	-
10816266	Developmental Psychology	3	-
10816370	Industrial Sociology	3	-
10816371	Family Sociology	3	-
10816372	Special Needs of Groups	3	-
10816373	Mental Health	3	-
10816480	Sociology of Religion	3	-
10816481	Medical Social Work	3	-
10816482	Social Work and Human Rights	3	-
10816483	Community Care	3	-

Free Courses: 4 credit hours

Course #	Course title	Credit hours	Prerequisite
7303433	Pharmacology and Community	2	-
10311197	French Language	2	-
11000131	Geography of Palestine	2	-
11000142	Family System in Palestine	2	-
11000143	Principles of Islam	2	-
11000144	Biography of the Prophet Mohammad PBUH	2	-
11201101	Introduction to Musicology	2	-
11201103	Palestinian Music Folklore	2	-

Courses Description:

10816111 PALESTINIAN SOCIETY

This course deals with the historical development of the Palestinian community in light of the political changes, and the extent of their impact on the structural formula of the society; discusses in details the different social systems: demographic, family, rural, urban, and nomadic, as well as the economic formula; and highlights the Palestinian community contemporary issues and future, in light of the political inconsistency.

10816112 INTRODUCTION TO SOCIAL WORK

This course introduces social work and its concept as a science, profession, the role of the sociologist in the methods of the social work (Individual service, group service, and community work). It also focuses on the principles of social work, its philosophy, fields of interest, date of beginning, and illustrates the elements of social work and its relationship with the other sciences, along with visits on the spot.

10816113 DEMOGRAPHY AND SOCIOLOGY

This course introduces the population, its importance in the social structure, frames and theories that explain the demographic phenomenon, and linking that with the issues of social change. The course also addresses the major demographic indications; how to measure them, along with the analysis of the future destinations and circumstances, and linking the demographic issues with the social and developmental ones.

10816114 INTRODUCTION TO SOCIOLOGY

This course studies the key concepts in sociology, such as phenomena, social attitudes, operations, systems, structures, and organization; and it addresses some of the social scientists, its founders and pioneers.

10816115 ARAB SOCIETY

This course provides an overview on the social institutions and the social change in the contemporary Arab world, Arab family, kinship systems, class systems, and ideology, with focus on the issues of modernization and growth.

10816116 INTRODUCTION TO PSYCHOLOGY

This course introduces some of the key concepts in psychology-which is the scientific study of the attitude and thought. It studies the subjects of realisation, memory, learning, communications, persuasion, religion, decision-making process, arts, fictional literature, love, hunger and dreams.

10816220 METHODOLOGY OF SCIENTIFIC RESEARCH

This course introduces the methodologies applied in the field of social

research, in terms of nature, areas, goals, and tools implemented in the scientific research, with the focus on the practical applications in light of designing the research plan, and upgrading students' paper writing and surveys skills.

10816221 SOCIAL PSYCHOLOGY

This course covers the others and self-critical point of view, and this is by examining urgent issues in a complicated and rapidly changing world in light of the classical and modern theories. The course includes various topics such as the social and personal relations, emotions, human body, personality, conflict, delinquency, and group operations; in addition, it represents the principles of research in social psychology.

10816222 SOCIAL STATISTICS

This course addresses the use of statistics in the social research in terms of the collection of statistical sampling surveys and tests assumptions. It also deals with data decoding into computer programmes and analysis within packages as well as the representation of statistical data automatically.

10816223 INDIVIDUAL SERVICE

The course aims at introducing students to the individual service as the first and basic method of work in the social service, and the meeting point with the other methods, the skills, information, major principles of the social factor in individual service, and then the nature of the individual problems; their assets, of which it includes the family treatment and care.

10816224 FIELDS OF SOCIAL WORK 1

This course covers research in some areas of social service such as: adolescents, youths, old people, and war victims, and it conducts research in all respects: the concept of the defined area, its definitions, importance, philosophy, role of social service, and role of the social specialist. The instructor will decide on the appropriate material that goes along with the Department curriculum and meets students' needs.

10816225 FIELD TRAINING 1

This course aims to identify a number of institutions of social action in order to provide students with practical skills and experience that students themselves employ during their participation and observation of its mechanism and the manner in which the institution works; provide the knowledge on the specialist's role in the institution, its services, policy, their suitability to the needs of the target audience, and the needs of the community. Student will complete 60 hours of actual training.

10816226 IMMIGRANTS AND FORCED MIGRATION

This course aims to introduce students and professionals to the phenomenon

of migration as a global phenomenon in terms of historical development of the movements of asylum, its reasons experience, and the psychological and social consequences that accompany refugees in camps.

10816330 SOCIAL THEORIES

This course aims to illustrate the concept of social theory, the most important pioneers of the social thought, such as: Ibn Khuldoun, Count, Spenser, Marx, Parsons, and Max Weber, and then explains the social mechanism which the classical social theories contributed with to the formation and development of Sociology. The course also addresses the theory in its evolution from the classics to the constructive trend, passing through the professional and social interaction theories, and the factors that led to change with reference to trends, modernized conflicts, and behavioral exchange.

10816331 POLITICAL SOCIOLOGY

The course studies the relationship of the social political authority with the society; the basic concepts in the political sociology such as (the elite, the Force, power, democracy, charisma,) and analyses sources of power in society, in addition to dealing with the subject of political movements and phenomena.

10816332 APPLIED SOCIOLOGY

This course has been designed to provide students with an opportunity to exercise on the applications of sociology in practical life, in order to provide learners with practical experience to use theory, concepts and approaches in Sociology and how to determine the nature of the problems and issues of different social roots and consequences, as it also seeks practice to describe scientific and practical solutions of social issues and present a privileged view from of a specialist in sociology.

10816333 COMMUNITY WORK

The course aims to clarify the basic curricula in community service and educate students on its objectives and principles and the role of social specialists. It also aims to teach students how to tackle social measurement in community service.

10816334 REHABILITATION AND THEORIES OF THERAPY

This course aims to provide students with the basic knowledge on disabilities, their types and effects; the elementary skills to help the handicapped in overcoming their disabilities, and rehabilitate them in accordance with their special circumstances so that they become effective and active participants in their community.

10816335 MANAGEMENT OF SOCIAL INSTITUTIONS

This course aims to introduce management, its importance and goals in the social institutions; the functions of planning, organizing, employment, directing, coordinating, writing reports, financing, budgeting, leadership, decision-making, assessing, and surveillance; the concept of managerial communication in terms of defining the process of communication in the social institutions, its methods, tools, fundamentals of successful and effective

communication. The course also addresses motivation and stimulation, and their different processes and theories.

10816336 FIELDS OF COMMUNITY SERVICE 2

This course will tackle the continuity of research in the fields of community service which were not covered in the Fields of Community Service 1, in accordance with the Department and students' needs.

10816337 FIELD TRAINING 2

This course works with individual cases, and aims to provide students with the skills in building and applying therapeutic plans, assessing the results and establishing a follow-up plan to continue with the client and his/her family. It also aims to provide students with the practical skills that enable them to put up a community work programme to treat the social problems in their living area, so that they can master the necessary skills that help them along with the supervision of the professional expert in the institution where they receive their training to build up plans or projects through which they can provide services to their local communities. Students will accomplish 60 actual work credit hours.

10816440 LOCAL COMMUNITY SERVICE

The course introduces the different models of community organization, focusing on the role of the local groups to identify the needs and necessary social services appropriate for their communities; teaching one of the local community issues and the different methods that can be applied to resolve them through the organization of society; and clarifying the organization of society.

10816441 SOCIAL POLITICS

The course aims to introduce students to the basic concepts of strategic Social Planning, development and the interrelationships between these concepts; provide them with knowledge of foundations of social planning and its importance in the overall development; identify the goals and objectives of social development and fields of achievement; illustrate the measurement indicators and clarify the imperatives of social planning and requirements for successful operations of social development and its activities and programmes.

10816442 SOCIAL LEGISLATIONS

The course addresses the concept of social development and human rights and legislation; the Social Legislation of different population groups and their analysis, such as legislation concerning women, children, the disabled and its analysis. It also deals with the course of legislation which aims at achieving social justice and society welfare.

10816443 SCHOOL COUNSELLING

The course aims to introduce students to the educational processes and problems of adaptation; study the appropriate pedagogical conditions for sound upbringing and how to deal with the students' problems in their schools, both among themselves, with their teachers or with school system, and introduce them to duties and tasks of the school social specialist and the importance of this new work for young people and the community.

10816444 YOUTH AND JUVENILES' CARE

This course aims to enable students to learn the psychological and social aspects, which affect the human personality in its inception in adolescence; provide them with outreach and therapeutic skills to follow up on preventive and curative services, which are provided for juveniles and young people. This course also aims to educate students on the concept of youth and juveniles' care and its importance in the development of the society.

10816445 GRADUATION PROJECT

This course is a practical application of the use of scientific research skills from selection of the research to the documentation process of references and resources; this requires a joint effort between the researcher and supervisor where a specialized committee discusses the researches.

10816150 SOCIOLOGY OF SOCIAL STRATIFICATION

The course addresses the social classes in their genesis and development, stratification structure of the capitalist, socialist and developing countries with a focus on the study of the characteristics of the social structure of the Arab countries.

10816151 SOCIAL PROBLEMS

The aim of this course is to introduce the concept of social problems; its nature, evolution and significance, causes, results and reflections on the social construction, psychological aspects, as well as dealing with some important problems and their analysis such as poverty, delinquency, immigration, divorce, and leisure.

10816152 ECONOMIC SOCIOLOGY

This course examines the economic phenomena such as property rights, labor markets and enterprises through the use of the tools of sociology with the emphasis on social relations and social institutions. It also examines the role of social and economic rights, the social responsibility, social welfare, eating and consumption, advertisement and budget between gender and innovating economy and knowledge.

10816153 PRINCIPLES OF PHILOSOPHY AND LOGIC

This course introduces the concept and evolution of philosophy, studying scripts of famous philosophers, and emphasis on the philosophical logic in its capacity as an input to the study.

10816260 ANTHROPOLOGY

The course aims to develop a better understanding of similarities and differences between human beings in different societies and cultures through the examination of the concept of culture, political systems, economic exchanges, relations of kinship, forms of religious belief and worship in the world. In addition, it discusses the anthropologist research in its unique kind and challenges.

10816261 RURAL AND URBAN COMMUNITIES

The course includes social development and the pervasion of urban phenomenon, comparison between rural and urban communities in various combinations; population, economic and social structures as well as differences in construction, patterns and social problems for each of them.

10816262 SOCIAL PLANNING

This course addresses the importance of planning, its various elements, requirements, objectives, issues, priorities and the social planning bonds with comprehensive and sustainable development as well as clarifying the theoretical frameworks in the planning process.

10816263 WOMEN AND SOCIETY

This course examines the roles of women in society through different cultures and times; discusses the practices of a variety of women's political, economic, social, cultural, religious and moral contributions; and critically examines Arab women contributions and introduces students to the basic concepts of gender and feminism.

10816264 CRIMINOLOGY AND DELINQUENCY

This course introduces criminology with the focus on the concepts of delinquency and crime from the social perspective and then studies the well-grounded theories of the criminal phenomena in the past and present, the crime research methodologies, in addition to introducing students to the various delinquent behavioural patterns, crimes' patterns and differences, and the extent of their deployment and their implications.

10816265 SOCIOLOGY OF LITERATURE

This course covers the study curricula of literary text sociological analysis, and identifies the intended social moral of any literary text.

10816266 DEVELOPMENTAL PSYCHOLOGY

This course examines the human development through life from infancy, childhood and adolescence up to adulthood and ageing; the stability and change in our physical, cognitive, social and emotional development; and discusses the similarities and differences in the development of individuals in different cultures.

10816370 INDUSTRIAL SOCIOLOGY

This course shows the important issues in Industrial sociology, such as formation of labor, attitudes toward work, functions of associations, industrial disputes and administrative systems. The course also examines the communication between workers and managers, the different aspects of behavior between the workers, and the impact of globalization on the Future of Work

10816371 FAMILY SOCIOLOGY

The course provides an analytical study of family and kinship from the historical developmental perspective, and includes Arab family elements, its role, functions, changes and problems that challenge it; the family's special systems such as marriage, divorce, pregnancy, rights and duties of the family members; and comprehensive social theories and theories of change and their impact on the family.

10816372 SPECIAL NEEDS OF GROUPS

This course covers the concept of special groups, which include (delinquent juveniles, prisoners, war victims care, beggars, drug addicts, and talented) needs in the context of the social service, as it also clarifies the concept of social defense policy fundamentals, which is linked to special categories and its relationship to social development.

10816373 MENTAL HEALTH

This course critically examines the use of the term “mental health” and examines the symptoms and treatment of cases and disorders Linked to mental health such as depression, schizophrenia, obsessive compulsive and suicide; it also challenges the medical model for mental health and adoption treatment through medicines and compares it with the concepts in the field of health psychology.

10816480 SOCIOLOGY OF RELIGION

This course studies religion as a social phenomenon, its historical evolution, humans' awareness, religious institutions, and rituals, social functions of religion in social organization with special attention on the role of Islam in social, cognitive and Arab society.

10816481 MEDICAL SOCIAL WORK

This course covers research in the area of application of the social service in the medical field and its applications, philosophy, objectives and the role of a social specialist with patients and their families and medical staff in addition to management in medical institutions and professional skills needed.

10816482 SOCIAL WORK AND HUMAN RIGHTS

This course covers the concept of human rights and its importance, and aims to identify the concept of social work based on human rights and its practices in various areas.

10816483 COMMUNITY CARE

This course provides an introduction to community care in the home, hospitals, clinics and doctors in the community-based and residential framework; discusses the cases of receiving assistance and work in community care services; examines the social and health care and their applications in different social sectors and develops practical skills in the area of social welfare.

Staff Members:

Name	Academic Rank	University of Graduation
Asaad Zuheir Taffal (Scholar)	Instructor	Birzeit University
Maher Khalid AbuZant	Assistant Professor	University of Wales
Faysal Abd Za'noon	Assistant Professor	Glasgow University
Omar Ayed	Assistant Professor	City University of New York
Sami Mohammad Al-Kilani	Assistant Professor	Miguel University
Julia Drouber	Assistant Professor	Exeter University
Mustafa Ali Hamad	Instructor	University of Jordan
Noura Al-Asmar	Instructor	University of Jordan
Nuha Dweikat Al-Shaer (Scholar)	Instructor	Miguel University
Samah Fayez Saleh (Scholar)	Lecturer	Miguel University
Bassam Awartani	Instructor	Tunis University

{ Department of Print and Electronic Journalism }

Introduction

The Department of Journalism was established in 1983, and was one of the branches of Political Sciences, Law and Journalism (Faculty of Economics), and granted the Bachelor's- Sub Specialization- in Written Journalism. In 1995, it has become a separate department granting the Bachelor's as a single, major or minor specialization. In 1997, the Department has moved to the Faculty of Arts to become the seventh department. The Department at time provided a separate specialization in Journalism and Media. In 2010, the Faculty of Media was established, and the Department has moved to constitute one of the three other departments: Print and Electronic Journalism, Public Relations and Communication and Radio and TV. But, after restructuring University faculties, the three aforementioned departments, including the Department of Print and Electronic Journalism, have moved to the Faculty of Economics and Social Sciences in the academic year 2013/ 2014.

Program Vision

The Electronic and Written Journalism program seeks to be a distinguished and developed academic pioneer. It works on qualifying specialist cadre in both digital and written journalism, a cadre which is able to quickly adapt and respond to new media developments, and which is also able to serve the Palestinian, Arab and international audience. It thus aims at graduating journalists who meet international journalism criteria.

Program Mission

The Electronic and Written Journalism program aims at producing Palestinian, Arab, and foreign graduates in electronic and written journalism who are capable of dealing with information technology, media, communication and institutional work. Such graduates should be able to adhere to the ethics of journalism, be able to compete with their counterparts in the region, and be able to conduct scientific research serving the priorities of Palestinian society. The graduates of the program should be able to participate in the various institutes' development through providing consultation and training programs in both digital and written journalism. In addition, the program seeks to possess developed and substantial human abilities meeting international criteria.

Program Reference

We have adopted the academic criteria of the AEJMC (2006) as a reference for our electronic and written journalism program. This adoption came after a verification that makes the program suitable for the Palestinian and Arab reality.

Program Objectives

1. Offering Palestinian society a competent and distinguished cadre in media and journalism, capable of confronting challenges and aware of the principles required by journalists to convey their messages to their audience.

2. Building an ethical, professional, and scientific foundation for Electronic and Writing Journalism students.
3. Developing appropriate specialties in the field of Electronic and Writing Journalism to meet rapidly new media developments, such as internet, radio, and TV.
4. Focusing on an electronic media that is compatible with societal needs.
5. Creating Palestinian self-sufficiency in the field of media.
6. Enriching journalism and media students with experience through training courses prior to their engagement in the journalistic field.

Program Outputs

1. Knowledge and Understanding:
 - Obtaining news and information from reliable sources.
 - A variety of writing by training students on how to use several journalistic writing models.
 - Employing photojournalism in sustaining and interpreting a text.
 - Dealing with digital events and problems in all circumstances.
 - Building and maintaining a continuous relationship with news sources.
 - Mastering the arts of dialogue and persuasion to deal with a variety of audiences.
2. Mental Skills:
 - The ability to conceive the nature of media profession, as well as suaveness.
 - The ability of analyzing events and linking them with the relevant developments.
 - The art of time management.
 - The ability of innovation and generating creative thought at work.
3. Professional and Practical Skills:
 - Proficiency in electronic journalism programs.
 - Mastering digital photojournalism.
 - Ability to document and record events.
4. General and Transferable Skills:
 - The ability to attract the audience to the medium.
 - Dynamic at work and the ability to manage the media institute.
 - Confronting expected problems and setting emergency plans.
 - Planning and generating tasks at work.
 - Awareness of laws which contribute in creating successful journalism.

Department of Print and Electronic Media

Study Plan
(126 Credit Hours)

Requirement	Category	Credit Hour
University Requirements	Compulsory	18 credit hours
Department Requirements	Compulsory	93 credit hours
	Electives	12 credit hours
Free Courses		3 credit hours
Total		126 credit hours

Department Code: 10841

University Requirements:

Compulsory List:

The student must successfully pass the following courses (18 credit hours):

Course #	Course Name	Credit hour
11000101	Islamic Culture	3
11000102	Arabic Language	3
11000103	English Language I	3
11000325	English Language II	3
11000105	Palestinian Studies	3
11000117	Leadership and Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	3
10032100	Remedial English	0

Free Courses:

The student must complete a three-credit-hour course, which he/she can choose from any other major. (This Free Course shouldn't be equal to any of the study plan courses).

Note: The 12-credit-hour practical training is equivalent to 576 working hours, divided as follows: 96 days × 6 hours daily.

A: Print and Electronic Media Compulsory Courses (single major):

Course #	Course Name	Credit	Prerequisites
10841101	Introduction to Media Study	3	N/A
10841102	Media Language- Arabic	3	N/A
10841103	Media Theories	3	N/A
10841203	Media Ethics	3	N/A
10841104	Statistics for Media Purposes	3	N/A
10841201	Media Research	3	10841104
10841105	Art of Electronic and Print News Editing I	3	N/A
10841202	Art of Electronic and Print News Editing II	3	10841105
10841204	Media Language- English I	3	N/A
10841301	Media Language- English II	3	10841204
10851213	Digital Photojournalism I	3	10841204
10841306	Analytical Writing	3	10841105
10841305	Investigative Press	3	10841105
10841302	Palestinian Media	3	N/A
10841206	Electronic Media	3	10841105 or 10841204
10841303	Electronic Media Editing	3	10841206
10841205	Electronic Design	3	N/A
10841401	Skills in Print Media	3	10841105
10841402	Writing for Magazines	3	10841105
10841304	Print Layout and Design	3	N/A
10841403	Graduation Project	3	N/A
10846111	Radio Editing and Presentation	3	N/A
10846112	TV Editing	3	N/A
10851111	Principles of Public Relations	3	N/A
10851106	Writing for Public Relations	3	N/A
10841355	Public Opinion	3	N/A
10841254	Mass Media and Society	3	N/A
10841400	Practicum Training	12	N/A

B: Print and Electronic Media Elective Courses. The student must choose (12 credit hours) from the two lists below (6 credit hours from each list):

List One: Languages: The student must choose two consecutive courses from the same language:

Course #	Course Name	Credit Hour	Prerequisite
10301116	Hebrew Language I		
10301160	Hebrew Language II		
10302116	German Language I		
10302117	German Language II		
10311198	French Language I		
10311299	French Language II		
10302113	Spanish Language I		
10301114	Spanish Language II		

List Two: The student must choose two courses (6 credit hours) from the list below:

Course #	Course Name	Credit	Prerequisite
10841351	Media and Development	3	N/A
10841251	Islamic Mass Media	3	N/A
10841352	International Mass Media	3	N/A
10841252	Arabic Mass Media	3	N/A
10841353	Propaganda	3	N/A
10841253	Israeli Mass Media	3	N/A
10841451	Contemporary Media Issues	3	N/A
10841255	Population Communication	3	N/A
10841354	Management of Media Institutions	3	N/A
10841354	Applied Language Practice	3	10841102
10841357	Print and Electronic Advertising	3	10841304 or 10841204
10851214	Digital Photojournalism II	3	10851213
10841360	Sports Media	3	N/A
10841161	Intercultural Communication	3	N/A

Course descriptions:

10841101 INTRODUCTION TO THE STUDY OF MEDIA

This course deals with the basic principles of mass communication, concepts, and related theories. It also acquaints students with the various systems of information. In addition, it gives them a general view of the emergence and the development of basic kinds of mass media (i.e., journals, cinema, radio and television) and their development.

10841102 MEDIA LANGUAGE- ARABIC

This course deals with the basics and foundation of the Arabic language in circulation in media as an introduction to the arts of the journal writing. It also aims to support the students' language talent and foster their capacity to express their ideas in writing, using strong and clear language free from mistakes. In addition, the student is introduced to syntax and inflection with some concentration on the dual, the plural, number, countables, the indeclinable, and the correct dictation (including the writing of hamza), as well as correct punctuation and media idioms.

10841103 MEDIA THEORIES

This course deals with the various and basic theories and schools for studying mass media and its effect on the spectator. The course also looks at the role that the press, radio and TV play in our modern society. Finally, students will learn the theories of the sender, people, means and the impact.

10841203 MEDIA ETHICS

This course deals with the vocational ethics of the journalist used while collecting news, and then transmitting, editing and preparing it for publication. It also focuses on seeking the truth and the right for public opinion to be heard, as well as taking the accuracy of a news piece into consideration. It also focuses on objectivity and libel, as well as ethical data conventions providing for the freedom of expression, publication and broadcasting,

10841104 STATISTICS FOR MEDIA PURPOSES

This course deals with the basic principles of statistics and aims to clarify the methods of data collection and presentation methods. It covers the use of measures of central tendency and dispersion, statistical distributions, and hypotheses testing. In addition, it deals with correlation and regression metrics as well as how to use them for the purposes of media research. It also identifies the methods for working out the rates, ratio variables, median and range.

10841201 MEDIA RESEARCH

This course deals with the methods and techniques used to gather information and trains the student on the use of the library and citation, in addition to the collection, arrangement and classification of data. It also teaches the student about the composition of a scientific study and how to formulate research in its various parts. As a practical application, the student writes a research paper that uses the various technical and scientific assets learned in the course.

10841105 THE ART OF ELECTRONIC AND PRINT NEWS EDITING I

This course deals with the theoretical foundations of the rules of writing and the regulation of the journalistic news – all of which constitute the first foundation to building a newspaper. In this course, students study the art of collecting material, editing press releases both theoretically and practically, and the foundation interviews (how to conduct them and formulate questions).

10841202 THE ART OF ELECTRONIC AND PRINT NEWS EDITING II

This course deals with the creative news arts, in particular the press report, the news story, the press article, and the news investigation.

10841204 MEDIA LANGUAGE- ENGLISH I

This course deals with the English language as an important aspect of journalistic work. The point of the course is to increase the linguistic skills of the journalist and expands his/her ability to gather information in English. There is no doubt that the English language has a special importance in our country. Therefore, this course aims to promote the student's press language in the form of reading, comprehending, speaking, writing and translation.

10841301 MEDIA LANGUAGE- ENGLISH II

This course deals with the English language in the media at a more comprehensive level than in 0841204. It develops what the student studied in that course in various areas of journalistic literature, particularly in politics, economy, society, technology, and sports.

10851213 DIGITAL PHOTOJOURNALISM I

This course deals with the identification of the art of photojournalism, with a clear difference between it and photography. This course also clarifies the importance of press shots and their role in shaping public opinion, and it also includes a presentation of the most important news values. An important stage of this course introduces students to holding the camera and using it.

10841306 ANALYTICAL WRITING

This course deals with the foundations of critical analysis of events, such as how to formulate analysis in analytic journalistic molds like news articles, op-ends, and columns. Then the student will have the opportunity to apply what he has studied.

10841305 INVESTIGATIVE JOURNALISM

This course deals with the foundations and principles of investigative reporting in its different stages – such as identifying the target, collecting information, planning, implementation, and photography, as well formulating the investigation, making the output and publishing it. In addition, students also learn about the origins of the press editing.

10841302 PALESTINIAN MEDIA

This course presents a comprehensive overview of the emergence of the Palestinian media and its evolution in various branches (such as the written press, radio and television) at different stages in the history of the people inside the homeland and in the diaspora. In addition, the course helps students to recognize the editorial policy of various Palestinian media and their methods of management and the laws under which they work. The course also deals with Palestinian media laws: the materials for the freedom of opinion and expression, with basic press and publications laws, the audio and visual laws, and the criminal laws relating to the electronic press.

10841206 ELECTRONIC PRESS

The course deals with the nature of the computer and its uses, especially in the areas of journalism, social media and social journalism. It also examines in detail the process of dissemination of information releases via the Internet. The students are trained to prepare the press site on the Internet, in terms of editing, designing, processing words and images and other materials, and supporting programs in collecting and publishing electronic media. Students are also exposed to the process information access through the Internet.

10841303 ELECTRONIC MEDIA EDITING

This course deals with the methods of processing information published in the electronic media. Students learn how to collect information and write for websites, as well as the difference between editing the printed and the electronic press. Students' get-practical training in this area, in addition to knowledge of the forms of media material published in the electronic media and the techniques used in the editing/publishing process.

10841304 ELECTRONIC DESIGN

This course deals with design concepts and theories, along with the elements and cognitive, visual and aesthetic variables that govern them. In addition, it deals with the elements of photography and their functions and use, where the designing concepts are identified. These concepts include theories and design elements (cognitive variables and visual design), modern techniques in design and output, image processing by using computer modern, and software digital design.

10841401 SKILLS IN THE PRINT MEDIA

This course deals with writing skills for print media, such as transferring and editing, investigating the news, reporting, and other forms of journalism that students have learned in previous writing courses in electronic and print media.

10841402 WRITING FOR MAGAZINES

This course deals with different styles of writing for magazines that make the magazine one of the means most favored by the readers. Magazines have characteristics which separate them from other media. This course also includes practical training in processing several informational aspects in the magazine. This puts it in an advanced position versus the well-known media.

10841304 PUBLICATIONS OUTPUT

This course deals with the various stages where the output journalist of the newspaper passes through. It also explains the comprehensive meaning for the word “output” and the evolution of the use of the newspaper, and it gives an opportunity for students to train on designing the newspaper and its publications in various forms (such as posters and brochures). This course also deals with the concepts and principles of design and output of newspapers and publications, with a focus on the elements of graphics and technical schools, along with output publications using contemporary journalistic publishing software.

10841403 GRADUATION PROJECT

This course is essentially the outcome of what the student studied in the journalism program. It is an applied course which a student takes in the last semester and it is within the axes of his interest. It may include the construction of a website, preparing a printed material, or a research project on the media. This is all done under the supervision of the instructor, and it is displayed at the end of the semester. It also includes training in either a newspaper or a magazine, according to the field of focus. While it is a basic requirement for graduation, students' marks are pass or fail and are not calculated within the approved hours of specialization. Students must also provide the department with models of their work during the training period.

10841351 DEVELOPMENTAL MEDIA

This course deals with the use of the media in the advancement of society and achieving that society's developmental goals. Because of the spread of the means of communication and the growth of its impact, a lot of media research has focused on how to harness them in the development process. The focus of this course is thus the impact of communication in the development of communities leading to the emergence of media development. It also aims to provide different models and theories that explain the role of communication in the development process. In addition, it aims to review the outcome of research and the developing theories of media.

10841251 ISLAMIC MEDIA

This course deals with the theoretical foundations on which the Islamic view of the media is based. It also looks at its functions as well as its role in the society. It reviews the Islamic historical experience in the development of media across fourteen centuries. The course also deals with Islamic features of the information system, and discusses the similarities and differences from other information systems.

10841352 THE INTERNATIONAL MEDIA

This course deals with the media map of the world and the problem of imbalance in the information disseminated at the international level. It also deals with the ownership of the world's media - especially international news agencies, the way they work, and their impact, policies and objectives. The course analyzes Palestinian and Arab media on the international scene, and it also addresses the concepts of important international media, such as the matter of "international publicity" and "new media system." This course completes the fourth episode of the student in his study of international media as well as what he learned in the Palestinian, Arab and Israeli media courses.

10841252 ARAB MEDIA

This course tackles the prevailing media systems in the Arab world. It also handles the establishment of the most prominent newspapers, magazines, and radio and TV stations in the Arab countries. Moreover, the course focuses on the important contemporary issues in the Arab world, such as freedom of expression, censorship, and so forth.

10841353 PROPAGANDA

This course deals with the methods and use of propaganda and its impact on the local, regional, and international public opinion. It sheds light on the modern historic use of propaganda, especially during the 1930s, the Cold War during the post Second World War era, and more recently, the Gulf War. It also deals with the relation between propaganda and public opinion, and it distinguishes between public opinion, propaganda, advertising, public opinion, and education. The course examines various experiences of propaganda by different nations in the world.

10841253 ISRAELI MEDIA

This course deals with the foundation and development of the most prominent Israeli media, which publish and broadcast in both Hebrew and Arabic (namely, newspapers, magazines, radios and television) - both public and private. This course also sheds light upon the nature of the Israeli media system, and its internal and external propaganda devices. It is also a

continuation of the courses of Palestinian and Arab media, which are in a constant state of confrontation with the Israeli media.

10846111 EDITING AND PRESENTING RADIO NEWS

The course deals with the nature of radio and in particular, radio language. Students in this course will study writing and editing skills for radio, radio language, sound system, music, sound effects, and employing silence in radio. The course aims at enabling students to acquire the following skills: perceiving radio as an important medium, understanding what editing policy means, collecting news and information from their sources for radio, writing radio news, classifying information and news for radio, and editing and producing radio news bulletins.

10846112 TV NEWS EDITING

This course deals with the nature of television work, especially the language of television, where the students are introduced to the arts of TV writing and editing, the elements of TV language (words, pictures, and sounds) and the methods of employing them in the work of television. This course aims to enable students to acquire the following skills: understanding the nature of television work, a general understanding of the policy of editing, the ability to collect TV news from different sources, the ability to write and categorize TV news, and the ability to edit and direct the newscast.

10841254 MASS MEDIA AND SOCIETY

The course deals with the reciprocal relationship between media and society in terms of strengthening social, political, economic, and cultural roles of media. It also deals with the perception of contemporary societies towards the significance of media in peoples' lives in terms of its role in strengthening social relations, relations between governments and people, and its role in opening the door for freedom of expression and international relations. The course also examines the negative impact of media on societies and its power to destroy social values. Moreover, it examines the relationship between societies and media policies, and also deals with contemporary media issues.

10841451 CONTEMPORARY MEDIA ISSUES

This course aims at engaging the student in current media issues, such as the way media deals with terrorism, Islam, minorities, and so forth, in the context of developments in the global arena. This course is important for the student since it offers a chance for mental and professional training on how mass media deals with contemporary issues. It provides the student a chance to discuss such issues properly and to understand their background.

10841255 POPULATION COMMUNICATION

This course examines the status of the population in Palestine as a cornerstone of the development process in terms of building strategies and making

plans for the future of the country. It looks at population needs, and how to monitor public opinion towards these needs, and media effects. It also deals with employing mass media for developing population concepts and social behavior. The course sheds light on a number of core issues in population and developmental concepts and in population planning.

10841354 MANAGEMENT OF MEDIA INSTITUTES

This course deals with methods of managing media institutes in terms of centralization and decentralization, strategic planning, performance timetable, and so forth. It also examines financial resources management and how to build a wide network of news sources. It aims at expanding audiences of the medium, focusing on the development of the human resources of the institute, and the formulation of its policies and its implementation techniques.

10841355 PUBLIC OPINION

This course deals with the collective phenomena of public opinion through the available means of communication, both modern and traditional. It also focuses on introducing the factors which form and change public opinion through the study of culture, trends, motives, and beliefs, and then by learning how to employ the different media functions to construct a public opinion that achieves harmony and agreement in the society. This course also aims at displaying the influence of media on the public opinion and vice-versa.

10841356 IMPLEMENTATION OF MEDIA LANGUAGE

This course deals with Arabic grammar and the manners of forming the sentences and texts which are most current in the media. In this course students practice writing, criticism, and correction in writing the different media materials (journalistic, radio, and television). Students will also present models of their own.

10841357 PRINT AND ELECTRONIC ADVERTISING

This course deals with the concept of advertising, the basic principles of marketing, the elements of an advertisement as a tool for marketing in modern communities, the elements of the marketing process, the bases, phases and types of commercial advertising, internet as a means for advertising and marketing, and case studies in advertising and marketing. Students are also introduced to the importance of using advertising in mass media, the electronic means of promoting, and the styles of designing advertisements and executing advertising campaigns.

10851214 DIGITAL PHOTOJOURNALISM 2

This course introduces students to the techniques of digital cameras, and develops their visual language through telling stories with pictures. It also aims at developing their skills in sensing and criticizing media images, and

focuses on the practical aspects, as students are to present a documentary filming project.

10841360 SPORTS MEDIA

This course covers the importance of identifying the various visual, print and audio media in raising the level of sports in all its aspects and elements. The course also aims to clarify the role of sports media in raising the cultural level of society in the field of sports. In addition to the role of the Olympic Committee in developing and controlling the media and training students on writing sports related reports.

108411161 INTERCULTURAL COMMUNICATION

This course covers how to identify the different cultures and communicate with them and the subdivisions developed by scientists to distinguish between them, such as Stuart Hall and others. The course also deals with how to recognize cultural differences between nations, and utilize them in the formulation of media messages; the ability to address the external audience; and assisting students in analysing the contents of these media external messages. This will help students to develop their analytical and critical skills in absorbing the cultural and academic texts; open their eyes on the worlds behind the scope of their experiences. The course includes some literary works, films, television and radio programs, photos, cartoons, newspaper articles, political speeches and architectural designs. This is why the course provides students with theoretical tools and critical points of views in order to dig deep into these texts. Finally, students are expected to write down their reactions to the readings for discussion.

Staff Members:

Name	Academic Rank	University of Graduation
Dr. Abdel Jawad Abdel Jawad	Assistant professor	Howard University/USA
Dr. Farid Abudhair	Assistant professor	Leeds University/UK
Mr. Ibrahim Al-Okeh	Lecturer	Sebelas Maret University of Indonesia, Indonesia
Mr. Ayman Masri	Lecturer	Trier/Germany

{ Department of Public Relations }

The Vision:

The Public Relations and Communication Program is designed to be an advanced, excellent program. It aims to prepare graduates to be professionals in public relations. These graduates are expected to use all new means of communication so they fit right to the needs of the job market.

The Mission:

This program prepares Palestinian, Arab, and foreign students for public relations field jobs.

Graduates of this program are professional in using technology in communication, and using their knowledge in marketplace environment. They are committed to work ethics, competitive in a regional level, able to conduct public relations research that identifies the community's priorities and attitudes and contributes to institutional development. The program provides training and correct views and concepts of international relations. It also trains students to perfectly use financial, technological and human resources, which enable them to work on all levels of institutional standards.

Frame of Reference

we adopt the Association for Education in Journalism and Mass Communication (AE-JMC), and Chartered Institute of Public Relations (CIPR) with some necessary changes to fit the Palestinian and Arab contexts.

General goals

1. To understand the theories and principles, laws and ethics, inside and outside the organization, work activities, and to provide additional services to the community.
2. To enrich knowledge, creativity and maintain renewable independent thought in the field.
3. To understand the historical contribution of public relations institutions, organizations and individuals to the field.
4. To conduct scientific research, evaluate data with technology and suitable tools used in the public relations studies.
5. Write clearly, to the point, for different media and audiences, using professional standards.
6. Apply the principles and concepts which relate to statistics and numbers.

Special goals

In both theoretical and practical sides, this program enables graduates to:

1. Learn principles of interpersonal communication, in regard to community, and make this communication effective.
2. Provide knowledge in mass communication principles, and use it in public relations

communication through practical application. Program will enrich students' experience, in communicating with the public, in order to persuade and strengthen the ties with different social groups and organizations.

3. Expand students' thinking and ability to understand the core practical and theoretical rule of public relations. The program teaches students how to communicate, and institutionalize the relationship between organizations, and understand the public opinion, in political and economical aspects, to the best interest of society and individuals.
4. Develop the desire and skills for scientific research in public opinion studies and other ways of public relations practicum.
5. Plans for institutional development through the rules of public relations in community growth.

Program outcomes

1. Knowledge and Understanding

Graduates will be able to:

- Identify the current and future developments in public relations and media, communication and advertising.
- Understand the effects of nature of public relations and the advertising market, and the elements that influence the international media.
- Name the communication skills that help public relations and advertising practitioners in making intended effects and persuasion.
- Define the concepts of organizational and marketing communication, crisis management, public opinion and international communication.
- Describe the steps of conducting qualitative, field and analytical research in public relations, public opinion and advertising.
- Introduce public relations and advertising ethics and basics of dealing with public opinion.

2. Mental Skills

Graduates will be able to:

- Plan communication programs and advertising campaigns.
- Apply ethics of public relations and commercial advertising.
- Analyze public relations and advertising ethics' variables.
- Design effective and creative public relations programs and campaigns.

3. Professional and Scientific Skills

Graduate will be able to:

- Design and conduct scientific research on public relations topics, advertising and public opinion.
- Conduct and implement survey on national and international issues related to the activities and functions of public relations locally and internationally.

- Produce media programs on organizations and activities/events.

4. General and Mobility Skills

- Students will learn to work in a team setting.
- Students will be able to deliver speeches and write memorandums on public relations activities and marketing.
- Students will be able to discuss results and facts in open- minded attitude and accept criticism and evaluation. They will be able to solve problems in a scientific, organized manner.

Public Relations and Communication Requirements:

Requirement Type		Credit Hours
University Requirement	Compulsory	18
Department Requirements	Compulsory	93
	Elective	12
Free Courses		3
Total		126

Department Compulsory Courses

Course No.	Course Title	Credit	Prerequisite
10841101	Introduction to Media Studies	3	-
10841102	Arabic Language for Media	3	-
10841204	English Language for Media I	3	-
10841105	Arts of Electronic and Print News Writing I	3	-
10851106	Art of Writing for Public Relations	3	10841105
10851108	Negotiations and Persuasion	3	11000117
10851110	Research Methodology for Public Relations	3	10851111
10851111	Principles of Public Relations	3	-
10851112	Law and Ethics of Public Relations	3	10851111
10851213	Digital Photography I	3	10841105
10851214	Digital Photography II	3	10851213
10851225	Public Opinion and New Media	3	10851108
10851216	Public Relations Skills in English	3	10851219
10851218	Advertisement and Marketing in Public Relations	3	10851215
10851219	Public Relations Skills	3	11000117
10851220	Media Propaganda	3	-
10851221	Use of Electronic Journalism in Public Relations	3	10841105
10851222	Social Media	3	10851221
10851321	Public Relations Planning and Crisis Management	3	10851110
10851323	Public Relations Administration	3	10851112
10851324	Public Relations Strategies and Campaigns	3	10851321
10851325	Protocol, Ceremony and Etiquette	3	10851326
10851326	Conference Planning and Execution	3	10851429
10851328	PR Material Directions and Production	3	10851218
10851427	Project Preparation and Design	3	10851321
10851429	Event Management	3	10851429
10851436	Graduation Project	3	10851427
10851438	Practical Training	3	10851427

Department Elective Courses

Course No.	Course Title	Credit Hours	Prerequisites
32113	Spanish Language I	3	-
32114	Spanish Language II	3	32113
32115	German Language I	3	-
32116	German Language II	3	32115
10301116	Hebrew Language I	3	-
10301161	Hebrew Language II	3	10301116
10311198	French for non-majors I	3	-
10311199	French for non-majors II	3	-
10851224	Specialized Public Relations	3	-
10851226	Public Relations and Social Psychology	3	-
10851327	Institutional and Organizational Communication	3	-
10851329	Public Relation in Security Institutions	3	-
10851330	Public Relations and Investment	3	-
10851331	Public Relations in International Institutions	3	-
10851332	Art of Speech and Presentation	3	-
10851333	Public Relations in Non-Profit Institutions	3	-
10851334	Public Relations and Legislative, Executive and Judicial Authorities	3	-
10851336	Public Relations over the Internet	3	-

Course descriptions:

10841101 INTRODUCTION TO MEDIA STUDIES

This course deals with the basic principles of mass communication, concepts and related theories .It also acquaints the student with the various media, and gives an overview and comprehensive information about the origins and evolution of the mass media and its development, namely, paper, film, radio and TV.

10841102 ARABIC LANGUAGE FOR MEDIA

This course is considered as an introduction to the arts of journalistic writing and deals with the foundations and rules of Arabic used in the media .It also aims at supporting the students' linguistic competency and improve their ability to express their ideas and phrase them on paper , in a clear strong , flawless language .In this course , students are also introduced to the rules of grammar and syntax , such as : (the singular , plural, numbers,...) ,correct spelling , and the vocabulary of media .

10841204 ENGLISH LANGUAGE FOR MEDIA I

This course deals with an important aspect of journalistic work , that is the English language , as the more competent in English a journalist is the more informed , able to communicate , they are, and the more varied are their sources .

10841105 ARTS OF ELECTRONIC AND PRINT NEWS WRITING I

This course deals with the art of news writing, both print and electronic, the theoretical bases, and the rules of writing and organization of journalistic news, which is the foundation for a newspaper , and the art of collecting journalistic materials , and editing them both in theory and practice , and finally the bases and formulations of journalistic interviews.

10851106 ART OF WRITING FOR PUBLIC RELATIONS

This course aims at developing students' communication skills by exposing them to theoretical and practical basics of writing and editing of different journalistic texts such as news and reports. Students will be trained to communicate media and organizational letters and messages.

10851108 NEGOTIATIONS AND PERSUASION

This course teaches skills of negotiation and persuasion. It develops planning skills to make successful strategies and tactics. It teaches the stages

of persuasion, problems and solutions, the different kinds of personalities, ways of dealing with them, the characteristics of a good negotiator, and body language.

10851110 RESEARCH METHODOLOGY FOR PUBLIC RELATIONS

This course teaches students how to do research in the field of public relations, including methods of gathering data, analysis, and evaluation and finding and interpreting research results. It is the basis of developing research-oriented minds in students. Students will learn how to plan, design and conduct research.

10851111 PRINCIPLES OF PUBLIC RELATIONS

This course introduces students to the concept of public relations, its history and development, its goals and functions, its organization and administration and techniques, importance of audiences, mission and activities, plans, practice and its current state of affairs in the Palestinian society and other societies.

10851112 LAW AND ETHICS OF PUBLIC RELATIONS

This course is a study of the legal and ethical principles of public relations contracts, copyrights, defamations, and intellectual ownership, laws of mass communication, and ways of respecting local and international laws when practicing public relations.

10851213 DIGITAL PHOTOGRAPHY I

This course aims at providing the students with basic concepts of photography and the necessary experience to be able to use the modern techniques in artistic photography. It also aims at providing the students with the skills relevant to steady and mobile photography and the use of computer programs that are related to the editing and printing of digital images. In addition to employing images in design and advertising and some other artistic and educational fields.

10851214 PUBLIC OPINION AND NEW MEDIA

This course covers the theoretical knowledge of the public opinion concept, types, and components, factors affecting it, uses, behaviors, functions and measurements. The aim of this course is to study public opinion as a social, psychological and media phenomenon and its influence in the political and social life of the contemporary societies. In addition, it will distinguish the most important issues of public opinion and its interactions from a critical and analytical point of view. It enables the students to look at themselves as those in charges of communication in the future, and as opinion leaders in the local and global communities.

10851225 PUBLIC OPINION AND NEW MEDIA

10851216 PUBLIC RELATIONS SKILLS IN ENGLISH

This course is designed to help students master the communication skills they need to use in the society and with the foreign institutions in order to promote the institution where they will work. This course aims to teach the students the main skills of diplomacy work, political and cultural environment, by putting the points of differences between institutions and different human communities.

10851218 ADVERTISEMENT AND MARKETING IN PUBLIC RELATIONS

10851219 PUBLIC RELATION SKILLS

This course covers the main skills in the public relations field. It combines both theoretical and practical sides by using study cases and practical exercises. The course gives the students the opportunity to learn different skills in the practice of public relations. It includes the following:

Preparing the media and advertising materials such as letters, brochures, publications, news, newsletters...etc.

Organizing conferences, press conferences, speeches, reports, minutes, invitations...etc.

Coordinating with media and journalists and communicate with the public.

10851220 MEDIA PROPAGANDA

This course defines media propaganda, its kinds, ways of its use and its effects on local, regional and international public opinion. It sheds light on past propaganda cases of the 1930s, Cold War, and the Gulf War. It also explains the relationship between propaganda and advertising and public opinion, education and media in public relations context.

10851221 USE OF ELECTRONIC JOURNALISM IN PUBLIC RELATIONS

This course studies web sites of the institutions from different sides: design, content, type of news of the institution, news publishing, e- news treatment, e-photo treatment, editing for E-journalism and the news bar on the website of the institution.

10851222 SOCIAL MEDIA

This course tackles the concept of social media, its definition, importance, and social theories that explain the social phenomenon in different dimensions. It also examines the globalization of media, news alternative and Internet sites that connect people in a virtual environment. The Course ends with the role of new media in making changes in the concept of media, and the effects of social media on audiences/users.

10851321 PUBLIC RELATIONS PLANNING AND CRISIS MANAGEMENT

This course studies the principles of public relations management, strategic planning, budgeting, human resources management, customers' relations, crisis management, and research, moral and professional functions of public relations through case studies.

10851323 PUBLIC RELATIONS ADMINISTRATION

This course examines the bases of public relations administration, ways of deciding the size and nature of public relations departments, their location in the high administration and their interior organization, and the different approaches of managing public relations. It also teaches the missions and responsibilities of public relations and describes the successful public relations personnel, its structure and the third party public relations in industrial, governmental, trade and social organizations.

10851324 PUBLIC RELATIONS STRATEGIES AND CAMPAIGNS

This course defines campaigns, their theoretical design, theory and structure, kinds of campaigns, stages and steps in theory and practice.

10851325 PROTOCOL, CEREMONY AND ETIQUETTE

This course identifies the different concepts of protocol, missions and functions of public relations sections for protocol and their missions in government and private organizations in organizing visits and special events. It also clarifies the protocol in diplomacy, its history, skills, correspondence of presidents, ambassadors, verbal, and autographed notes through real examples.

10851326 CONFERENCE PLANNING AND EXECUTION

Students in this course learn about the basics in planning a conference, rules and features of scientific, cultural, social and media conferences. This includes theoretical and practical management of conferences and communicating with media.

10851328 PR MATERIAL DIRECTIONS AND PRODUCTION

This course teaches students about the production process, its rules and standards, with focus on production of PR means of communication within particular standards and features. This course introduces students to print media, its material, designs and approaches in layout. Students are expected to produce PR material under course instructor's supervision.

10851427 PROJECT PREPARATION AND DESIGN

This course deals with the required basics for preparation and management of projects. It combines practical and theoretical sides in a group setting of practical training, including student shows on individual and group levels so the practitioner of public relation learns how to cooperate, exchange and respect different opinions.

10851429 EVENT MANAGEMENT

This course acquaints students with different and varied activities of the levels of planning management and organization which specializes in event management to make a student capable of preparation and management. It also aims at concentrating on introducing the principles, concepts and skills in public relation field. It also deals with the responsibilities of the practitioner of public relation from the scope of the event management and the marketing efforts of the event and the preparation of the exact budget for it.

10851436 GRADUATION PROJECT

This course teaches students how to conduct scientific research the field of public relations. It trains students on the scientific trends of preparing reports for the sale and analyzing scientific issues. Students are expected to do applied research. Students are also advised to deal with issues that concern the institutions they work in.

10851438 PRACTICAL TRAINING

This course aims at empowering students to apply the different skills he has acquired in a real work environment on a condition that he should pass training experience in a public, private and nongovernmental organization. His training is followed up by the course supervisor. At the end of the training, the student should submit samples of work he/she has executed in these institutions to his supervisor.

10851224 SPECIALIZED PUBLIC RELATIONS

This course deals with the practical side of public relations in various fields, and some specialized organizations, in terms of special uses and needs. It also covers the use and application of public relations in the field of profession, private and public affairs, such as relations in the health, financial, educational, governmental, societal and military institutions. The course discusses case studies in Arab and international countries.

10851226 PUBLIC RELATIONS AND SOCIAL PSYCHOLOGY

This course deals with the problems of interaction between individuals, groups and examines the psychological and social phenomena and possibility of conducting scientific measurements. In addition to the study of psychological theories that explain the foundations of mutual influence between the individual and the group and the theory of the role in social behavior, self-concept, intolerance, prejudice and group dynamics and trends as the course aims to clarify the most important concepts of social psychology, terminology and theories.

10851327 INSTITUTIONAL AND ORGANIZATIONAL COMMUNICATION

This course deals with the basic concepts of organizational communication forms and levels of organizational communication in institutions with emphasis on conflicts and crises in institutions' channels in organization communication. This is in addition to communication inside institutions, extended communication and case studies.

108513229 PUBLIC RELATION SECURITY INSTITUTIONS

This course deals with communication program awareness and social programs, individual behavior with colleagues, directors and the public, in addition to etiquette skills, objectivity, flexibility, humbleness, patience, persistence open slope rationality in dealing with the public. This course supplies the student with the academic education relevant to crimes against public property, traffic, drugs and personal safety history and behavior with concentration on the developing role of public relations in society.

10851330 PUBLIC RELATIONS AND INVESTMENT

This course trains students to promote companies and investment institutions. It puts students in a financial and investment work environment where monetary information is needed in order to gain trust and confidence. Students will learn about the stock markets, their laws and marketing techniques, financial data analysis and communication skills related to them.

10851331 PUBLIC RELATIONS IN INTERNATIONAL INSTITUTIONS

This course deals with the basic concepts of the international public relations, and aims at studying cases of public relation of overseas multinational companies, in addition to allowing the student to acquire scientific and practical knowledge in how to plan, execute and conclude campaigns in public and international relation with analysis of a number of successful international campaign and shedding of light on the international law and international relations.

10851332 ART OF SPEECH AND PRESENTATION

This course introduces students to modern methods of persuasion targeting public relations audience. Students learn to introduce subjects and meetings in addition to topics for audience. They also learn how to prepare interviews and make presentations with prewritten and improvised speeches, using presentation techniques and tools of writing, voice and video material. The course caps with the basic elements and principles of effective presentations, persuasion, analysis and criticism of speech.

10851333 PUBLIC RELATIONS IN NON-PROFIT ORGANIZATION

This course deals with the means of developing public relation in non-profit organizations and concentrates on building a strategy with the commercial sector, through internal and external public to introduce services on different levels (local national and international) and study the public mood through scientific bases built on strategic relations.

10851334 PUBLIC RELATIONS AND LEGISLATIVE, EXECUTIVE AND JUDICIAL AUTHORITIES

This course covers how to make decisions in the legislative, executive and judicial authorities, at the national, local and international levels. It also provides students with ways of to collect and analyze information to build communication skills, which are necessary for the development of government relations and public policy. Furthermore, it provides students with research

skills for the purposes of enhancing the institutions' goals and plans, to build bridges of trust and credibility to achieve the desired objectives.

10851336 PUBLIC RELATIONS OVER THE INTERNET

This course teaches students how to use the new media tools public relations work. These include introducing information, using the internet to build media relations, offering information and data, films, pictures, services and activities to promote organizations. It also teaches the internet applications that allow interaction between the financial organization and the public.

Department Staff Members:

Name	Position	University of Graduation
Dr.Abdelakreem Sarhan	Assistant professor	Rostov University
Dr.Samar Shunnar	Assistant professor	Saint Pittsburg University
Mr.Nader Dagher	Lecturer	University of Wisconsin-Whitewater
Mrs.Yasmen Shahrour	Lecturer	Strasbourg University-France
Mr.Osama Abdallah	Lecturer	Manuba/Tunis
Mrs.Khalida Sammoor	Lecturer	Leeds university

{ Department of TV and Radio }

The Vision

TV and Radio Department in the Media College at An-Najah National University seeks to prepare and qualify graduates who are academically and professionally distinguished. It also seeks to prepare them to compete in labor market through providing them with the most important, and updated knowledge and training them how to deal with modern techniques in the TV and radio production and tools.

The Mission

- To prepare students who have specialized, scientific knowledge and skills in TV and radio production. Moreover, acquiring career's ethics.
- To prepare students who have a specialized scientific and professional background through knowing the professional ethics, professional practical values and its standards and implementations in the real field which ensure the quality of the graduates.
- The department maintains to introduce the scientific research skills and its bases to the students in the media field that assess them to conduct scientific research procedures which reinforce these skills.
- Encourage and motivate the students towards developing and promoting through producing practical and applied programs and conducting the scientific researches which enrich the practical domain that qualify them to enter the practical market.

Program Reference

As a reference for the TV and radio program, the Media College relies on the academic criteria of the Academic Reliance Institution of AEJMC of 2006. Some changes, however, have been introduced to fit the nature of the TV and radio program, and the Palestinian and Arab societies' contexts.

Objectives

- Training students to use the latest technologies in the field of radio and television production.
- Training students to acquire skills necessary for the preparation and production of radio and television programs
- Teaching students the professional standards and journalism ethics.
- Preparing students to deal with the radio and TV atmosphere production and the skills required in the production stages.
- Familiarizing students with the methods and rules of scientific research in the field of media.

Program's ILOs

A- Knowledge and Understanding:

1. Understanding TV and radio preparation, writing and bases of presentation.

2. Understanding TV and radio different program forms, their characteristics and good ways of producing them.
3. Understanding educational and cultural programs and their role in enhancing the local community with focus on Palestinian community development
4. Understanding TV and radio production starting from choosing the idea, preparing, presenting, shooting and directing it till producing different forms of programs.
5. Broadcasting and specialized channels in the era of satellite media , and the positive roles which they play in meeting the needs of the audiences , in addition to the negative influence which some of them may have on the society .
6. News and news programs; directing, rules of preparing and presenting news, and finally executing them.
7. Criticizing drama and films and evaluating their roles in the society.
8. Increasing their knowledge of Arabic grammar in TV and radio writing and performance.

B- Intellectual Skills

1. Ability to analyze the impact factors in TV and radio performance.
2. Ability to plan and conduct survey and research on TV and radio audience including public opinion research.
3. Ability to analyze news and news reports, criticize drama, TV and radio ads. and recorded and documentaries programs.
4. Analysis of political, economic, scientific and legal events and linking them together.
5. Evaluating TV and radio programs' performance for all various forms and art forms.

C. Professional and Practical Skills

1. Ability to prepare TV and radio programs according to their forms(direct dialogue , talk show, investigation, news story, news, recorded films,
2. Ability to use TV and radio studio to record or broadcast programs.
3. Ability to use necessary tools and equipment for TV production cameras: studio camera, portable camera, light, linear and non-linear montage equipment, sound equipment) or radio: sound equipment, montage.
4. Ability to produce TV and radio programs
5. Ability to employ the computer for TV and radio production.
6. Ability to use correct Arabic grammar in the writing of TV and radio programs.

D- General Skills

1. Ability to deal with the computer, save and recall the computerized data.
2. Ability to use statistical programs for analysis of research data.
3. Ability to use the internet network system.
4. Management of time efficiently.
5. Translation from and to other languages.

Curriculum Plan for TV and Radio Department

The Department of TV and Radio offers a single major in TV and Radio. Students wishing to major in this field must finish 126 credit hours. Of these 18 are university, 93, department and 15, electives.

Course #	Course title	Credit hrs.
11000101	Islamic Culture	3
11000102	Arabic Language	3
11000103	University English I	3
11000323	University English II	3
11000105	Palestinian Studies	3
11000127	Introduction to Computer Science	1
11000117	Leadership and Communication Skills	1
11000108	Community Service	1

Department Requirements (108 credit hours)

a- Department Requirements (93 credit hours)

Course #	Course title	Credit	Prerequisites
10841102	Arabic Media Language	3	
10841204	English Media Language I	3	
10841101	Introduction to Media Study	3	
10841105	Arts of Writing Electronic and Written News	3	
10846111	Radio Editing and Presentation	3	
10846112	TV Editing	3	
10851111	Public Relations Principles	3	
10846113	Editing and Translating Reporting Materials	3	10841204
10846211	Media Rules and Palestinian Press	3	
10846212	Radio Program Form and Template Preparation	3	10846112
10846213	TV Scenario Preparation and Writing	3	10846112
10846214	Sound and Control Techniques	3	10846111
10846215	TV Production	3	10846111
10846216	TV Shooting I	3	10846213
10846217	TV Montage I	3	10846213
10846218	TV and Radio Presentation	3	10846213
10841302	Palestinian Media	3	
10841301	Media English Language II	3	10846204
10846312	Media Research	3	Without
10846313	News and News Radio Programs	3	10846214
10846314	Production of TV News Bulletins	3	10846216
10846315	Radio Directing	3	10846218
10846316	TV Directing1	3	10846216
10846317	Preparation and Production of Documentary Films	3	10846217
10846412	Graduation Project	3	10846312
10846413	Practical Training	12	10846314
10841103	Media Theories	3	Without
10841203	Media Ethics	3	Without

Department Elective Requirements (15credit hours)

Course #	Course title	Credit	Prerequisite
10841352	International Media	3	
10311198	French I	3	
10311199	French II	3	10311198
10846151	Communication Technology	3	
10846152	Television Picture Writing	3	10846112
10846351	Live and Broadcasting on the Air	3	10846212
10846253	Production of Radio Fillers and Promos	3	10846212
10846254	TV Graphic Design	3	10846217
10846255	Decor and Light	3	10846215
10846358	TV Shooting II	3	10846216
10846352	TV Montage II	3	10846217
10846353	Radio Documentaries	3	10846212
10846354	Foreign Radio	3	10846212
10846355	Production of Educational TV Programs	3	10846216
10841253	Israeli Media	3	
10846357	Cinematic Film	3	
10846451	Design of TV Ads		10846216
10846452	Production of Specialized Radio Programs	3	10846212
10846453	TV Directing II	3	10846316
10301116	Hebrew I	3	
10301161	Hebrew II	3	10301116

Note: Practical Training carries 12 credit hours. Students have to finish 576 training hours, equivalent to almost 95 training days (6 hours per day).

Course Descriptions

10846112 TV EDITING

This course gives a comprehensive idea about the nature of TV work and the uniqueness of TV language. Students in this course learn about the arts of writing, TV editing, elements of TV language (word, image and audio) and methods employed in television work. By end of this course, students will have acquired the following skills: understanding of the nature of TV work, understanding of editing policies in general, ability to collect TV news from different sources, ability to write and classify TV news, and ability to edit and direct news bulletin.

10846111 RADIO EDITING AND PRESENTATION

This course gives a comprehensive idea about the nature of radio work and the specificity of radio language. Students in this course learn about the arts of writing and radio, and the “alphabets” of radio language: sound, music, sound effect and silence; the methods employed in broadcasting work. By end of this course, students will have the ability to acquire the following skills: understand the nature of radio work, understand editing policies in general, ability to gather radio news from various sources, ability to write and classify radio news, and ability to edit and direct news bulletin.

10841102 MEDIA LANGUAGE IN ARABIC

This course considers Arabic language as a means and a main tool for the study of journalism. So the material of this course is the basis for the first course in journalistic editing. The purpose of this course is to improve student’s language ability and proficiency to express him/her verbally and in writing to the extent his/her language scope shows clarity, and is sound, and error-free. It also requires mastering linguistic rules of grammar, syntax with emphasis on duality (*almuthana*) plurals, numbers, and combination of numbers and numbered, etc. This is in addition to writing with correct spelling and respect of the rules of correct numbering and punctuation. The course ends with a look at media and mass communication terms (jargon)

10846211 MEDIA LAWS AND PALESTINIAN PRESS

This course presents press, radio, and TV laws. It mainly focuses on the limits of freedom of media, legal restrictions and legal action which the executive authorities could take against newspapers, media and journalists and the legal system related to grievances against these measures and abuses. Through

comparative studies, the course will also teach international law related to organizing the work of the media and journalists.

10841103 MEDIA THEORIES

This course builds on media theories that the student should have learned in the media introduction course. It delves into this area by exploring theories, different schools, mission of studying the mass media, their impact on the audience and the roles played by newspapers, magazines, TV and radio in our modern community.

10841203 MEDIA ETHICS

This course provides students with a comprehensive idea about the manners of professional conduct of journalists during the compilation, transfer, editing, and preparation of news. Students are taught how to be extremely cautious upon their solicitation of truth, protection of the right of the public to know and obtain it freely, to be objective and discreet in carrying out their mission and to avoid acts of distortion, misrepresentation, and defamation.

10841205 ARTS OF WRITING ELECTRONIC AND WRITTEN NEWS

This course teaches arts of writing electronic and written news in terms of theoretical bases, writing rules and news organizing, all considered the primary basis of newspaper and its composition. The students in this course studies the art of collecting and editing press material, both theoretically and practically. They also study the bases of conducting press interviews.

10851111 PRINCIPLES OF PUBLIC RELATIONS

This course provides students with the theoretical knowledge of public relations science, in terms of defining the nature of public relations science, its foundation, justifications of its foundation, its relationship with humanities disciplines and the role of the profession of public relations in management of contemporary challenges, and its importance as a profession. It covers the strategies and tactics that help overcome the most complex current problems, and the degree of commitment to good manners when practicing it, let alone the focus on its importance for institutions of different activities.

10841101 INTRODUCTION TO MEDIA AND COMMUNICATION

This is an introductory course to the basic principles of mass communication concepts and theories. In addition, it introduces students to the mass media communication systems by providing them with an overview and comprehensive look at the origin and evolution of the mass media infrastructure and development of books, newspapers, cinema, radio, and television.

10846312 MEDIA RESEARCH

In this course, students are introduced to the steps of scientific research

in media, scientific problems and their analysis, feeling of the problem, identifying and formulating it. This is in addition to their sources and the criteria for choosing them; types of media research; approaches used to study media's problems, methods of collecting data; research of public relations and public opinion, media tools and public media tools.

10846212 RADIO PROGRAM FORM AND TEMPLATE PRODUCTION

This course aims at deepening students' understanding of basics of radio program preparation and presentation. Students learn how to identify the characteristics of radio programs, the technical templates and writing styles. Student also learn the basics of planning radio programs , forms and templates of the radio programs, methods of communication and interaction with listeners and ethics of radio work practice.

10846213 TV SCRIPT PREPARATION AND WRITING

In this course, students are trained on innovation skills, developing/ brainstorming TV ideas, nature of programmer's work and his/her role in the success of the program. Students are also trained on using the appropriate vocabulary in the writing of TV texts. The course ends with a look at TV channel programming policies and their translation into TV ideas.

10846215 TV PRODUCTION

This course gives a holistic view of the various equipment involved in the process of television production, as well as the definition of television systems and numerous elements productivity. It also focuses on the definition of studio, control room and the ancillary areas as well as the characterization of the domain that works within the television system.

10846216 TV SHOOTING 1

This course introduces students to the basics of TV shooting and identification of types of cameras and their parts, nature of the photographer's work, his/her role, qualifications, tools and responsibilities and skills. This course also dwells on the relationship between photography and light, directing, editing and montage, various types of shooting, internal and external, and type of shots. Students also learn how to control the quality, the personal safety procedures and the tools of safety, and identify the recurring problems and emergency cases. They also learn how to manage them, and how to recognize lighting means and employ them dramatically. The course concludes with confiscation lighting, its nature, its equipment, and its relationship with colors, methods of distribution, and TV lighting networks.

10846217 TELEVISION MONTAGE 1

This course introduces students to the basics and skills of TV montage: understanding of the stages of TV montage process and identification of the differences between the types of news editing and programming and

drama montage. The course also focuses on the characteristics of linear montage and its types, work of the monitor, his/her role, qualifications, tools, responsibilities and skills.

10846316 TV DIRECTING 1

This course highlights the importance of TV directing and its types, its bases and the role of television director, his/her responsibilities and permissions. This course ends with a look at the idea of programs directing (1 +1) and (1 +2) and (1 +3 and more) and the relationship between directing and lighting, shooting and montage.

10846218 RADIO AND TELEVISION PRESENTATION

In this course, student will be familiarized with the characteristics of TV and radio presentation and their methods; the basic principles and rules to present the news programs; the role of presenter in radio and television newsletter and his/her skills to deal with the OCR plan and manage teleprompter; the art of conducting TV dialogues in the news; types of news bulletins and their characteristics; the common mistakes in TV work and how to get rid of them; quality standards and procedures to achieve them; frequent problems and how to overcome them; the basic principles and rules of presenting talk shows; the role of talk show presenter; his/her roles and skills; planning and management of talk shows programs and writing talk shows introduction skills.

10846314 TV NEWS BULLETINS PRODUCTION

The purpose of this course is to train students on production of different forms of television news and mastering of news ordering skills, directing newsletter and employment of modern technology in newsletters and programs where the focus is on the art of writing news and news programs in Arabic and the writing of news text.

10846317 DOCUMENTARY FILM PREPARATION AND PRODUCTION

This course introduces students to documentary films in terms of their characteristics and their significance. The course will train students on how to plan for the documentary films, practice of the stages of producing documentaries. It will also train them on writing about documentary films, and deepening their understanding of the nature of relationship between the producer and director, and the way of conducting dialogues in the documentaries. The course ends with a look at shooting and montage documentaries.

10846413 PRACTICAL TRAINING

Students are to finish 576 hours of practical training (12 credits), equivalent to 90 days at media institutions under the supervision of a field trainer and in coordination with the academic supervisor. During training period, students are expected to produce media materials about his/her interaction with the training environment.

10846313 NEWS AND RADIO NEWS PROGRAMS

The course teaches student how to collect and draft radio news, produce

different forms of news, and direct and conduct radio news bulletins. Students are trained in this course on ways of arranging news within the bulletin. They are also introduced to fundamental analysis, types and methods of arrangement, political commentary, forms and arts of news programs.

10846214 AUDIO AND CONTROL TECHNOLOGIES

The course aims to train students on how to deal with the areas and volume of control molecules (studio) and comprehend the concepts and ABCs of control room (audios, audio montage unit); use of audio production equipment in the studio; use of sound mixer (mixer) professionally; voice recording systems. The students are also trained on using digital recording systems: sound mixer (Mixer), and montage of the news material; radio news models; montage news articles; radio report; the art of dialogue montages; radio program montage and radio magazine models.

10846315 RADIO DIRECTING

The course aims at teaching students new skills, and modern, advanced techniques in the world of radio directing, methods of developing imagination and artistic sense among the students. It also seeks to encourage them to create ideas in their work, lead team work, and produce dramas and other radio programs. Students will also learn the techniques of leading a team (performers and broadcasters), technical effects (music and sound effects) forms and arts of radio drama: and dramatic structure: the basics, considerations, ingredients and direct radio programs.

10846412 GRADUATION PROJECT

Under the supervision of the course professor, the students are to produce a project in the visual media; it may be on radio, television, multimedia or a media search. The project should embody the skills and knowledge that have been learned by the students during their undergraduate study. The project should be presented at the end of the term for evaluation by a special committee in the college.

10841352 INTERNATIONAL MEDIA

Upon completion of this course, the students will have completed the fourth component of the study of international media, in addition to what the students have learned in Palestinian Media, Arab Media, and Israeli Media courses. At this juncture, the student will have had some exposure to the formation and genesis of the major newspaper and its development along with magazine, radio and TV programs, international news agencies. Students will be able to analyze the position of the Palestinian and the Arab world media in comparison with Israeli-Zionist media. In this course students will learn how to deal with some important concepts of international media such as international publicity, international grooming and new world media order.

10841204 MEDIA LANGUAGE ENGLISH 1

Language is particularly important in journalism. It expands the journalist's ability to communicate, and give him/her the ability to vary his/her methods of gathering the information. There is no doubt that English language is particularly important in every country in the world, so this course aims at strengthening the students' English language skills: reading speaking listening, writing and translation.

10841302 PALESTINIAN MEDIA

This course provides students with an overview of the emergence of the Palestinian media and the development of its various branches, print press, radio and TV, at different stages of the history of the people at home and in Diaspora. The student will learn about the editorial policies of the various Palestinian media and the methods of managing them and recognizing the laws which they operate according to.

10841253 ISRAELI MEDIA

Palestinian and Arab media are always in a state of defense when it comes to the Israeli media whether in times of war or peace. This course aims at introducing students to then history of the most important Israeli media and its development, print and electronic in Arabic and Hebrew. The course looks at Israeli newspapers, magazines, radio stations, and TV channels by public or private media outlets. In addition, this course caps with a look at the nature of the Israeli media and its internal and external propaganda apparatuses.

10846152 WRITING FOR TELEVISION PICTURE

The course introduces students to the terms and rules governing the writing of the television image to let them gain the ability to write different templates of TV journalism. It also seeks to deepen the understanding of writing for a picture in the light of awareness of audiences' characteristics and their use of television journalism. The course also focuses on deepening the understanding of building intellectual and semantic written text, and building of a consensus between the semantics of text, and the sound and image.

10846254 TV GRAPHIC DESIGN

The purpose of this course is to build a creative vision especially for a TV screen through the blending of paragraphs and paragraph templates for various programs. To this end, students will learn how to use Adobe after effect program and Apple Motion, integrate images, writings and sounds. Psychological factors associated with television graphic design.

10846355 EDUCATIONAL TV PROGRAM PRODUCTION

The course begins with an introduction to the theory of educational television and modern schools of educational television, TV reading of educational curriculum, TV templates for educational programs. Then it moves to the

skills of converting an educational text to a TV template, the elements of attractions of the image in the educational programs (shots, graphics, video font, drama scenes, fixed and mobile drawings, and the artistic direction of the educational programs. The course concludes with a look at computer programs in the industry and presentation of educational programs.

10846358 - TV SHOOTING II

This course builds on Shooting I. It aims at deepening students' knowledge of the arts of internal and external TV shooting and the light, color and methods of controlling it, in addition to measuring the color temperature (Kelvin). It also introduces students to audio and natural sound, indoor and outdoor light, challenges posed by shooting news reports and ways of creativity.

10846352 - TELEVISION MONTAGE II

This course builds on Television Montage I. It aims at deepening students' understanding of the basics and principles of TV montage, developing their sense of visual artistic, a creative sense. Students are trained on the methods of montage of documentary films, news reports, talk shows, ads, and investigations. It ends with a look at the latest montage equipment.

10846453 - TV DIRECTING II

This course builds on TV Directing I. It aims at deepening the students' understanding of the principles and ethics underlying the work of the director and filmmaker in a work environment and work with the technical team inside the studio. The student will learn about the process of directing and its relationship with the rest of the roles inside the control room and the difference between news directing and talk shows.

10846151 - COMMUNICATION TECHNOLOGY

This course teaches students the most important stages of information transferring process and signals through different communication channels to enable them to identify the available frequencies, signal devices processing, configuring them to transport via satellite. It also teaches them about fiber lines, communication means etc. This is in addition to encryption of the signal and its storage in small spaces with a high quality. The course caps with a look at booked frequencies and lines via satellite.

10846354 - FOREIGN RADIO

Students are trained in this course on the kinds of foreign radio stations, the basic considerations of preparing religious, political, athlete, and technical subjects for foreign radio stations. The students also learn about the conditions and characteristics, shapes and radio arts that can be used in foreign radio stations and radio engineering and its role in the success of foreign radio.

10846351 LIVE AND BROADCASTING ON THE AIR

In this course, students are trained on the types of broadcasting, live broadcast from the studio, and interaction with the public, forms of live broadcasting from the studio and on the foreign radio stations, direct broadcasting, important events and needs of the public in light of competition kinds of foreign radio stations and ways of implementing them, radio engineering, engineering equipment necessary for effective implementation of direct broadcast.

10846452 SPECIALIZED RADIO PROGRAM PRODUCTION

The students, in this course, are introduced to the targets and philosophy of public radio broadcasting and specialized radio stations, basics and elements of producing children's and families' programs, youth and sports programs, adults program for people with special needs and educational programs.

10846253 – PRODUCING FILLERS AND RADIO PROMOS

This course is designed to train the students on production of promos and radio fillers. Students are introduced to the types of fillers and social promos, types of ads (goods and services), programs' fillers: introductions, program shows, and stages of promos production and fillers.

10846113 – EDITING AND TRANSLATING NEWS MATERIALS

This course teaches the fundamentals of translation and rules of translation from English to Arabic and vice versa. The course focuses on the electronic media language: the audio and visual one. The students are trained on the basics of dealing with foreign news sources and their immediate or deferred translation, taking into account the rules of English language media.

10846353 – RADIO DOCUMENTARIES

The purpose of this course is to train students on preparation and production of radio documentaries which are built on facts and usually tackle political, social, cultural, historical, and economic topics. The students learn how to use audio clips, music and natural sound to tell the true story and its aim: raising awareness and clarification of truth.

10846255 DECOR AND LIGHT

Students in this course learn the scientific basis of the design of light and implementation of décor: light and décor and its relevance to the form and content of the program, ways of integration between décor and the other elements (accessory, fashion and furniture); décor and its relationship to shooting and light; décor in the TV drama (relationship with computer applications in the décor and light; television programs décor, and décor with characters and events).

10846357 CINEMATIC FILM

The course aims at letting students understand the art of cinema and trains them on the process of preparing, producing and directing the cinematic film. The course focuses on the basic principles of cinema: the movement of the camera, shots, configuration within the picture and scenes, lighting, color, as well as the main principles of montage.

10841301 MEDIA IN ENGLISH II

This course underscores the importance of media language in English. It aims at improving and enhancing what the students have learned in Media I in various fields of literature, specialized press in politics, economy, society, technology, sports etc.

10846451 DESIGN TELEVISION ADS.

This course gives a comprehensive idea of the importance of television advertising, the methods of preparing and producing it. Students learn the basics, and principles of TV ads in terms of design, roles and major tasks; role of advertising in promotion of services, projects and ideas. This course concentrates on qualifying the designer to acquire the basic skills for TVC process design, and study: importance of advertising as a main element in marketing goods, services and ideas; types of ads in terms of the function performed in the society (business, non-commercial, software); knowledge sources; templates of TV ads; stages of television advertising production: collection of information, initial analysis, and identification of elements of productivity, devices and techniques used, the design mode

10311198 FRENCH I

This course aims to introduce the French alphabet, the way to write feminine and masculine words, its plurality and the components of the sentence: personal pronoun, verb, direct and indirect object. It also focuses on narration of daily events using tools such as drawing, and pictures. Moreover, class drills students' short answers: accepting, rejecting, thanking, apologizing and justifying answer.

10311299 FRENCH II

This course aims to teach the French language using modern teaching methods. At the end of this course, students are expected to hold simple conversation in French: introducing themselves and introducing others, writing simple sentences and conducting short dialogue.

10301116 HEBREW I

This course teaches basics and rules of the Hebrew language. Students are expected by end of the course to express themselves in writing and orally.

10301161 HEBREW II

Building on Hebrew I, this course aims at improving students' proficiency in Hebrew. The course will highlight the differences between the two languages: Hebrew and Arabic. The student is also trained to translate from Hebrew to Arabic and vice versa.

10841102 ARABIC MEDIA LANGUAGE

This course is considered as an introduction to the arts of journalistic writing and deals with the foundations and rules of Arabic used in the media. It also aims at supporting the students' linguistic competency and improve their ability to express their ideas and phrase them on paper, in a clear strong, flawless language. In this course, students are also introduced to the rules of grammar and syntax, such as: (the singular, plural, numbers,...), correct spelling, and the vocabulary of media.

「 Faculty of Agriculture and
「 Veterinary Medicine 」

{ Plant Production and Protection Department }

The Department of Plant Production and Protection offers a single major in plant production and protection. Students wishing to major in this field must finish a total of 140 credits. These include 18 university requirements, 3 free credits, 24 credits from the Faculty of Science, 82 departmental requirements and 13 electives.

The Program's Vision:

This program seeks to obtain a distinctive level in research and academia, which would go with the scientific evolution in the field of plant production and protection, within available resources.

The Mission:

To provide a distinctive college education in the field of plant production and production to provide the local community with qualified specialists in this field. To achieve that goal, this program works on constantly developing its course plans and bringing in highly qualified instructors and technicians. This program is also committed to improving the quality of education and scientific research in its graduate studies. In addition to that, this program constantly seeks to obtain a good international reputation and be a pioneer in its field.

The Objectives:

1. To produce trained and highly qualified graduates in the field of plant production and protection, who are capable of facing the challenges of the profession and compete with graduates of other universities.
2. To activate scientific research and publication on plant production and protection.
3. To serve the local community and supply it with the needed specialists in the area of plant production and protection.
4. To activate cooperation and partnership with local and international institutions that work in the same field.

The ILOs:

1. Knowledge and Comprehension ; General Knowledge Outcomes:
 - Knowledge of basic leadership and communication skills.
 - Knowledge of basic skills in human sciences and English Language.
 - Ability to serve and communicate with the local community.

Students acquire the previously mentioned skills by taking the university requirement courses such as English, Arabic...

Science- Related Learning Outcomes:

- To have the basic knowledge in the related sciences in order to be able to understand their major on scientific foundations.
- Students acquire the previously mentioned knowledge through the natural sciences

requirement courses, such as math, physics, and chemistry.

- Major -Related Outcomes; which are the ones students acquire through knowledge in their field of major, and are the foundations for plant production and protection.
- Students get the major –related outcomes through taking the program’s elective and compulsory courses, which aim at teaching the students the basic principles in plant production and protection, which include the following:
- The students’ ability to improve the quality and quantity of the crops and apply and manage the technologies of preserved agriculture.
- The students’ ability to diagnose and fight the diseases that hit the crops in a way that preserves the safety of the people and the environment.
- The students’ ability to establish and keep fruit orchards and apply modern techniques of irrigation.
- The students’ ability to guide and deal with farmers.
- The students’ ability to realize the agricultural reality in Palestine and the fields of work in agricultural production , through taking the following courses:
- General botany, principles of plant production, vegetable production, fruit trees production, ever-green tress production, ...

Applied Scientific Skills

1. Analytical Skills Outcomes : which are the skills students acquire through analyzing agricultural data and designing experiments, and they include:
 - The students’ ability to design agricultural experiments.
 - The students’ ability to analyze experiments.

The above mentioned skills are acquired through the compulsory and elective courses taught in the plant production program, namely, biostatistics and graduation project.

2. Applied Skills Outcomes: which are the skills students acquire through the application and practice of knowledge I plant production and protection, and they include the students’ ability to apply the basic concepts they learn in the compulsory and elective courses which the program of plant production and protection has to offer.
3. Research Skills Outcomes :which are the skills students acquire through writing reports and conducting scientific research from different sources such as books and electronic resources , and they include the following :
 - The students’ ability to write a scientific research that summarizes a scientific experiment.
 - The students ‘ability to collect data from the internet and research papers, and to reach conclusions about them.
 - Students learn the above mentioned skills through taking courses of research methodology, and seminar.

Potential Fields of Work for the Graduates:

1. Agricultural research stations for the ministry of agriculture.
2. Research centers as specialized researchers in plant production.
3. Companies and institutions that deal work in the field of agricultural extension.
4. International organizations that deal with countryside development and plant production.
5. Private projects in plant production.
6. Customs.
7. The ministry of environmental affairs.
8. The ministry of education.

University Requirements (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
10032100	Remedial English		
10001011	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	10032100
11000105	Palestinian Studies	3	-
11000108	Community Service	1	-
11000117	Leadership and Communication Skills	1	-
11000127	Introduction to Computer Science	1	-
11000322	University English II	3	11000103

Departmental requirements (119 hours)

I. Compulsory courses - Faculty of Science (24 credits)

Course #	Course title	Credit hours	Hours weekly		Prerequisite
			Theory	Lab.	
10221103	General Mathematics	3	3	-	-
10222109	General Physics	3	3	-	-
10223101	General Chemistry I	3	3	-	-
10223102	General Chemistry II	3	3	-	10223101
10223107	General Chemistry (Lab-I)	1	-	3	-
10223108	General Chemistry (Lab-II)	1	-	3	10223107
10223233	Organic Chemistry	3	3	-	10223102
10225202	Biostatistics	3	3	-	10221103
10911206	Genetics	4	3	2	10911101+10916101
10911207	Genetics Lab	0	-	2	Concurrently with 10911206

2. Compulsory Departmental requirements (82 credits)

Course #	Course title	Credit hours	Hours weekly		Prerequisite
			Theory	Lab.	
10911101	General Botany	4	3	2	-
10911102	General Botany Lab	0	-	2	Concurrently with 10911101
10911201	Principles of Plant Production	3	3	-	10911101
10911202	Entomology	3	2	2	10911101
10911203	Entomology Lab	0	-	2	Concurrently with 10911202
10911204	Principles of Soil Science	3	2	2	10222109
10911205	Principles of Soil Science Lab	0	-	2	Concurrently with 10911204
10911208	Vegetable Production	3	2	2	10911201
10911209	Vegetable Production Lab	0	-	2	Concurrently with 10911208
10911210	Fruit Tree Production	3	2	2	10911201
10911211	Fruit Tree Production Lab	0	-	2	Concurrently with 10911210
10911212	Microbiology	3	2	2	10911101 10916101+
10911213	Microbiology Lab	0	-	2	Concurrently with 10911212
10911301	Field Crop Production	3	2	2	10911201
10911302	Field Crop Production Lab	0	-	2	Concurrently with 10911301
10911303	Ornamental Plants and Gardening	3	2	2	10911201
10911304	Ornamental Plants and Gardening Lab	0	-	2	Concurrently with 10911303
10911305	Plant Physiology	3	2	2	10911201
10911306	Plant Physiology Lab	0	-	2	Concurrently with 10911305
10911307	Plant Propagation and Nurseries	3	2	2	10911201
10911308	Plant Propagation and Nurseries Lab	0	-	2	Concurrently with 10911307
10911309	Plant Pathology	3	2	2	10911201
10911310	Plant Pathology Lab	0	-	2	Concurrently with 10911309
10911311	Economic Entomology	3	2	2	10911202
10911312	Economic Entomology Lab	0	-	2	Concurrently with 10911311
10911313	Irrigation and Drainage Systems	3	2	2	10911204
10911314	Irrigation and Drainage Systems Lab	0	-	2	Concurrently with 10911313
10911315	Agricultural Machinery	2	2	-	10221103
10916317	Scientific Research	2	2	-	10225202
10911401	Protected Agriculture Management	3	2	2	10911208 + 10911309
10911402	Protected Agriculture Management Lab	0	-	2	Concurrently with 10911401
10911403	Principles of Plant Breeding	3	2	2	10911206
10911404	Principles of Plant Breeding Lab	0	-	2	Concurrently with 10911403
10911405	Integrated Pest Management	2	2	-	10911309 + 10911311
10911406	Plant Nutrition	3	2	2	10911305
10911407	Plant Nutrition Lab	0	-	2	Concurrently with 10911406
10911408	Molecular Biology	3	2	2	10911206+10911305
10911409	Molecular Biology Lab	0	-	2	Concurrently with 10911408
10911410	Seminar in Plant Production and Protection	1	1	-	Dept's approval
10911411	Graduation Project in Plant Production and Plant Protection	1	1	-	Dept's approval
10911412	Training in Plant Production	6	-	18	Dept's approval
10911413	Training in Plant Protection	2	-	6	Dept's approval
10911414	Training in Agricultural Machinery	2	-	6	Dept's approval
10916101	Zoology	4	3	2	-
10916102	Zoology Lab	0	0	2	Concurrently with 10916101
10926211	Principles of Agricultural Economics	3	3	-	10221103
10926226	Agriculture in Palestine	2	2	-	-

3. Department elective courses (13 credit hours)

Course #	Course title	Credit hrs	Hours weekly		Prerequisite
			Theory	Lab.	
10911350	Organic Farming	2	2	-	10911201
10911351	Principles of Forestry	3	2	2	10911201
10911352	Principles of Forestry Lab	0	-	2	Concurrently with 10911351
10911353	Forage Crop Production	3	2	2	10911201
10911354	Forage Crop Production Lab	0	-	2	Concurrently with 10911353
10911355	Special Topics	3	3	-	10911201
10911356	Agricultural Pesticides	2	2	-	10223233
10911450	Evergreen Fruit Tree Production	2	2	-	10911210
10911451	Post-harvest Physiology	2	2	-	10911208 + 10911210 + 10911303
10911452	Biotechnology	3	3	-	10911206
10911453	Land Reclamation	2	2	-	10911204
10911454	Apiculture	3	2	2	10911202
10911455	Apiculture Lab	0	-	2	Concurrently with 10911454
10916420	Biochemistry for Ag. Students	3	3	-	10223233
10926241	Agricultural Extension	3	3	-	10926211
10926322	Marketing Agricultural Products	3	3	-	10926211

Course Descriptions

10911101 GENERAL BOTANY

This course deals with plant cells and tissues, plant structure, anatomy and the function of plant organs (root, stem, leaf flower, fruits and seed); plants and energy; nutrition and transport; plant classification and plants ecology. In the laboratory students will study the anatomy of plant tissues, both simple and complex, in addition to the structure of stem, root, leaf, flower, fruit and seeds of higher plants.

10911201 PRINCIPLES OF PLANT PRODUCTION

This course deals with the relationships between humans and plants, the development of plant usages, the structure and functions of different plant parts, methods of plant propagation, plant classification, growth regulators, environmental factors (soil, temperature, water and light) and their effects on plant production, photosynthesis, respiration and translocation, in addition to the effects of pests and weeds on plant productions systems.

10911202 ENTOMOLOGY

This course deals with insects morphology, internal anatomy and biology, external form, functions and body extras, as well as their changes to suit their environment; insect order and behavior, their types and environmental factors influencing their numbers and their classification. The course ends with an examination of ways of fighting these harmful insects by using chemical pesticides and other ways, in addition to damages resulting from insects and their control. The practical part of the course includes observation, during the laboratory sessions, of different types of insect's antennae and their modifications, mouthparts and their modifications, legs and their modifications, wings and their types and abdominal appendages and their types. It also includes observation of some internal organs of the insects and their parts. In addition to that, the students are expected to identify different types of insects' larvae and pupae. They are also expected to collect insects and classify them according to the major groups of the insects.

10911204 PRINCIPLES OF SOIL SCIENCE

This course deals with a number of topics including definition of soil, its types and composition, its important relationship with agriculture; its physical, chemical and mineral properties, underground water, soil conservation,

plant nutrition, and nutrients, organic material, soil microorganisms, land partition, principles of soil-water and plant relationship, soil moisture and its measurement and evaporation. In the lab, soil analysis will be carried out for physical and chemical properties.

10911206 GENETICS

This course deals with the principles and experimental evidence leading to our understanding of the gene concept and the role of DNA as genetic material, patterns of inheritance, the relationship between genotype and phenotype, and transmission, coding, and expression of genetic information. In the practical part of this course students will cover the experiments on mitosis and meiosis, blood groupings, Barr body, mendelian inheritance mutation in *Drosophila* and genetic analysis including DNA isolation and PCR application.

10911208 VEGETABLE PRODUCTION

This course is a study of vegetables in terms of their economic importance and nutritional value, plant taxonomy, appropriate environmental conditions, culture, agricultural operations pertinent to their production, transport, storage, agricultural techniques and their timing, drought, irrigation and protected conditions. In the lab, students will learn how to give a botanical description of vegetables, establish fields starting from seeding and planting, propagation, spacing, cultural practices (replanting, thinning, irrigation, fertilization, training and pruning, harvest and handling, growth regulators) to production structure.

10911210 FRUIT TREE PRODUCTION

This course provides instruction on the skills necessary for fruit tree planting and production in terms of goals, location, suitable soil, choice of appropriate varieties, preparation of land for planting, systems or methods of planting and breeding, fruit blossom growth, maturity and picking, weeds resistance and frost. The course also highlights fruit trees planted in the region. In the lab sessions, students will be able to select an orchard site, rootstock, and species. Also during these sessions, the students will practice orchard planning, spacing and planting, training and pruning, and fruit thinning. The students will also learn about the botanical description of fruit trees.

10911212 MICROBIOLOGY

This course deals with the scientific foundation of agricultural microbiology. Students will be briefed on the history of microbiology, classification of microbes, techniques and methods used in studying microorganisms. The course is also a detailed study of different groups of microorganisms, with respect to structure and physiology. The course will end with an application of microbiology in the field of soil, food, dairy, water, plant pathogen and health.

10911301 FIELD CROP PRODUCTION

This course covers the following topics: history and development of field crops in the world, growing important crops such as legumes, wheat, barley, yellow maize and white millet, and oats, growing other crops such as beans, lentils, chickpeas and soya beans; areas of production, environmental needs, nutritional value, methods of upgrading productivity/efficiency under irrigation and rainfall conditions.

10911303 ORNAMENTAL PLANTS AND GARDENING

This course is a study of cut flowers, potted flowering plants and bulb plants in term of propagation, environmental requirements, cultural practices and marketing. In the lab sessions, the students will be able to apply principles and steps of landscaping, understand and take care of landscape and indoor plants. This is in addition to the establishment and maintenance of lawns.

10911305 PLANT PHYSIOLOGY

This course examines the soil-plant relationship in terms of the diffusion process, osmosis potential, water absorption, water translocation processes, metabolism processes, and photosynthesis in terms of its mechanism and occurrence, nutrient absorption, plant hormones (photo-hormone), growth, nutrient transfer, plant growth regulating substances, dormancy and germination.

10911307 PLANT PROPAGATION AND NURSERIES

This course deals with the basic techniques and practical skills for propagation of fruit trees, ornamental plants and vegetables. These propagation methods include sexuality and vegetative of various types (cuttings, grafting and budding, layering, specialized structure and micro-propagation). The course also concentrates on using agricultural installations such as green houses, and other different agricultural environments for propagation purposes. During the laboratory sessions students will implement the different methods of propagation: sexual and vegetative methods.

10911309 PLANT PATHOLOGY

This course is a study of plant diseases (fungal, bacterial, viral, etc.) and ways of their development and occurrence, and the relationship between the cause and effect as well as the influence of environmental factors on plants starting from their growth, up to storage and marketing. The course also looks at the cycle of disease incidence, ways of its resistance with special emphasis on some of the diseases that damage agricultural crops in the regions, in terms of symptoms, cycles, development and eventual control methods used to combat them. The practical part of the course includes preparation by the students of some artificial culture media for certain causal agents of plant diseases after their isolation from infected plants. Also, the students examine,

diagnose and then describe the symptoms of diseases on infected plants with fungal, bacterial and viral pathogens.

10911311 ECONOMIC ENTOMOLOGY

This course deals with the identification of insects which cause economic damage to plants including a description of insects and their life cycle and type of damage-control measures. It covers pests from the following orders: homoptera, hemiptera, thysanoptera, diptera, coleopteran, Lepidoptera and hymenoptera. The practical part of the course includes observation by the students, during the laboratory sessions, of different types of insects that can cause economic damage to crops. During the observation, the students also describe the insect and the stage(s), type(s) of damage caused by the insect after bringing the infested plant parts into laboratory.

10911313 IRRIGATION AND DRAINAGE SYSTEMS

This course deals with water flow in pipes and canals, irrigation systems and installations, measurement of irrigation water, surface water, sprinkle irrigation, drip irrigation, programming and management of irrigation systems, water quality and salinity and the basics of agricultural drainage. Students also learn about soil-water relationships, ground water and water wells, agriculture and drainage.

10911315 AGRICULTURAL MACHINERY

This course deals with types of agricultural machinery and equipment, in terms of its importance, and manner of their work, hydraulic and power transmission and economic performance with focus on equipment of soil preparation, sowing, harvesting and protection and ways of choosing equipment needed to work on a farm. The course will also study farm tractor engines, fuel systems, cooling, electricity, transmission and identification of technical problems in farm tractors.

10916317 SCIENTIFIC RESEARCH

This course deals with research methodology and research tools, literature review and research paper writing in plant production and protection.

10911401 PROTECTED AGRICULTURE MANAGEMENT

This course highlights the importance of protected agriculture and types of greenhouses in term of design, components, installation and maintenance, agricultural practices and operations inside greenhouses, their impact on increasing production and improving quality of various crops and the use of modern technologies in protected agriculture.

10911403 PRINCIPLES OF PLANT BREEDING

This course deals with the principles of genetics directly related to plant breeding, and methods and techniques used in this area; selection methods

for self-pollinated and cross-pollinated crops to increase productivity and disease resistance. This in addition to modern techniques in plant breeding focusing on marker- assisted selection.

10911405 INTEGRATED PEST MANAGEMENT

This course introduces students to the basic concepts of integrated pest management emphasizing ecological principles, integration of chemical, biological, cultural, and physical tactics into an overall strategy for the agro-ecosystem. It is also a study of pesticides, cultural practices, host resistance, biological control, sterility principles and economics of pest control and pest/host relationships.

10911406 PLANT NUTRITION

Topics covered in this course include plant growth factors, plant nutrient elements and their relationship with productivity, fertilization of plants, methods of adding these elements and their availability in plants. These elements include nitrogen, phosphorus, potassium, calcium, magnesium and other trace elements. The course will also deal with organic fertilizers (manure) and their role in improving soil quality, fertility and plant production.

10911408 MOLECULAR BIOLOGY

This course is a study of the principles of molecular biology and its application in biotechnology, biological material and general techniques in molecular biology, PCR, enzymes, hybridization, vectors, gel electrophoresis of DNA, cloning, sequencing, modification of DNA, genome analysis, gene expression analysis, transgenic plants and animals, principles, procedures, objectives, hazards on human and environment, laws and ethics.

10911410 SEMINAR IN PLANT PRODUCTION AND PROTECTION

This course is an opportunity for the student to collect and analyze data about a particular subject related to his/her interest. This will train him/her to link information in various fields and put it in a scholarly fashion. In this seminar, each student is expected to make a presentation and discuss the topic of his/her choice.

10911411 GRADUATION PROJECT IN PLANT PRODUCTION AND PLANT PROTECTION

This course aims to give students the opportunity to prepare a graduation project under a staff member's supervision. This project will be evaluated by the staff committee in the department.

10911412 TRAINING IN PLANT PRODUCTION

This course aims to give students the opportunity to develop specific skills in the field of plant propagation, plant production and practical application of all the information and experiences obtained in plant production. It also includes academic visits off campus in order to identify the status of agriculture and the methods and techniques used in plant production in Palestine.

10911413 TRAINING IN PLANT PROTECTION

This practical course aims at training the students for preparation and spraying various agricultural pesticides including insecticides, fungicides and herbicides. It also includes diagnosis and identification of pests and diseases that should be sprayed with the above pesticides. The practice also includes how the spraying equipment, such as knapsack sprayers, tractor mounted sprayers, should be used.

10911414 TRAINING IN AGRICULTURAL MACHINERY

This practical course aims to train students on driving the tractor and its daily maintenance. This is in addition to the use and maintenance of different agricultural machinery and implements.

10916101 GENERAL ZOOLOGY

This course introduces students to the study of zoology at the cellular, organism and function levels. It begins by providing the students with an introduction to areas of evolution, reproduction, development, animal diversity and ecology. The Laboratory element allows students to become familiar with the form and function of major animals phyla through observation of living animals, prepared slides and models.

10926211 PRINCIPLES OF AGRICULTURAL ECONOMICS

This course deals with economic principles such as the relationships among production inputs and the relationship between inputs and outputs. The course also introduces students to productivity, production laws, costs, status of agriculture in the economic statement and qualities characterizing work in agriculture. The course ends with a look at various branches of agricultural economics with emphasis on agricultural policies adopted by some Arab countries.

10926226 AGRICULTURE IN PALESTINE

This course deals with the development and importance of agriculture at international, Arab and local levels. The course covers agricultural climate, production elements, plant production in irrigated and rainfall areas. In addition, the course looks at animal production, market product, agricultural mechanization, agricultural institutions, agricultural problems in the region and modern and developed agricultural projects.

10911350 ORGANIC FARMING

This course deals with organic farming in terms of definitions, objectives, organizations, legislation, standards, soil biological activity and soil management, carbon cycling, organic matter and residue management, cropping design principles, rotations, green manures and poly-cultures, crop protection - weeds, pests and diseases, certification and marketing of organic food, organic farming and society, food quality and the environment.

10911351 PRINCIPLES OF FORESTRY

This course deals with the economic and environmental significance of trees, objectives and methods of afforestation, afforestation ecology, environmental factors and their influence on forest growth, development and expansion. The course also looks at forest nurseries, afforestation methods, forest measurement, and ways of protecting forests from pests and diseases.

10911353 FORAGE CROP PRODUCTION

This course deals with the economic importance and nutritional value of green forage crops, history of their development, plant description and environmental requirements, methods of production, ways of green crop storage, production of seeds and appropriate crops grown in arid areas and mechanization of forage production.

10911355 SPECIAL TOPICS

Topics covered in this course include plant production and protection, soil science and other related sciences which have not been covered or have been marginally covered in other courses.

10911356 AGRICULTURAL PESTICIDES

This course deals with agricultural pests, different pesticides, ways of fighting and killing these pests chemically, the economic importance of pesticides, history of pesticides, their types, formulation, application techniques, registration of pesticides and registration laws and problems arising from the use of agricultural pesticides.

10911450 EVERGREEN FRUIT TREE PRODUCTION

This course deals with production of evergreen fruit trees in the region, the importance of studying these trees, their adaptation, varieties (cultivars) and their suitability for the environment, flowers, fruits, types, appropriate varieties, garden management, selection of new types, water needs with emphasis on olive, citrus, and aligat trees in particular. The course ends with an examination of orchard management.

10911451 POST- HARVEST PHYSIOLOGY

This course is a study of post-harvest biochemical changes in fruits, vegetables, and flowers; physical and physiological basis for handling and storage practices, perishable organ ontogeny and physiological disorders; post-harvest environment requirements including handling, refrigerated storage and chemical treatments.

10911452 BIOTECHNOLOGY

This course addresses genetic engineering methods and applications to develop higher-yielding and more nutritious crop varieties, improve resistance to disease, or to reduce the need for fertilizers and other expensive agrochemicals.

10911453 LAND RECLAMATION

This course deals with land and water resources in Palestine, classification of lands, areas, and importance of land suitable for reclamation. The course also deals with factors behind a drop in land productivity, sources of solvent salts in soil, saline soil, and ways of reclaiming it, sodium and alkaline soils and their reclamation, boron-rich soil and its reclamation and assessment of irrigation water use.

10911454 APICULTURE

This course highlights the importance of beekeeping in the world and especially in Palestine. The course begins with the history and development of beekeeping nationally and internationally. Then it moves to consider bee colonies, their casts, and life history; the honey bee breeds (strains); beekeeping equipment; anatomy of honeybees; internal and external activities; beehive and queen management. The course ends with removal and marketing of the crop and infectious and non-infectious honey bee pests.

10916321 BIOCHEMISTRY FOR AG. STUDENTS

This course is an introduction to biochemical molecules in cells; energy metabolism, metabolism of carbohydrates, fats, proteins, and other nutrients.

10926241 AGRICULTURAL EXTENSION

This course is a study of the development and origin of agricultural extension, its goals and philosophy affecting its effectiveness. The student will be provided with information that helps in the preparation of extension service programs and their evaluation. This course also looks at the history of agriculture extension in the West Bank and Gaza Strip, its goals, functions, current state of affairs, and ways of increasing its effectiveness.

10926322 AGRICULTURAL MARKETING

This course introduces activities related to transfer of agricultural produce from producers to consumers. In this context, students are introduced to all efforts devoted to transfer, storage, and packaging of agricultural produce. Students are also introduced to other marketing services, such as funding, selling and purchasing in the agricultural markets in the West Bank and the Gaza Strip, and the intermediaries. This course ends with consideration of the marketing costs, marketing efficiency, and final agricultural marketing purposes.

Program Staff Members:

Full Professor		
Name	Specialization	University of Graduate
Prof. Yacoub A. Batta	Plant Pathology & Agricultural Entomology	Institut National Agronomique De Paris-Grignon - Paris University. 1991

Associate Professor		
Name	Specialization	University of Graduate
Dr. Hassan Abu-Qaoud	Plant tissue culture	University of Illinois , 1989

Assistant Professor		
Name	Specialization	University of Graduate
Dr. Munqez J Y Shtaya	Plant Breeding	University of Cordoba, Spain , 2005
Dr. Azzam S. Tubaileh	Crop Physiology	University of Las Cruces N.M. , 1985
Dr. Heba Mueen Al-Fares	Quantitative Genetic in Plant	The University of Jordan , 2010

Instructor		
Name	Specialization	University of Graduate
Mr. Faisal M.a.Shraim	Plant Production	University of Jordan , 1993

{ Animal Production and Health Programme }

The Vision:

The vision of this program is only a part of the common vision of all the departments of the university, as it seeks to provide distinctive university education in the field of animal production to serve the agricultural sector in Palestine and the Arab world. The program also seeks to obtain a good international reputation and remain a pioneer in the field of education and scientific research.

The Mission of the program and its relation to that of the faculty and university:

The mission of this program is also a part of the common mission to the departments in the university, as it seeks to supply the local and Arab market with qualified specialists and teachers and provide them with the individual skills and distinct scientific knowledge. It also aims at improving the quality of education and research in the field of animal/agricultural field, and contributing in the achievement agricultural development and food security.

The general and specific objectives:

1. To serve the local community and supply it with qualified specialists in the field of animal production.
2. To contribute in the achievement of agricultural development and food security.
3. To activate scientific research in the field of animal production.
4. The development of agricultural education.

The ILOS:

1. Knowledge and understanding of the sciences related to animal production.
2. Mental (cognitive) skills: which include the realization of the reality and problems that face the animal/agriculture sector and coming up with suitable solutions to them.
3. Practical skills , which include :
 - Knowledge in the methods of breeding and managing far animals.
 - Knowledge and understanding of the bases of scientific research.
4. Transmitted skills: which include knowledge in languages and the ability to communicate with the workers in the field of animal production and provide them with the technical counseling.
5. Communication and technology skills: which include the ability to use the technologies related to the animal sector and the use of compute.
6. The moral and ethical skills: which include :
 - The students 'ability to take professional responsibility and engage in group work.
 - To display the spirit of belonging to the land, nation, and the ability to reinforce the farmers consistency and attachment to their lands.

Study Plan

No.	Course type	Credits	
1	University Requirements	18	
2	Faculty of Science Requirements	24	
3.	Free Courses	3	
3	Department Requirements (95 credits)	Compulsory courses	79
		Elective courses	16
Total		140	

University Requirements (18 credits)

Course #	Course title	Credits	Prerequisite
11003210	Remedial English	.	
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	Remedial English
11000105	Palestinian Studies	3	
11000108	Community Service	1	
11000117	Leadership and Communication Skills	1	-
11000127	Introduction to Computer Science	1	-
11000322	University English II	1	11000103

Faculty of Science Requirements (24 credits)

Course #	Course title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10211103	General Mathematics	3	3	-	-
10221109	General Physics	3	3	-	-
10231101	General Chemistry I	3	3	-	-
10231102	General Chemistry II	3	3	-	10231101
10231107	General Chemistry (Lab-I)	1	-	2	-
10231108	General Chemistry (Lab-II)	1	-	2	10231107
10223211	Analytical Chemistry	3	3	-	10231108+10231102
10231211	Analytical Chemistry (Lab)	1	-	2	10223211
10223233	Organic Chemistry	3	3	-	10231102
10225202	Biostatistics	3	3	-	10211103

Free courses (3 credit hours)

Department compulsory requirements (79 credit hours)

Course #	Course Title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10911101	General Botany	4	3	2	-
10911102	General Botany (Lab)	0	-	2	10911101
10911206	Genetics	4	3	2	10911101; 10916101
10911207	Genetics (Lab)	0	-	2	concurrently with 10911206
10911212	Microbiology	3	2	2	10911101; 10916101
10911213	Microbiology (Lab)	0	-	2	concurrently with 10911212
10916101	General Zoology	4	3	2	-
10916102	General Zoology	0	-	2	concurrently with 10916101
10916203	Principles of Animal Production	3	3	-	10916203
10916204	Poultry Production	3	2	2	10916203
10916205	Poultry Production (Lab)	0	-	2	concurrently with 10916204
10916206	Sheep and Goat Production	3	2	2	10916203
10916207	Sheep and Goat Production (Lab)	0	-	2	concurrently with 10916206
10916308	Dairy Cattle Production	3	2	2	10916203
10916309	Dairy Cattle Production (Lab)	0	-	2	concurrently with 10916308
10916310	Feeds and Feeding	3	2	2	10916203
10916311	Feeds and Feeding (Lab)	0	-	2	10916310
10916312	Poultry Nutrition	2	2	-	10916204
10916313	Animal Physiology	3	2	2	10916101
10916314	Animal Physiology	0	-	2	concurrently with 10916312
10916315	Physiology of Reproduction and Artificial Insemination	3	2	2	10916313
10916316	Physiology of Reproduction and Artificial Insemination (Lab)	0	-	2	concurrently with 10916315
10916317	Methods of Scientific Research	2	2	-	10225202
10916318	Animal Health and Diseases	3	2	2	10916203
10916319	Animal Health and Diseases (Lab)	0	-	2	concurrently with 10916318
10916321	Biochemistry for Ag. Students	3	3	-	10223233
10916422	Ruminant Nutrition	2	2	-	10916310
10916423	Animal Breeding	3	3	-	10916203
10916424	Poultry Diseases	2	1	2	10916204
10916425	Poultry Diseases (Lab)	0	-	2	concurrently with 10916424
10916426	Computer Applications in Animal Production	1	-	2	Dept. approval
10916427	Animal Biotechnology	2	2	-	10911206
10916428	Seminar in Animal Production	1	1	-	Dept. approval
10916429	Production of Meat Animals	2	2	-	10916308; 10916206
0916430	Poultry Management	2	2	-	10916204
10916431	Field Training in Animal Production –Dairy Cattle	2	-	4	Dept. approval
10916432	Field Training in Animal Production- Sheep and Goats	2	-	4	Dept. approval
10916433	Field Training in Animal Production- Poultry	2	-	4	Dept. approval
10916434	Field Training in Animal Production-Feeds and Feeding	2	-	4	Dept. approval
10916435	Field Training in Animal Production-Animal Health	2	-	4	Dept. approval
10916436	Research Project	1	1	-	Dept. approval
10926211	Agricultural Economics	3	3	-	10221103
10926226	Agriculture in Palestine	2	2	-	-

Department elective courses (10 credit hours)

Course #	Course title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10911353	Forage Crop Production	3	2	2	10911203
10911354	Forage Crop Production (Lab)	0	-	2	concurrently with 10911353
10911454	Apiculture	3	2	2	10916101or 10911202
10911455	Apiculture (Lab)	0	-	2	concurrently with 10911454
10911350	Selected Topics in Animal Production	3	3	-	10916204; 10916206
10916351	Organic Animal Production	2	2	-	10916203
10916352	Fish Farming	3	2	2	10916203
10916353	Fish Farming (Lab)	0	-	2	concurrently with 10916352
10916354	Animal Behavior	2	2	-	10916308; 10916206
10916455	Animal Installations	3	3	-	10916203
10916456	Parasitology	3	2	2	10916318
10916457	Parasitology (Lab)	0	-	2	concurrently with 10916456
10921308	Meat Technology	3	2	2	-
10921309	Meat Technology (Lab)	0	-	2	
10921310	Dairy Processing	3	2	2	10911212
10921311	Dairy Processing (Lab)	0	-	2	concurrently with 10921310
10926241	Agricultural Extension	3	3	-	10926211
10926322	Agricultural Marketing	3	3	-	10926211

Course Descriptions

10911101 GENERAL BOTANY

This course deals with plant cells and tissues, plant structure, anatomy and function of plant organ (root, stem, leaf flower, fruits and seed) plants and energy nutrition and transport, plant classification, plants ecology. In the laboratory, students will study the anatomy of plant tissues, both simple and complex, in addition to the structure of stem, root, leaf, flower, fruit and seed of higher plants.

10911206 GENETICS

This course deals with the principles and experimental evidence leading to our understanding of the gene concept and the role of DNA as genetic material. Patterns of inheritance, the relationship between genotype and phenotype, and transmission, coding, and expression of genetic information are also included. In the practical part of this course, student will do experiments on mitosis and meiosis, blood group, Barr body, mendelian inheritance mutation in *Drosophila* and genetic analysis including DNA isolation and PCR application.

10911212 MICROBIOLOGY

This course deals with the scientific foundation of agricultural microbiology. It also provides the students with a brief history of microbiology, classification of microbes, techniques and methods used in studying microorganisms. The course also provides a detailed study of different groups of microorganisms, with respect to their structure and physiology. The course ends with application of microbiology in the field of soil, food, dairy, water, and plant pathogen and health area.

10911353 FORAGE CROP PRODUCTION

This course highlights the economic importance and nutritional value of green forage crops, history of their development, plant description and environmental requirements, methods of production, ways of green crop storage, production of seeds and appropriate crops grown in arid areas and mechanization of forage production.

10911454 APICULTURE

This course focuses on importance of beekeeping in the world and in Palestine in particular. It also focuses on history and development of beekeeping

nationally and internationally. Topics treated in the course include the bee colony, its casts, and life history, the honey bee breeds (strains) beekeeping equipment, anatomy of honeybees, internal and external activities, and beehive and queen management. The course concludes with removing and marketing the crop, and infectious and non-infectious honey bee pests.

10916101 GENERAL ZOOLOGY

This course introduces students to the study of zoology on the cellular, organism and function levels. It will provide the students with introduction to areas of systematics, evolution, reproduction, development, animal diversity and ecology. The laboratory part allows students to become familiar with the form and function of major animal phyla through observation of living animals, prepared slides and models.

10916203 PRINCIPLES OF ANIMAL PRODUCTION

This course deals with the role of farm animals in providing food and other produce to the human being. Animal produce includes milk, meat, wool, eggs and leathers. The course also familiarizes students with the basic terminology common to animal science. The course ends with a look at common breeds of farm animals, the basic scientific principles of feeding, reproduction, breeding and management of farm animals

10916204 POULTRY PRODUCTION

This course addresses the poultry industry in Palestine. It focuses on major poultry breeds, poultry digestive and reproductive tracts, egg incubation and hatching, production of layers and broilers, feeding and housing and management systems, and marketing poultry products.

10916206 SHEEP AND GOAT PRODUCTION

This course discusses the economic importance of sheep and goats. It also deals with the study of local and world breeds of sheep and goats, establishment of sheep and goat farms, systems of breeding and production, management of reproduction, feeding and fattening.

10916308 DAIRY CATTLE PRODUCTION

This course highlights the economic importance of milk and its products, pure breeds and dual-purpose breeds of dairy cattle, characteristics of the dairy animal, lactation curve and factors influencing milk production and composition, selection and genetic improvement in dairy cattle. The course also emphasizes housing systems and the main aspects of creation, management and running of dairy cattle farms.

10916310 FEEDS AND FEEDING

This course is a study of chemical composition and types of feeds, digestion and metabolism, feed requirements, energy, protein, fiber, minerals and their importance, systems of feeding, ration formulation and evaluation of feeds.

10916312 POULTRY NUTRITION

This course discusses digestion, absorption, and metabolic processes in poultry; feed ingredients and requirements according to stages of growth and production as well as the effects of nutrient deficiency. The course also looks at description of feeds used in poultry nutrition and preparation of poultry rations. The course ends with a look at the different feeding systems.

10916313 ANIMAL PHYSIOLOGY

This course deals with the study of the physiological functions of the respiratory, digestive, urinary, reproductive and endocrine systems. The course also covers the hormonal and nervous regulation and blood supply of these systems and the physiological relationships among them.

10916315 PHYSIOLOGY OF REPRODUCTION AND ARTIFICIAL INSEMINATION

This course deals with the study of the functions of reproductive organs of farm animals, endocrine glands and hormonal regulation of reproduction, synchronization of estrus and improvement of reproductive performance of farm animals, collection, testing, refrigeration and freezing of semen, methods and techniques of artificial insemination in all farm animals.

10916317 METHODS OF SCIENTIFIC RESEARCH

This course deals with the study of basic concepts of scientific research, research methods and scientific writing.

10916318 ANIMAL HEALTH AND DISEASES

This course is a study of the health and diseases of animals, influence of the environment; description of common diseases in the region, symptoms of disease, methods of diagnosis, prevention and treatment of bacterial, viral and parasitic diseases affecting farm animals.

10916320 ANIMAL FARM MANAGEMENT

This course covers topics like establishment of farm animals, farm animal husbandry systems: poultry, meat animals, dairy cattle, record-keeping, and marketing agricultural produce.

10916321 BIOCHEMISTRY FOR AG. STUDENTS

This course begins with an introduction to biochemical molecules in cells. It then moves to energy metabolism, metabolism of carbohydrates, fats, proteins, and other nutrients.

10916350 SELECTED TOPICS IN ANIMAL PRODUCTION

This course covers topics in animal production which have not been covered or have been marginally covered in other courses.

10916352 ORGANIC ANIMAL FARMING

This course provides an introduction to organic farming in the field of animal production, laws and regulations for production of organic food, importance of organic food, systems used in production of organic food from animals, animal welfare, and marketing organic food.

10916353 FISH FARMING LAB

This course covers several topics: importance of developing fish resources in Palestine, types and qualities of fish, basics of fish husbandry, management, nutrition, breeding, improvement and hatching. The course also examines qualities of water and their relationship with fish production, fishing and methods of storage.

10916354 ANIMAL BEHAVIOR

This course discusses the importance of fish and fundamentals of aquaculture, fish farming, nutrition, husbandry, hatching, water management and fish products and fish hunting.

10916422 RUMINANT NUTRITION

This course deals with physiology of digestion and absorption in ruminants; anaerobic fermentation and metabolic processes, and metabolism of volatile fatty acids. It also provides a description of feeds used in ruminant nutrition, feed requirements according to stages of growth and production and effects of nutrient deficiency. The course ends with formulation of rations and study of different feeding systems.

10916423 ANIMAL BREEDING

This course covers the gene frequencies, Hardy-Weinberg equilibrium, types of gene action, phenotypic variation and its components, genetic value and breeding value, genetic parameters, estimation of breeding values, methods of selection and calculation of expected genetic change. It also addresses mating systems, crossbreeding and hybrid vigor, inbreeding and its effects. In addition, the course outlines the various genetic improvement schemes.

10916424 POULTRY DISEASES

This course covers the main poultry diseases; control and treatment of viral and bacterial diseases and internal and external parasites. It also touches on management of hygiene aspects of poultry farms.

10916426 COMPUTER APPLICATIONS IN ANIMAL PRODUCTION

The aim of this course is to provide the student with an opportunity to use the worldwide web and specialized software in animal production including ration formulation, management of records and data analysis.

10916427 ANIMAL BIOTECHNOLOGY

This course deals with the study of application of genetic engineering in the field of animal production, cloning and production of genetically modified food, medical uses of biotechnology and its importance in increasing production. Students in this course learn about modern techniques used to identify genes affecting important economic traits. In addition, the course covers the ethical aspects of biotechnology applications and their acceptance by the society as well as safety issues.

10916428 SEMINAR IN ANIMAL PRODUCTION

The aim of this course is to provide the student with an opportunity to synthesize scientific information from published literature and make presentation in front of an interested audience.

10916429 PRODUCTION OF MEAT ANIMALS

This course is a study of the importance of meat production in the world, meat animal breeds with focus on beef cattle breeds, production and housing systems, fattening of meat animals, factors affecting carcass and meat quality, and genetic improvement methods for meat animals.

10916430 ANIMAL FARM MANAGEMENT

This course covers establishment of farm animals, farm animal husbandry systems: poultry, meat animals, dairy cattle, record-keeping, and marketing agricultural produce.

10916431 FIELD TRAINING IN ANIMAL PRODUCTION- DAIRY CATTLE

This course provides the student with an opportunity to gain practical experience in dairy cattle via training in the college's experimental station as well as in the private animal industry. The student performs the daily husbandry and management practices for dairy cattle and hands in reports on these activities

10916432 FIELD TRAINING IN ANIMAL PRODUCTION- SHEEP AND GOATS

This course provides the student with an opportunity to gain practical experience in sheep and goats via training in the college experimental station as well as in the private animal industry. The student performs the daily husbandry and management practices and hands in reports on these activities

10916433 FIELD TRAINING IN ANIMAL PRODUCTION- POULTRY

This course provides the student with an opportunity to gain practical experience in poultry via training in the college's experimental station as well as in the private animal industry. The student performs the daily husbandry and management practices of broilers and layers and hands in reports on these activities.

10916434 FIELD TRAINING IN ANIMAL PRODUCTION- FEEDS & FEEDING

This course provides the student with an opportunity to gain practical experience in feed formulation and feeding systems of farm animals via training in the college's experimental station as well as in the private animal industry. The student performs the daily husbandry and management practices and hands in reports on these activities

10916435 FIELD TRAINING IN ANIMAL PRODUCTION- ANIMAL HEALTH

This course provides the student with an opportunity to gain practical experience in topics related to animal health via training in the college's experimental station as well as in the private animal industry. The student performs the daily husbandry and management practices and hands in reports on these activities

10916436 RESEARCH PROJECT

This course enables the student to select a topic relevant to animal production, write a proposal, conduct research, and write a scientific paper and present the finding in front of the department committee.

10916455 ANIMAL INSTALLATIONS

This course is an introduction to the effects of the environment on animals, farm animal housing and ventilation systems, their specifications, parlour systems and necessary feeding, drinking and milking equipment.

10916456 PARASITOLOGY

This course is a study of types of parasites, parasite relationship with nutrition, infectious parasite diseases, symptoms of disease, diagnosis of these diseases, ways of treatment and prevention, in addition to techniques of laboratory testing.

10921308 MEAT TECHNOLOGY AND PROCESSING

This course is a study of processing of meat, fish and poultry products, including protein functionality, thermal processing, curing, smoking and deterioration during storage; use of pre-blending and least-cost analysis in product formulation; recent developments including restructured and gel-type products. The course also covers microbiology and public health issues associated with meat products. Laboratory exercises and student participation in transformation of live animal to carcass and meat, structural and biochemical changes related to meat quality, chemical and sensory evaluation of meat. The course includes field trips to slaughterhouse and meat processing plants.

10921310 DAIRY PROCESSING

This course deals with the study of milk sources, producing animals and secretion; milking methods and milk pooling, cooling, transportation, and marketing; chemical and physical properties of milk, normal and

contaminating microorganisms and pathogens. It also touches on methods of milk handling and delivery to dairy plants.

10926241 PRINCIPLES OF AGRICULTURAL ECONOMICS

This course deals with economic principles which include the relationships between production inputs and the relationship between inputs and outputs. The course also introduces students to productivity, production laws, costs, status of agriculture in the economic statement and qualities characterizing work in agriculture. The course ends with a look at various branches of agricultural economics with emphasis on agricultural policies adopted by some Arab countries.

10926226 AGRICULTURE IN PALESTINE

This course deals with the development and importance of agriculture on international, Arab and national levels. The course covers agricultural climate, production elements, plant production in irrigated and rainfall areas. In addition, the course looks at animal production, market product, agricultural mechanization, agricultural institutions, agricultural problems in the region, and modern and developed agricultural projects.

10926241 AGRICULTURAL EXTENSION

This course is a study of the development and origin of agricultural extension, its goals and philosophy affecting its effectiveness. The student will be provided with information that helps in the preparation of extension service programs and their evaluation. This course also looks at the history of agriculture extension in the West Bank and the Gaza Strip, its goals, functions, present state, and ways of increasing its effectiveness.

10926322 AGRICULTURAL MARKETING

This course introduces activities related to transfer of commodity properly from producers to consumers. In this context, students are introduced to all efforts devoted to transfer, storage, and packaging of agricultural produce. Students are also introduced to other marketing services, in terms of funding, selling and purchasing, agricultural markets in the West Bank and the Gaza Strip, and the intermediaries. This course ends with light shed on marketing costs, marketing efficiency, and final agricultural marketing purposes.

Staff Members:

Name	Academic Rank	University of Graduation
Dr. Jihad Abdullah	Professor	Carolina, USA
Prof. Jamal Abu Omar	Assistant Professor	Colorado, USA
Dr. Ma'an Samara	Assistant Professor	Tennessee, USA
Mr. Ahmad Za'za'	Lecturer	An-Najah, Palestine

{ Nutrition and Food processing program }

The vision:

The vision of this program is only a part of the visions of the departments of the university, which aim at providing distinctive education in a distinctive university environment. This program also seeks to be a unique pioneer program on a regional, international level.

The mission:

Is to supply the needs of the local and regional market for the sector of nutrition industry, by providing qualified specialists in that field. This program also seeks to contribute in connecting the agricultural production sector (plant and animal production) to the sector of nutritional technology, as that is very important for the economy and the agricultural development.

The objectives:

1. To serve the local community and supply it with the specialists in the field of nutrition and food technology.
2. To contribute in agricultural development and the achievement of food security.
3. To activate scientific research in the field of nutrition and food technology.
4. To improve nutritional health awareness in the society.
5. To train specialists in the field of nutrition and food technology and provide them with the knowledge and the skills they need for the work market.
6. To publish books and brochures to enrich the Arabic library in the fields of the program.

The ILOs (the descriptions of the graduates of this program):

1. Capable of realizing and understanding the principles and bases of nutrition and food technology.
2. Capable of realizing the methods of nutrition and food technology.
3. Capable of running the basic chemical, nutritional, and biological tests for factories quality control.
4. Capable of realizing the rules and regulations related to food quality and its relation to food technology.
5. Capable of analysing and thinking in a critical way and also capable of understanding the reality of the food technology sector and the problems that face this sector, and finally be able to come up with solutions for these problems.
6. Capable of applying the knowledge that is related to the field of nutrition and food technology in the work field and managing it.
7. Capable communicating and working with others, providing them with advice, and passing on their knowledge.
8. Capable of staying updated on technologies and their use.
9. Capable of taking professional and moral responsibility, and appreciation of the risks that are caused by delinquency at work.

The potential fields of work for graduates:

1. Quality control and food safety superintendent at food factories.
2. Hospitals and nutrition administration in the field of therapeutic nutrition.
3. At research stations as specialized researchers.
4. At institutions that serve nutritional care, such as retirement houses and nurseries, and food factories.
5. Nutritional education and health media.
6. Ministry of education.

The Department of Nutrition and Food Processing offers a single major in Nutrition and Food Processing. Students interested in majoring in this field must complete 140 credits: 18 (University compulsory modules); 3 (free); 24 (compulsory Faculty of Science modules); 82 (Departmental compulsory modules); and 13 (electives from the Department).

Programme prerequisites (21 credit hours)

University requirements (18 credit hours)

Course no.	Course title	Credit hours	Prerequisite
10032100	Remedial English	0	-
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	Remedial English
11000323	University English II	3	11000103
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	1	-
11000108	Community Service	1	-
11000127	Introduction to Computer Science	1	-

Free courses (3 credit hours)

Undergraduate Programme (119 hours)

1. Compulsory courses from the Faculty of Science (24 credits)

Course #	Course title	Credit hours	Hours weekly		Prerequisite
			Theory	Lab.	
10221103	General Mathematics	3	3	-	-
10222109	General Physics	3	3	-	-
10223107	General Chemistry I	3	3	-	-
10223108	General Chemistry (Lab. I)	1	-	3	-
10223102	General Chemistry II	3	3	-	1023101
10223211	General Chemistry (Lab. II)	1	-	3	1023107
10221103	Analytical Chemistry	3	3	-	110223102+0223108
10223215	Analytical Chemistry Lab.	1	-	3	10223211, or concurrently with
10216235	Biostatistics	3	3	-	10221103+ 10916101
10911212	Microbiology	3	2	2	10911101+ 10916101
10911213	Microbiology Lab.	0	-	2	Concurrently with 10911212

2. Departmental compulsory requirements (81 credits)

Course #	Course title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10916101	Zoology	4	3	2	-
10916102	Zoology Lab.	0	0	2	Concurrently with 10916101
10911101	Botany	4	3	2	-
10911102	Botany Lab.	0	-	2	Concurrently with 10911101
10921101	Fundamentals of Nutrition	3	3	-	10916101
10921102	Fundamentals of Food Science	3	3	-	10911101
10921201	Food Processing and Preservation	3	2	2	10921102
10921202	Food Processing and Preservation Lab.	0	0	2	Concurrently with 10921201
10223233	Organic Chemistry	3	3	-	10223102
10223237	Organic Chemistry Lab.	2	-	4	Concurrently with 10223233
10911206	Genetics	4	3	2	1091101 + 10916101
10911207	Genetics Lab	0	-	2	Concurrently with 10911206
10916321	Biochemistry for Agriculture Students	3	3	-	10223233 + 10223237
10916322	Biochemistry for Agriculture Students Lab.	1			
10916317	Research Methodology	2	2	-	10225202
10921301	Food Biotechnology	3	3	-	10911206
10921302	Human Physiology	3	3	3	10921101+10916321
10921303	Human Nutrition	3	3	-	10916321+10921101
10921304	Food Chemistry and Analysis	4	3	2	102232111092+1101
10921305	Food Chemistry and Analysis Lab.	0	0	2	Concurrently with 10921304
10921306	Meal Planning	3	2	2	10921303
10921307	Meal Planning Lab.	0	0	2	Concurrently with 10921306
10921308	Meat Technology and Processing	3	2	2	10921202
10921309	Meat Technology and Processing Lab.	0	0	2	Concurrently with 10921308
10921310	Dairy Processing	3	2	2	10921102
10921311	Practical Dairy Lab.	0	0	2	Concurrently with 10921310

Course #	Course title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10921401	Nutrient Metabolism	3	3	-	10916321
10921402	Food Micro organisms	3	2	2	10911212
10921403	Food Micro organisms Lab.	0	0	2	Concurrently with 10921402
10921404	Nutrition-related Diseases	3	3	-	10921303
10921405	Food Quality Control	3	2	2	10921201 + 10921304
10921406	Food Quality Control Lab.	0	0	2	Concurrently with 10921405
10921407	Nutritional Education	3	3	-	10921303
10921408	Diet Therapy	3	3	3	10921303 + 10921404
10921409	Diet Therapy Lab.	0	0	2	Concurrently with 10921408
10921410	Seminar on Nutrition and Food Technology	1	1	-	Dept's approval
10921411	Practical Training in Nutrition	4	-	20	Dept's approval
10921412	Practical Training in Food Processing	4	-	20	Dept's approval
10921413	Graduation Project in Nutrition and Food Processing	1	-	-	Dept's approval

Departmental elective courses (14 credit hours)

Course #	Course title	Credit	Hours weekly		Prerequisite
			Theory	Lab.	
10921350	Processing of Oils and Fats	2	2	-	10921201
10921351	Sports Nutrition	2	2	-	10921303
10921352	Processing of Vegetables and Fruits	3	2	2	10921201
10921353	Processing of Vegetables and Fruits Lab.	0	0	2	Concurrently with 10921352
10921354	Nutritional Status Assessment	2	2	-	10921303
10921450	Food Additives	2	2	-	10921102
10921451	Special Topics in Nutrition and Food Technology	3	3	-	-
10921452	Food Hygiene	3	2	2	10921201
10921453	Food Hygiene Lab.	0	0	2	Concurrently with 10921452
10911202	Entomology	3	2	2	10911101
10911203	Entomology Lab.	0	-	2	Concurrently with 10911202
10916351	Organic Animal Production	2			10916203
10926226	Agriculture in Palestine	2	2	-	-
10916352	Organic Livestock Production	2	2	-	10916203
10926401	Food Security	2	2	-	10926211
10926211	Principles of Agricultural Economics	3	3	-	10221103

Course Descriptions

10911101 GENERAL BOTANY

This course deals with plant cells and tissues, plant structure, anatomy and the function of plant organs (root, stem, leaf flower, fruits and seed); plants and energy; nutrition and transport; plant classification and plants ecology. In the laboratory students will study the anatomy of plant tissues, both simple and complex, in addition to the structure of stem, root, leaf, flower, fruit and seeds of higher plants.

10916101 GENERAL ZOOLOGY

This course introduces students to the study of zoology at the cellular, organism and function levels. It begins by providing the students with an introduction to areas of evolution, reproduction, development, animal diversity and ecology. The Laboratory element allows students to become familiar with the form and function of major animals phyla through observation of living animals, prepared slides and models.

10911212 MICROBIOLOGY

This course deals with the scientific foundation of agricultural microbiology. Students will be briefed on the history of microbiology, classification of microbes, techniques and methods used in studying microorganisms. The course is also a detailed study of different groups of microorganisms, with respect to structure and physiology. The course will end with an application of microbiology in the field of soil, food, dairy, water, plant pathogen and health.

10921101 FUNDAMENTALS OF NUTRITION

This course introduces basic concepts of nutrition, metabolism of nutrients within the human body, their interactions, symptoms of malnutrition, human nutrient requirements, types, causes of food spoilage and nutritional diseases. This is in addition to food industries in Palestine and nutritional status.

10921102 FUNDAMENTALS OF FOOD SCIENCE

This course is a study of the chemistry of carbohydrates, proteins, lipids, vitamins, and water independent of and in relation to interaction during processing.

10921201 FOOD PRESERVATION AND PROCESSING

This course introduces students to applied concepts of nutrition, chemical and biological changes in foods during storage and preservation, food

processing and preservation and causes of food spoilage. It also discusses food preservation by means of heat, condensing, radiation, cooling, freezing, chemicals, high pressure, and fermentation or a combination of two or more of these means.

10921301 FOOD BIOTECHNOLOGY

This course begins with the definition of biotechnology and developments in food biotechnology. It also looks at the principles of genetic engineering, cloning and other modern techniques of biotechnology. It also introduces the use of biotechnology in the production of fermented foods, production of enzymes, vitamins and proteins and treatment of food plants wastes.

10921302 HUMAN PHYSIOLOGY

This course is designed to provide students with an understanding of the function and regulation of the human body and physiological integration of organs to maintain homeostasis. Course content will include the study of neural & hormonal homeostatic control mechanisms, as well as the musculoskeletal, circulatory, respiratory, digestive, urinary, immune, reproductive and endocrine organ systems.

10921303 HUMAN NUTRITION

The course deals with the study of applied human nutrition and nutritional care, the role of the dietician, concepts of dietary guides, health diet system. It also highlights nutrition standards, and nutritional requirements under various physiological conditions. The course caps with a discussion of malnutrition, evaluation and management, drug-nutrient interactions and nutrition and physical fitness.

10921304 FOOD CHEMISTRY AND ANALYSIS

The course discusses interrelationships of water and colloids and their importance to foods. It also provides the students with detailed knowledge of food components, classification, structure, processing, functions and chemical changes associated with storage, processing, flavours, pigments, and food additives. The practical part of the course includes food sampling, analysis, data interpretation and application.

10921306 MEAL PLANNING

Topics covered in this course include psychological, sociological, and historical aspects of food patterns and the proper approaches to planning and preparation of a healthy meal for the family during the human life cycle. The course ends with a look at nutritional education programs.

10921308 MEAT TECHNOLOGY AND PROCESSING

This course covers several topics: processing of meat, fish and poultry products, including protein functionality, thermal processing, curing, smoking

and deterioration during storage. It also covers the use of pre-blending and cost analysis in product formulation and recent developments including restructured and gel-type products. The course also highlights microbiology and public health issues associated with meat products. The course includes laboratory exercises and student participation in transformation of live animal to carcass and meat, structural and biochemical changes related to meat quality, chemical and sensory evaluation of meat. Field trips to slaughterhouses and meat processing plants is an essential part of the course.

10921310 DAIRY PROCESSING

Students in this course learn about milk sources, producing animals and secretion, milking methods and milk pooling, cooling, transportation, and marketing and chemical and physical properties of milk. They also learn about normal and contaminating micro organisms and pathogens and methods of milk handling and delivery to dairy plants.

10921401 NUTRIENTS METABOLISM

The main objective of this course is to bridge the gap between molecular nutrition, metabolism and disease state at several levels. This course will use basic science concepts to explain nutrient function, metabolism and interaction in humans. It will also cover the metabolic and physiological functions of nutrients at the molecular, cellular, tissue, organ and system levels, integrating the effects of nutritional status in health and disease.

10921402 FOOD MICROBIOLOGY

This course is a study of food microbes and their effect on safety of foods, factors affecting life of food microbes, microbes of importance to food quality and safety and foods and relationship to food processing.

10921404 NUTRITIONAL DISEASES

The course is an explanation of eating habits, symptoms of malnutrition; diseases of affluence such as obesity, cancer, diabetes mellitus, healthy food symptoms, epidemiology and prevention of these diseases.

10921405 FOOD QUALITY CONTROL

The course is a discussion of systems of quality control for foods and food industries and official scales; understanding of food laws and standards and institutions in charge of controlling production lines of various foods.

10921407 NUTRITIONAL EDUCATION

This course focuses on factors affecting type of food consumption by community and individuals; preparation of programs to educate people on proper eating. This is in addition to food treatment, handling and cooking as related to nutritious meals.

10921408 DIET THERAPY

This course introduces students to diseases that require diet therapy (i.e. diseases of infants, gastrointestinal tract, cardiovascular system, renal system, diabetes mellitus, cases of major surgeries, burns, accidents, cancer, etc.) and role of nutrition in controlling physiological, biochemical, and clinical abnormalities and applications of diet therapy, dietetic, nutritional guidance during illness.

10921410 SEMINAR IN NUTRITION AND FOOD TECHNOLOGY

This seminar requires submission of an individual term paper and a holding of group discussions by students on current subjects and problems within the area of nutrition or food technology. This course cannot be repeated for credit.

10921411 + 10921412 TRAINING IN NUTRITION AND FOOD TECHNOLOGY

Students will be trained on applications in food production, preparation of diets in various institutions and placement of students in various food institutions. Students will be given the opportunities to receive training related to safe and balanced nutrition, preparation of various diets according to age and physiological conditions. This is in addition to use of small animals in nutrition research and applications in diet therapy.

10921413 GRADUATION PROJECT IN NUTRITION AND FOOD PROCESSING

Students must prepare graduation project under a staff member's supervision. This project will be evaluated by a staff committee in the department.

10921350 PROCESSING OF OILS AND FATS

This course studies the composition of edible fats and oils. Fatty acids, glyceridic composition of oil, minor components and the chemical and physical properties of fats are also discussed. In addition, the course addresses other major topics such as extraction of oil and refining methods; auto-oxidation; stability of fats and methods of fat modifications, such as hydrogenation and inter-esterification.

10921351 SPORTS NUTRITION

This course begins with the athletes' nutritional requirements: nutrition during exercise, nutrition before, during, and after athletic competition. Then the course moves to the nutritional requirements in a variety of sports, such as endurance sports, the physiology of athletes in the different types of sports, thus helping students to understand the differences in nutritional requirements. The course concludes with a look at sports as a factor in leading a healthy life style.

10921352 PROCESSING OF FRUITS AND VEGETABLES

This course is a study of nutritional value, quality and post-harvest physiology of fruits and vegetables and regulation of their ripening. It also discusses

pathological and physiological disorders and their effect on quality of post-harvested fruits and vegetables. The course also provides students with detailed information related to harvesting, grading, packaging, storing and handling of fruits and vegetables.

10921354 NUTRITIONAL ASSESSMENT

Students in this course learn how to assess nutritional status in clinical setting, analyze the impact of nutritional status on clinical, biochemical and anthropometric parameters. Analyze the impact of acute and chronic disease based on nutritional status and on parameters used to assess nutritional status, describe and interpret data during assessment of nutritional status, study. Analyze parameters of nutritional status for human and community including dietetics program, coordinated education, role components, the nutrition care process and medical terminology. Students also receive hands on training in basic skills in dietetics: interviewing, diet analysis including use of computers, and anthropometric measurement and analysis to improve nutritional status.

10921450 FOOD ADDITIVES

This course is a study of types, structure, components, forms, and mode of action of the food additives. It also discusses advantages and disadvantages of food additives and means of their evaluation.

10921451 Special Topics in Nutrition and Food Technology

This course covers topics related to nutrition and food technology which are not covered in other courses. A student is allowed to sign up for this course for one time only.

10921452 FOOD HYGIENE

The course deals with concepts of food safety and hygiene; food-borne diseases and diseases transmitted through food residues; hygienic standards for food production and harvesting, handling, processing, preparation, and storage. The course also addresses food firm's hygiene and health requirements, cleaning and disinfection and pest control, and application of hazard analysis and critical control point (HACCP) systems.

10911202 ENTOMOLOGY

This course deals with insects morphology, internal anatomy and biology, external form, functions and body extras as well as their changes to suit their environment, insect order and behavior, their types and environmental factors influencing their numbers as well as their classification. The course ends with an examination of ways of fighting these harmful insects by using chemical pesticides and other ways, in addition to damages resulting from insects and their control. The practical part of the course includes observation

during the laboratory sessions of different types of insect's antennae and their modifications, mouthparts and their modifications, legs and their modifications, wings and their types and abdominal appendages and their types. It also includes observation of some internal organs of the insects and their parts. In addition to that, the students identify different types of insect's larvae and pupae. They also collect insects and classify them according to the major groups of the insects.

10931242 AGRICULTURE IN PALESTINE

This course deals with the development and importance of agriculture at international, Arab and local levels. The course covers agricultural climate, production elements, plant production in irrigated and rainfall areas. In addition, the course looks at animal production, market product, agricultural mechanization, agricultural institutions, agricultural problems in the region, modern and developed agricultural projects.

10916325 ORGANIC ANIMAL FARMING

This course discusses an introduction to organic farming in the field of animal production, laws and regulations for production of organic food, importance of organic food, systems used in production of organic food from animals, animal welfare, and marketing organic food.

10926401 FOOD SECURITY

This course includes the strategic elements of food security, the incomes of food security, the policies and tools of nutrition and food security, the integrated food plan, the rules of population, nutritional budget, the green revolution and food security, food aids, the bases of self-reliance, international perspective on food security, the Arabic and Palestinian food security, food and poverty, international experiences, food and economic inflation.

10926211 PRINCIPLES OF ECONOMIC AGRICULTURE

This course deals with economic principles which include the relationships among production inputs and the relationship between inputs and outputs. The course also introduces productivity, production laws, costs, status of agriculture in the economic statement and qualities characterizing work in agriculture. The course ends with a look at various branches of agricultural economics with emphasis on agricultural policies adopted by some Arab countries.

Staff Members:

Name	Academic Rank	University of Graduation
Dr. Suleiman Khalid	Assistant Professor	UK, 1984
Dr. Mai Hamdan	Assistant Professor	Spain, 2011
Dr. Mohamad Tamimi	Assistant Professor	UK, 2005.
Mr. Samer Modalal	Lecturers	Italy, 2007
Mr. Mohamad Sabbah	Lecturer	Indonesia, 2012

{ Veterinary Programme }

Objectives:

The Faculty of Veterinary Medicine aims at preparing highly qualified veterinarians. The graduating veterinary from this faculty will have expertise to improve the livestock sector for a providing foods that are safe and free from harmful residues and pollutants that are usually transmitted through animal product. The Faculty also aims at supporting the role of Vets and doctors in protecting the environment and serving the society, in addition to improving the care given to pet animals and household farms as well as wild animals and poultry production.

Mission:

1. To prepare high quality, well trained, Veterinarians. , both scientifically and professionally
2. To Offer veterinary services support to farmers and communities through faculty's the health center.
3. To pay field visits to farms, in order to control and prevent infectious and zoological diseases.
4. To participate in animal health and veterinary projects implemented by the Ministry of Agriculture and other public and private institutions.
5. The faculty is committed to serving veterinary medicine and set reference for Palestinian scientists through its laboratories and staff.
6. To organize veterinary medicine courses and training for veterinarians in Palestine through the Continuous Education program.

Vision:

1. To establish new specialized departments (Department of clinical veterinary science, Department of veterinary pathology and animal health, Department of Basic science).
2. To establish a veterinary hospital to serve the local community for the, diagnosis and treatment of the different cases.
3. Establishment of special laboratories for pharmaceutical studies and drug analysis and equivalence.
4. To establish a unit for embryo transfer and implantation, tissue culture and breeding selection.
5. To establish a specialized control unit for the examination of food products of animal origin to assure value and safety.

Intended Learning Outcomes ILOs:

After having finished the courses of Veterinary Medicine, graduates must be able to:

1. Precisely apply knowledge and professional skills in Veterinary Medicine to maintain animal health and obtain maximal productivity in livestock.
2. Keep abreast with the developments in Veterinary Medicine.
3. Evaluate occurring evidences sharply and accurately.
4. Apply the concepts and methods of research and technology in Veterinary Medicine.
5. Commit to continuing education, training and seeking for knowledge.
6. Conduct oneself in a professional manner, appreciate the ethical and legal obligations of the veterinary profession and understand and apply the ethical codes within the field of Veterinary Medicine.
7. Communicate effectively with lay public, colleagues and responsible authorities, and clarify the important role of Veterinary Medicine for individual and society as a whole.
8. Know the actual situation of the livestock sector in the nation, and recognize endemic and exotic diseases.
9. Have a working knowledge of the control of zoonotic diseases and demonstrate the importance of the role of the veterinarian in safeguarding public health.
10. Give soundly -based advice when facing a problem related to Veterinary Medicine.
11. Be aware of personal limitations and demonstrate awareness of when and from where to seek professional advice, assistance and support.
12. Work effectively as members of a multi-disciplinary team in providing services to clients.

Bachelor of Veterinary Medicine

Program Requirements	Credit Hours
University Requirement	18
Courses from Faculty Of Science	19
Department Elective Course	124
University Elective Course	6
Total	167

Terms of enrollment:

A “Tawjihi” exam average of no less than 75% in the scientific stream.

Department Compulsory courses (124)

Course code	Course title	Credit Hours	Pre-requisites
10901102	Veterinary Anatomy I	3 (2+1)	10201119, 10231103
10901104	Animal Physiology I	3 (3+0)	10201119
10901101	Veterinary Thermo-regulation & Ethics	1	
10901201	Animal Management	3 (2+1)	10901102, 10901104
10901203	Poultry Management	2 (1+1)	10901102, 10901104
10901205	Veterinary Anatomy II	3 (2+1)	09011021
10901207	Animal Physiology II	3 (2+1)	09011041
10901209	General Veterinary Microbiology	3 (2+1)	10201119
10901211	Veterinary Histology & Embryology	4 (3+1)	09011021
10901213	Veterinary Bacteriology & Mycology	4 (3+1)	09012091
10901215	Veterinary Virology	3 (2+1)	09012091
10901217	Veterinary Parasitology I	3 (2+1)	09012091
10901219	Veterinary Immunology	3 (2+1)	0901207, 109012091
10901220	Biochemistry	4 (3+1)	10231237, 10231233
10901318	Animal Nutrition	2	10901207, 10901220
10901301	Milk Hygiene & Quality Control	3 (2+1)	1 09 01213
10901303	General Veterinary Pathology	3 (2+1)	10901213, 10901215, 10901217
10901305	Veterinary Parasitology II	3 (2+1)	09012171
10901307	Veterinary Pharmacology	4 (3+1)	,10901207 10901220
10901309	Veterinary Infectious Diseases	3 (3+0)	10901213, 10901215, 10901217
10901310	Systemic Veterinary Pathology	4 (3+1)	10901303
10901312	Poultry Diseases	4 (3+1)	10901303
10901314	Theriogenology I (Reproductive Physiology)	3 (2+1)	10901207
10901316	Introduction to Veterinary Surgery & Anesthesia	3 (2+1)	10901205, 10901307
10901401	Zoonosis and Public Health	3 (3+0)	10901309, 10901217
10901402	Theriogenology II (Veterinary Obstetrics & Gynecology)	3 (2+1)	10901314
10901404	Farm Animals Internal Medicine	3 (2+1)	10901310, 10901307
10901406	Equine Internal Medicine	2 (1+1)	10901310, 10901307
10901408	Farm Animals Surgery	3 (2+1)	10901316
10901410	Meat Inspection & slaughterhouse Hygiene	3 (2+1)	10901310, 10901305
10901501	Principles of Scientific Research	2	
10901502	Small Animals Internal Medicine & Surgery	3 (2+1)	10901310, 10901307, 10901316
10901504	Veterinary Clinical Pathology & Chemistry	3 (2+1)	10901404, 10901406
10901506	Veterinary Clinical Pharmacology	2 (1+1)	10901404
10901508	Veterinary Clinic I	2 (0+2)	10901404, 10901408
10901510	Equine Surgery	2 (1+1)	10901406
10901512	Morbid Anatomy and Forensic Medicine	2 (1+1)	10901310
10901514	Veterinary Epidemiology	2	10901401, 1025202
10901515	Animal Hygiene & Environmental Pollution	1	10901401
10901516	Artificial Insemination & Embryo Transfer	2 (1+1)	10901402
10901518	Veterinary Clinic II	2(0+2)	10901508
10901520	Practical Training	9	10901508
10901521	Project	1 (1+0)	10901501

Department elective courses (6 credit courses)

Course code	Course title	Credit Hours	Pre-requisites
10901350	Beekeeping and Diseases	2 (1+1)	10901305, 10901213, 10901215
10901352	Fish Farming and diseases	2 (1+1)	10901303
10901550	Diagnostic Imaging	2 (1+1)	10901406, 10901408
10901450	Laboratory Animal Diseases	1 (1+0)	10901213, 10901215
10901552	Animal reproductive Biotechnology	2(1+1)	10901314
10901554	Veterinary Economics	1	10901201, 10901203
10901556	Special Topics in Veterinary Medicine	1	10901508
10901558	Animal Welfare	1	10901201, 10901203
10901452	Veterinary Clinical Parasitology	2(1+1)	10901305
10901454	Food Safety	2(1+1)	10901301, 10901410
10901560	Veterinary Toxicology	1	10901307, 10901506
10901562	Veterinary Procedures &Emergency Treatment	2(1+1)	10901508
10901456	Rabbit production and diseases	2 (1+1)	10901201, 10901310
10901566	Sport Animal Medicine	2 (1+1)	10901406
10901568	Veterinary Teratology	1	10901402
10901570	Pet Birds Medicine	1	10901312
10901572	Camel Medicine and Surgery	2 (1+1)	10901310,10901307
10901354	Molecular Biology	1	10201119
10901458	Veterinary Oncology	2(2+0)	10901310

Course descriptions:

10901102 VETERINARY ANATOMY I

This course covers the macroscopic structure, morphology and location of various organs and tissues in the skeletal, muscular, cardiovascular, lymphatic, nervous system, eye and hoof of the horse compared with those of other domestic animals.

10901104 ANIMAL PHYSIOLOGY I

This is a general physiology course in which the major organ systems are described: the nervous, musculoskeletal, cardiovascular system, in addition to sensory organs, endocrinology and thermal regulation physiology will be discussed.

10901101 VETERINARY THERMOREGULATION AND ETHICS

The course covers the development of the veterinary profession during ancient civilizations. It includes the description of laws related to the veterinary profession in all mentioned civilizations, with emphasis on the related to animals and their production, at national, regional and international levels are covered.

10901201 ANIMAL MANAGEMENT

This course will cover proper methods of handling and controlling of domestic animals, also the course will cover the identification of different anatomical body organs, beside studying of the behavior of different animals through reproduction, nutrition and ways of managing and knowledge of the important breeds.

10901203 POULTRY MANAGEMENT

This course is designed to provide basic and applied knowledge on sound management Of various poultry enterprises: breeder, layer, broiler flocks, hatcheries and feed mills. It also covers poultry house design, ventilation systems, drinking, feeding systems, environmental management, sanitation, disinfection and vaccination. The role of bio- security in the poultry industry is defined.

10901205 VETERINARY ANATOMY II

This course covers the macroscopic structure, morphology and location of various organs and tissues in the peritoneum and its reflection .digestive, the pleura and its reflection, respiratory, urogenital system of the horse compared

with those of other domestic animals in addition to brief description of poultry anatomy.

10901207 ANIMAL PHYSIOLOGY II

This is a continuation of Animal Physiology I. Topics highlighted are the digestive, respiratory, renal, male and female reproductive systems, in addition, to blood component, will be discussed.

10901209 GENERAL VETERINARY MICROBIOLOGY

This course deals with the structure, physiology, morphology, growth, nutrition, classification, pathogenesis, and virulence and resistance microbes.

10901211 VETERINARY HISTOLOGY AND EMBRYOLOGY

This course deals with slide preparation, methods of study by light microscope, different intracellular structures such as epithelium, glands, C.T., muscular, nervous, and all animal systems of different domestic animals. Furthermore, embryonic development is presented.

10901213 VETERINARY BACTERIOLOGY AND MYCOLOGY

The course deals with the study of different groups of aerobic and anaerobic bacteria, spirochetes, mycoplasmas, chlamydia, fungi, yeasts and moulds, with emphasis on their methods of identification and virulence in different animal species. Also the infectious diseases caused by these microbes, their distribution and control.

10901215 VETERINARY VIROLOGY

This course covers virus evaluation, host range, and virus classification. The viral diseases, epidemiology, methods of diagnosis and control of domestic animals will be discussed.

10901217 VETERINARY PARASITOLOGY I

This course covers the studying of general aspects of internal parasites, classification. life cycle, clinical symptoms, epidemiology, diagnosis and prevention methods of parasitic infestation of domestic animals.

10901219 VETERINARY IMMUNOLOGY

This course deals with cells and organs of immune system of domestic animals, host pathogen interaction, mechanisms of inflammation and hypersensitivity reactions, autoimmune disease and immune deficiency. In addition, it provides students with knowledge to perform different serological techniques used in disease diagnosis.

10901220 BIOCHEMISTRY

This is an introductory biochemistry course which covers the general structure and function of proteins, carbohydrates, lipids and nucleic acids. In addition, the different metabolic pathways information pathways are discussed.

10901308 ANIMAL NUTRITION

This course is a study of basic nutritional requirements of domestic animals and the metabolic disturbances. Further, it covers ration components and the diagnosis of metabolic diseases.

10901301 MILK HYGIENE AND QUALITY CONTROL

Students learn about physical and chemical properties of adulteration, quality evaluation of milk, sources of contamination, heat treatment, zoonotic diseases transmitted through milk and milk products. Also detailed illustrations about the milk processing technologies, and the hygienic examination of milk and its products. The course ends with an examination of milk for drug residues.

10901303 GENERAL VETERINARY PATHOLOGY

Main anatomical and functional changes found in diseased animals are discussed. Besides, cellular identification, inflammation, growth, metabolism and tumors are covered.

10901305 VETERINARY PARASITOLOGY II

This course will cover the most important types of external parasites of medical and veterinary importance. In addition the course discusses the classification of external parasites, clinical symptoms, and epidemiology, diagnosis and prevention methods of external parasitic infections for all animals.

10901307 VETERINARY PHARMACOLOGY

This course deals with the drug disposition and action including pharmacokinetics (absorption, distribution, metabolism and excretion), pharmacodynamics, routes of administration, mode of action, drug interactions and systems pharmacology of different animal systems as well.

10901309 VETERINARY INFECTIOUS DISEASES

This course covers diseases caused by viruses, bacteria, parasites, and fungi affecting different domestic animals, in addition to the causative agents, clinical symptoms, diagnosis, treatment and control.

10901310 SYSTEMIC VETERINARY PATHOLOGY

This course will expose students to the pathological changes of different body systems, with emphasis on congenital, bacterial infections, metabolic, nutritional and immunological disturbances. Macroscopic and microscopic examination of lesions that can lead the correct diagnosis of disease.

10901312 POULTRY DISEASES

This course is designed to give knowledge on diagnosis, treatment, and preventative measures against viral, bacterial, parasitic, fungal, and nutritional diseases that occur in chickens, turkeys, rabbit and caged birds.

10901314 THERIOGENOLOGY I

This course covers the female genital systems, reproductive endocrinology, puberty, follicular development, genesis, oestrous, ovulation, fertilization, and pregnancy in domestic animals. In addition to female infertility caused by physiological and anatomical defects. Pregnancy and infertility diagnosis will be covered.

10901316 INTRODUCTIONS TO VETERINARY SURGERY AND ANESTHESIA

This course covers the basic knowledge of veterinary surgery and anesthesiology. It discusses the general principles of pre-surgical, surgical and post-surgical considerations.

10901401 ZOOONOSIS AND PUBLIC HEALTH

This course focuses on zoonotic diseases of public health importance. Reviewing the genetic, biological, social, environmental and ecological factors for the emergence or re-emergence of these diseases. Also the principles that can be used to prevent and control transmission and ultimately protect human health.

10901402 THERIOGENOLOGY II

This course covers the physiology and pathology of pregnancy and parturition in animals. In addition to the practical and clinical aspects of veterinary gynaecology and obstetrics. Diagnosis and therapeutic management of the pathologic reproductive anomalies, parturition, dystocia, sterility and their treatment are included.

10901404 FARM ANIMAL MEDICINE

This course covers the principles of diagnosis, treatment, and prevention of diseases of domesticated ruminants. The integrated case discussions will illustrate the context and application of material presented and will promote development of problem-solving skills. Individual and herd medicine will be discussed.

10901406 EQUINE MEDICINE

This course illustrates the etiology, patho-physiology, epidemiology, clinical presentation, diagnostic evaluation, and treatment of commonly observed equine diseases, as well as up-to-date therapeutic methods available to equine medicine.

10901408 FARM ANIMAL SURGERY

The course includes general knowledge of common surgical problems in farm animals and using current method for diagnosis include diagnostic image.

10901410 MEAT INSPECTION AND HYGIENE

This course illustrates the organoleptic and laboratory examinations of meat and meat products. Bacterial, viral, parasitic, and metabolic infections

of slaughtered animals and poultry are included. Detection of chemical residues in meat and poultry and the judgment of fitness of meat for human consumption are covered.

10901501 PRINCIPLES OF SCIENTIFIC RESEARCH

During this course the student will have the capability to design and write scientific research as well as how to collect and write references in right way.

10901502 SMALL ANIMALS MEDICINE AND SURGERY

The clinical signs, diagnostic features, appropriate management, and prognosis of common small animal diseases affecting each body system. The emphasis is to establish a solid diagnostic approach to cases and developing the clinical skills necessary to manage medical and surgical cases.

10901504 VETERINARY CLINICAL PATHOLOGY AND CLINICAL CHEMISTRY

This course covers methods of hematological and body fluids examination, acid-base balance, liver, pancreas and kidney function tests in order to make laboratory interpretations.

10901506 VETERINARY CLINICAL PHARMACOLOGY

This course involves the study of the chemotherapeutics and pharmacokinetics of drugs including modes of action, use and adverse effects of antibiotics, antifungal agents, antiviral agents, anthelmintics, insecticides and antineoplastic agents in clinical situation,

And to study the treatment of bacterial, viral, parasitic, fungal disease and antineoplastic drugs. in addition, to study the effect of growth promoter in dilates, as well as adverse effect of these agent on the body and ways to treat it.

10901508 VETERINARY CLINIC I

This course covers skills concerning diagnosis and treatment of diseases in different animal species admitted to the Faculty of Veterinary Medicine or through field services.

10901510 EQUINE SURGERY

This course offers the knowledge of veterinary surgery and anesthesiology of horse; it discusses the general principles of pre-surgical, surgical, and postsurgical consideration and common surgical operation of horses which need surgical interference.

10901512 MORBID ANATOMY AND FORENSIC MEDICINE

This course deals professionally with the study of the cause of diseases, death specially toxicology and legally with crimes against animals.

10901514 EPIDEMIOLOGY

This course includes the epidemiology and prevention of infectious and chronic diseases and their effects on human health and environment. Also, it includes the basis of surveillance of diseases related to veterinary medicine and animal productivity.

10901515 ANIMAL HYGIENE AND ENVIRONMENTAL POLLUTION

This course focuses on the inter-relationship between animals and the environment in addition to the effects on animals, human and environment and vice-versa. Animal Diseases resulting from environmental changes are also covered.

10901516 ARTIFICIAL INSEMINATION & EMBRYO TRANSFER

This course focuses on the anatomic and physiological function of the male reproductive system, ultra structural composition of semen, collection, evaluation, preparation, freezing and artificial insemination as well as the current technique in embryo transfer in addition to estrous synchronization methods used in domestic animals. Also covers the diagnostic and therapeutic procedure of mal organ diseases.

10901518 VETERINARY CLINIC II

A Continuation of Veterinary Clinic I.

10901520 PRACTICAL TRAINING

This course provides students an opportunity to develop, integrate and apply veterinary medical knowledge and skills in a clinical setting under faculty supervision. In veterinary clinic of the faculty as well as in public and private foundations. These students will be given opportunities to apply their practical training out of Palestine.

10901521 PROJECT

Student will prepare graduation project under staff members' supervision. This project will be evaluated by staff committee in the faculty.

10901350 BEEKEEPING AND DISEASES

This Course illustrates the importance of honeybee-keeping. It will illustrate the modern ways used for honeybee keeping methods and diseases, including the bacterial, viral and parasitic infections. And their diagnosis, treatment and control procedures.

10901352 FISH FARMING AND DISEASES

The course will focus on management of fishes and fisheries. To have good knowledge of major fish diseases. Types of diseases will be presented: bacterial, parasitic, viral and fungal, also those related to nutrition.

10901550 DIAGNOSTIC IMAGING

This course offers the basic knowledge of veterinary diagnostic imaging include

the general principles and current using of x- ray, endoscope, laparoscope and ultrasound for diagnosis treatment and taking biopsies from several lesions.

10901450 LABORATORY ANIMALS

This course designed to introduce the students to the specialty of Laboratory Animal, including husbandry and management of lab animal species and animal models used in research

10901552 ANIMAL REPRODUCTIVE BIOTECHNOLOGY

The course covers topics such as: Transgenic animals and their applications; In vitro fertilization and embryo transfer; cloning and its potential applications as well as other reproductive technologies.

10901554 VETERINARY ECONOMICS

To acquire extensive knowledge of veterinary economics, and techniques in the economic analysis. (Students will acquire knowledge of the economic analysis of epidemiological data, and the ability to apply theoretical epidemiological and health research concepts to practical veterinary medicine.

10901556 SPECIAL TOPICS IN VETERINARY MEDICINE

This course is designed to teach different scientific and veterinary subjects chosen by the course coordinator after presented and approved by the board members of the department of veterinary medicine in which these subjects should not include the compulsory courses.

10901558 ANIMAL AND WELFARE

This course will introduces students to many of the ethical issues concerning the use of animals in agriculture, science, and society. And related issues including physiology, behavior, human-animal interactions, suffering and pain.

10901452 VETERINARY CLINICAL PARASITOLOGY

This course covers the chemical reagents used in the conservation and processing internal and external parasites, also methods of collection and techniques for sampling of various body organs for several animal species, as well as different methods used in the examination of samples to identify parasites, Oocysts and their larvae and eggs through testing the blood, stool and tissues.

10901454 FOOD SAFETY

The course deals with concepts of food safety and hygiene including food-borne diseases, hygienic standards for food production and harvesting, handling, processing, preparation and storage. The course illustrates the health requirements for food firms, cleaning and disinfection and application of hazard analysis critical control point (HACCP) system.

10901560 VETERINARY TOXICOLOGY

This course deals with pharmacological and pathological features of diseases caused by common toxic chemicals, plants and poisons of animal origin with emphasis on clinical manifestations, diagnosis, prevention and treatment, in addition to dealing professionally and legally with crimes against animals.

10901562 VETERINARY PROCEDURES & EMERGENCY TREATMENT

This course will focus on the most important emergency conditions and the proper way to deal with it

10901465 RABBIT PRODUCTION AND DISEASES

This course introduces the students to principles of rabbit production and management; the importance of rabbit keeping; the behavior of rabbits; rabbit production systems; rabbit husbandry practices and requirements and rabbit diseases; and product processing, marketing, economics and management.

10901566 SPORT ANIMAL MEDICINE

Students are introduced to concepts concerning the diagnosis, treatment and management of infectious and none infectious diseases affecting the sport animal. Emphasis is placed on prevention and control of zoonotic disease in these animals and the course cover physical examination and preparing the animal before several kind of sport will be covered.

10901568 VETERINARY TERATOLOGY

A systems approach to embryonic and fetal development; principles of teratology with emphasis on specific teratogenic agents and counseling of exposed individuals.

10901570 PET BIRDS MEDICINE

This course is designed to provide students with basic information and skills necessary for the diagnosis and treatment of disorder of avian species with emphasis on pet birds.

10901572 CAMEL MEDICINE AND SURGERY

Students are introduced to concepts concerning the diagnosis, treatment and management of infectious and none infectious diseases affecting the camelid group. Emphasis is placed on prevention and control of zoonotic disease in these species and the course cover the management and treatment of surgical condition for camelid group

10901354 MOLECULAR BIOLOGY

Advanced comprehensive study of the molecular organization, properties, and physiological functions of genetic material, and applications to biotechnology include over-expression, transgenic organisms, AIDS, DNA diagnostics, and gene therapy

10901458 VETERINARY ONCOLOGY

This course is designed to provide intensive study of the biology of neoplasms, their diagnosis, clinical presentation and treatment, mutation, methods of diagnosis, and cancer epidemiology. In addition the course will discuss important neoplasms of various animal species and body systems, and classical methods of treatment.

Staff Members:

Name	Academic Rank	University of Graduation
Dr. Rateb Aref Abdelfatah Othman	Assistant Professor	Sarajevo University
Dr. Hatem Atalla	Assistant Professor	University of Istanbul
Dr. Nimer M. Khraim	Assistant Professor	University of Veterinary Medicine (TIHO), Hanover - Germany
Dr. Sameh Abuseir	Assistant Professor	University of Veterinary Medicine, Hanover, Germany
Dr. Belal Yousef Younes Abu Helal	Instructors	Baghdad University / college of Veterinary medicine
Dr. Ibrahim Mahmoud AL Zuheir	Instructors	Jordan University of Science and Technology
Dr. Adnan Fayyad Abedalkhader	Instructors	Jordan University of Science and Technology, Jordan.
Dr. Mohammad Ahmad Abd-Aldayem	Teaching Assistant	An-Najah National University

┌ Faculty of Islamic Law (Shari'a) ┐
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{ Department of Jurisprudence and Legislation }
{ Fiqh and Tashree' }

Program Vision

The vision of the Jurisprudence and Legislation (Fiqh and Tashree') Program springs from the strong faith in the uniqueness of the Islamic nation, religion, culture and civilization. It also springs from the need of the Islamic nation and humanity in general for the rise of this civilization, to shine anew, in all fields of life. This civilization has a distinctive vision, for it contains mercy for people and honor for human being. This civilization also rests on a divine revelation and can offer solutions to all problems of life, in different spheres, and check on the majority of these problems which plague mankind these days in all fields of life: scientific, intellectual, social, economic, etc.

Program Mission

This Program in Fiqh and Tashri' seeks to turn out graduates who are distinctive academically, culturally, morally and missionarily. It also endeavors to make these graduates possess a good basic knowledge of Islamic law in general and Fiqh sciences and fundamentals in particular. This is in addition to making them possess the right qualifications to assume a teaching or missionary job or judicial job in Islamic shari'a courts. The program also strives to supply the society with qualified academics, specialists and experts and meet the religious and educational needs of the people in the field of Islamic shari'a and fiqh in particular and in legal work in general.

Program Aims

1. This program aims at turning out distinctive graduates who enjoy the following traits:
 - Feel proud of their religion and culture and have a sense of belonging to their civilization and nation.
 - Set good examples for others in their beliefs, morals, behavior and treatment. - Possess a solid knowledge in all religious academic aspect and particularly their major. These include fiqh sciences and fundamentals such as worship, personal status law, and transactions, thus qualifying them to assume job in teaching, *ifta* (issuance of religion decrees), public speaking, shari'a courts and other religious-related jobs.
 - Enjoys the fiqh talent necessary for individual interpretation, inferring fiqh provisions, issuing religious edicts/decrees, deciding judicially on the basis of prayer fiqh in all spheres of Islamic fiqh and its fundamentals.
 - Ability to think properly and critically in accordance with legal scientific methodology, thus making the student able to participate in debates and arguments and convince others scientifically and objectively.
 - Ability to link fiqh (jurisprudence) with reality and take it from theory to practice.

2. Supplying the Palestinian society with the necessary qualified cadres, experts and specialists, meeting the local market demands and meet the people's religious and academic needs in legal work and in fiqh sciences and fundamentals in particular.
3. Contributing to the contemporary Islamic consolidation of sciences, offering Islamic alternatives in all fields of life and knowledge and particularly in fiqh sciences and fundamentals.
4. Contributing to dissemination of original legal knowledge and educational awareness of this knowledge that responds to and faces contemporary problems and challenges in the Palestinian society in particular and in the Muslim society in general especially in fields of fiqh sciences and essentials.
5. Reaching out to relevant academic institutions and other institutions as well, at home and abroad, to share and exchange experiences, ideas and knowledge in the field of fiqh sciences and essentials.
6. Nurturing a number of positive values, and central community human causes in the student. These values include respect of human rights, protection of the environment, respect of others, acceptance of the principle of pluralism and disagreement and fostering the principle of social justice and peace.

- /utions.

- Use modern technology (computers) and modern resources to conduct scientific research in shari'a sciences particularly in fiqh sciences and principles.
- Use social media, such as facebook and twitter, in reaching out to people to help them solve their problems and educate them on religions issues of their concern particularly in fiqh sciences and principles.

Curriculum Plan for a B. A. Degree in Jurisprudence and Legislation (Fiqh and Tashri')

The Department of Fiqh and 'Tashri' offers a single specialization in fiqh and tashri'. Students wishing to major in this field must successfully complete 129 credits: of these, 18 are university requirements, 95, department compulsory, 12 electives, and 4 as free courses.

University requirements(18 credits)

Course #	Course title	Credits	Prerequisite
11000101	Islamic Culture	03	-
11000102	Arabic Language	03	-
11000103	University English I	03	-
11000323	University English II	03	-
11000127	Introduction to Computer Science	03	-
110005	Palestinian Studies	03	-
11032100	Remedial English	03	-

University free requirements (4 credits)

Department requirements (95 credits)

Course #	Course title	Credits	Prerequisite
1040111	Fundamental of Scientific Research	03	-
10406142	Holy Qur'an Sciences and Terminology	03	-
10406143	Hadith Sciences and Terminology	03	
10406144	Recitation and Elocution		
10401130	Methods of Shari'a Ruling		-
10401231	Legislation Proofs	03	10401130
10401112	Fiqh of Prayer and Fasting	03	-
10401113	Fiqh of Zakat and Hajj	03	-
10401215	Fiqh of Marriage and Divorce	03	-
10401215	Inheritance	03	-
1040116	Hire-Purchase and Contracts	03	-
10411175	Fiqh of Contemporary Financial Transactions	03	-
10406245	Qur'an Recitation and Memorization I	01	10406144
10406246	Qur'an Recitation and Memorization II	01	10406245
10406247	Qur'an Recitation and Memorization III	01	10406246
10401438	Graduation Project	03	10401111
10401117	Personal and Material Rights	03	-
10401218	Donation and Notarization Contracts	03	-
10401319	Fiqh of Companies	03	-
10401420	Principles of Comparative Fiqh and Its Contemporary Applications	03	-
10401321	Political Fiqh in Islam	03	-
10401322	Criminal Law	03	-
10401423	Fiqh of Claim and Evidence	03	-
10401130	Text Indications	03	-
10401433	Interpretation and Shari'a Purposes	03	-
10401234	Fiqh of Islamic Legal Maxims	03	-
10411179	Introduction to Islamic Banking	03	-
10406160	Islamic Creed	03	-
10406149	Analytical Exegesis	03	-
10406155	Analytical Hadith	03	-
10406158	Fundamentals of Hadith Tracking	03	-
10406263	Syntax I	03	10406143
10406364	Syntax II	03	10406143
10406265	Computer Use in Sharia Science	01	10406143
10401436	Islamic Education Practicum	02	11000102
10406366	Speech and Arts of Eloquence	02	10406263

Department elective requirements (12 credits)

Course #	Course title	Credits	Prerequisite
10401224	Fiqh of Ayat Al-Ahkam and Hadiths	03	-
10401325	Public Relations in Islam	03	-
10401226	Human Rights and Environment in Islam and International Human Law	03	-
10401427	Fundamentals of Legal Trials	03	-
10401328	Wills and Endowment	03	-
10401329	Fiqh Issues in Prohibition and Permissibility	03	-
10401135	History of Islamic Legislation	03	-
10411376	Fiqh of Financial Stock Exchanges	03	-
10411377	Commercial and Mutual Insurance	03	-
10411278	Zakat Economies and its Contemporary Applications	03	-
10411286	Public Finance in Islam	03	-
10406254	Biography of Prophet	03	-
10406272	Islamic Psychology	03	-
10406273	Islamic Sociology	03	-
10406453	Qur'anic Stories	03	-
10406453	Holy Qur'an Inimitability	03	-
10513316	Design and Production of Teaching Aids	03	-
10401337	Methods of Teaching Religion	03	-

Course Descriptions

10401111 PRINCIPLES OF SCIENTIFIC RESEARCH

This training course is designed to arm students with the necessary skills to do research. The course introduces students to research steps, qualities, manuscript editing and art of writing. By end of the course, each student is expected to deliver a paper in his/her major. Instructor's evaluation of student's work will depend on extent of student's respect of scientific research criteria.

10406142 HOLY QUR'AN SCIENCES

This course covers the following topics: definition of the Holy Qur'an, comparison between the Holy Qur'an and Hadith (prophetic teachings), most important sciences pertinent to the Holy Qur'an: Allah's divine message conveyed to prophets (wahi), manner of its revelation, collection and documentation of the Qur'an, reasons for revelation, Meccan and Medinan suras, the seven readings, Qur'an inimitability interpretation and exegesis of the Holy Qur'an, classes of exegesis's and their methods.

10406143 HADITH SCIENCES AND TERMINOLOGY

Topics covered in this course include status and importance of sunna as well as its proof; definition of hadith science, its origin and terminology; most important publications on hadith sciences and narrations; sanad and matan of hadith (transference, quotation and attribution), hadith endurance and performance, ways of endurance, narration of hadith by paraphrasing; reliability and unreliability and their levels which governed people's narrations, news of repentant sinner from lasciviousness, hadith chain of narration; infamous hadith; true, good and weak hadiths (their divisions) and fabrication of hadiths.

10406144 RECITATION AND MEMORIZATION

Topics covered in this course include virtue, levels, good manners of recitation, meaning of tajwid (elocution), its ruling, rules of isti'atha (seeking protection from Allah) al-basmalah (in the name of Allah) rules governing "silent noon" and tanween; rules governing silent meem istil'a phonemes, rules governing ra and qalqala; types of extension, places of articulation of sounds, phonemes and their properties, rules of assimilation; lam of Jalalah (Divine Glory); lam

ash-shamsiyah and al-qamariyah, hamzat al-wasl and hamzat al-qat', hissing sounds; stops and their symbols in the Holy Qur'an script, meeting of two consonants. Students will be drilled step by step on these rules to master them. Practical training will take 70% of all course classes.

10401130 METHODS OF SHAR'IA RULING

This course introduces students to the science of the principles of fiqh, its subjects, and history, most important publication on it, sharing ruling and its division; defining law (hukum taklifi) and its divisions; declaratory law (hukum wadi) and its divisions; al-hakim, al-mahkoom fi and al-mahkoom elayeh, eligibility and its impediments (al-ahlieh wa awaridha).

10401231 LEGISLATION PROOFS

This course addresses the following topics: evidence of the legal judgments (istihsan), deed of prophet's companion (sahabi) prohibition of all means of evil (sadd al-thara') presumption of continuity, (istishab), laws of the previous prophets (shar'a man qablana).

10401112 DOCTRINES (FIQH) OF PRAYER AND FASTING

This course introduces students to rules of purity, levels of water and impurities, ablution, bathing, rules of menstruation and impurity; rules of prayer times, manner, pillars, conditions; special prayers; traveler's prayer, Friday prayer, prayer of feasts, prayer for rain, prayer for funeral and prayer in times of fear; rules of fasting; definition, conditions, types, types of fast breaking, making up, atonement and rules of el-fiter feast alms.

10401113 DOCTRINES (FIQH) OF ZAKAT AND HAJ

This course dwells on rules of zakat (alms tax) and its conditions, its obligation, wealth liable to pay zakat, current issues in zakat, amounts of zakat; rules of haj (pilgrimage), its conditions, rituals, obligation, pillars, duties; sacrificial animals (hadi) and slaughter.

10401114 DOCTRINES (FIQH) MARRIAGE AND DIVORCE

This course examines the following topics: marriage contract, engagement, custodianship in marriage, marriage rights and duties, conditions, requirements, and elements of marriage contract: dowry, nafaqa (adequate support for the wife), legal shelter. It also addresses divorce, khul' (divorce initiated by wife after paying compensation) and separation between the couple, impacts of divorce on custody, nafaqa and compensation. The course ends with a detailed analysis of the personal status law articles dwelling on these issues.

10401215 INHERITANCE

This course covers a number of topics: raison d'être of inheritance, its conditions and prevention, inheritance by estimation, blood relationship

inheritance, obligatory will, transitional inheritance effective in shari'a courts, possessors of obligatory shares, sustenance, restitution and disassociation and process of dividing inheritance. The course concludes with a detailed analysis of the personal status law articles dealing with these issues.

10401116 LEASING AND SELLING CONTRACTS

This course examines a number of topics: concept of nominate contracts, classifications of financial contracts, levels of contract; necessity, suspension, corruption, validity and annulment; sale contract: pillars, impacts, subcontracts of sale contracts such contract of manufacture, forward sales contract, contract of money exchange; lease contract: pillars, types and impacts. The course also holds a comparison between these contracts and the laws of contracts effective in Palestine especially related to landlords and tenants.

10411175 DOCTRINES (FIQH) OF CONTEMPORARY FINANCIAL TRANSACTIONS

Topics covered in this course include contemporary fiqh financial issues such as usury rules of sale and exchange, versions of two sales in one sale; receipt of money: rules, contemporary versions, selling of debt and its contemporary applications, credit card rules, rules governing change of value of banknotes, paper money and its contemporary applications, fiqh of murabaha (resale) and fiqh of securities.

10406245 RECITATION AND MEMORIZATION I

This course deals with the following topics: 29th & 30th chapters of the Holy Qur'an in terms of recitation and memorization. This will be in addition to hands- on- training on elocution rules.

10406246 RECITATION AND MEMORIZATION II

This course builds on Recitation and Memorization I. It expects students to master recitation and memorization of al-Baqara sura. To this end, students will be trained to master the elocution rules.

10406247 RECITATION AND MEMORIZATION III

This advanced course will focus on recitation and memorization of two chapters from the Holy Qur'an: 27 and 28. Students will be drilled on elocution rules.

10401438 GRADUATION PROJECT

This practical course aims at training students to write research papers. Each student is expected to deliver a well-researched paper to the instructor on topic related to his/her major. The instructor will evaluate his/her paper according to a rubric for scientific research writing. Stages of writing will include choice of topic, topic of research, research outline and writing.

10401117 PERSONAL AND MATERIAL RIGHTS

In this course, students will be introduced to the concept of personal right, sources of personal rights; contract: definition, types and levels, rules of proposals and acceptance; eligibility and vices of consent place of contract, reason for contract, effect of contract and its termination, unilateral contracts; place and its restrictions; common ownership rules, reasons for acquisition of ownership: holding of permissible things, security, inheritance, will, communication, contract, emotive right, possession, rights branching out of ownership right: right of disposal, right of use, usufructary right, living and mustaha (right to use and exploit land belonging to another person), waqf (endowment) and rights of easement (irtifaq).

10401218 DONATION AND NOTARIZATION CONTRACTS AND

This course examines various kinds of contracts: hibah (gift) wadi'a (deposit), ariyah (loan of tangible asset) wakala (bailment representation) kafalah (guarantee) hawalah (transfer) and rahn (collateral). The students will be introduced to their pillars, traditions, consequences resulting from them. The course ends with a look at quarantine bankruptcy and reconciliation regulations and rules.

DOCTRINES (FIQH) OF COMPANIES

This course covers the following topics: definition of company, pillars of public and private company contracts, types of companies, conditions for partners' shares, rules governing distribution of profits and losses, raison d'être of liquidation and termination of companies and detailed analysis of most important types of fiqh of companies such as financial capital companies, business companies, partnership companies, and sharecropping companies. The course concludes with a detailed study of the most important types of modern commercial companies such as limited partnership companies' shareholding companies, general partnership company and particular partnership (muhasa) company.

10401420 PRINCIPLES OF COMPARATIVE DOCTRINES (FIQH) AND ITS CONTEMPORARY APPLICATIONS

This course addresses several topics: fiqh disagreement, its trends and reasons; method of interpretation in current fiqh issues, its foundations and characteristics; detailed analysis of contemporary fiqh medical issues such rules for medication, ruqya (incantation) quarantine; beginning and end of human life, abortion and its rules; brain death, mercy killing; cloning, rules of transplants and transfer of artificial insemination, and test tube babies; rules covering the presence of a third party during artificial insemination (womb, egg and semen hiring), miscarrying extra embryos, inseminated artificially, improvement of reproduction using genetic ways, rules governing determination of embryo sex, rules of infertilization, birth control, cosmetic surgery and its rules, rules of breaking hymen, rule of proving or disproving

lineage using genetic tests; medical testing prior to marriage; menstruation and child birth period from a medical and shari'a perspective; rules of fast breaking things such as eye drops, intravenous dosage and gastroscopy; shari'a rules pertinent to Aids (Aids patient's marriage, break up of Aids patient's marriage, abortion practice by women with Aids; medical mistakes and doctors' civil and criminal responsibility.

10401321 POLITICAL DOCTRINES (FIQH) IN ISLAM

Topics covered in this course include the foundations of the political system in Islam, its features; refutation of secularism; concept of pledge of allegiance, concept of social contract, mutual commitments emerging from them; head of state and his duties and rights, justice and its foundations; concept of democracy, citizenship, and liberalism versus Islam's attitude towards them; general political freedoms in the Islamic state, minorities' rights in the Muslim society, political parties and Islam's attitude towards them; elections and their consequences; concept of civil state and civil society and Islam's attitude toward them; legislative, executive and judicial authorities.

10401322 CRIMINAL LAW

This course addresses the following topics: Islamic criminal system, its foundations and characteristics, suspicions raised around the Islamic criminal system; discussion of these suspicions; rules for crimes on self, excluding self and embryo; penal law of Islam for zina (adultery), qathf (accusation of zina which cannot be proved by four witnesses), hirabah (robbery) sariqah (theft) punishment for shurb al-khameri (drinking liquor or intoxicating drinks), riddah (apostasy) tazir (corporal punishment administered at the discretion of the judge) in Islamic fiqh. A comparison will be made between these topics in Islamic fiqh and common laws.

10401423 DOCTRINES (FIQH) OF CLAIM AND EVIDENCE

Topics covered in this course include introduction to judiciary science, its history and development of its institutions; shari'a court and formal justice; conditions for assumption of judiciary position; good attributes of judge; justice guarantees in judiciary, judge's time and spatial specialization, ways of providing evidence in Islam, rules pertinent to it; obliging the judges to stick to one school (maliki, hanafi, hanbali, shafi'i). The course ends with a general introduction to basics of lawsuits and Islamic law of evidence.

10401432 TEXTUAL INDICATIONS

This course addresses several topics: literal proofs, mabahith al-lafthiyah (literal semantics) divisions of words, textual implications and their divisions; rhetoric: definition, divisions, textual conflicts, preponderance, ways of resolving conflicts/contradictions and preponderance between texts.

10401433 INTERPRETATION AND SHARI'A PURPOSES

This course addresses a number of topics: introduction to ijihad (individual judgment), its importance, types, applications and purposes; introduction to purposes of shari'a, its importance, types, levels, manner of preserving it; contemporary fiqh applications on ijihad according to shari'a purposes.

10401234 FIQH OF ISLAMIC LEGAL MAXIMS

Topics covered in this course include the following: introduction to fiqh principles/maxims, their topics, importance, origin, and development of sources; differences between fiqh principles and fundamental maxims; most important old and modern publications; fields agreed upon and school maxims. This is in addition to a detailed study coupled with examples and application of the five fiqh maxims and others in numerous fields.

10411179 INTRODUCTION TO ISLAMIC BANKING

This course first surveys the origin and development of Islamic banks; their foundation, goals, characteristics, their social and economic role, their relationship with the central bank and traditional banks; sources of their financing, ways of investment and financing in them; ways of financing in Islamic banks: order to purchase murabaha (cost-plus financing) joint mudaraba (profit sharing) musharaka (joint venture) ijarah (lease, rent, wage) ending in ownership, as-salam al-muwazi (parallel forward delivery sale); istisna'a muwazi (back-to-back manufacturing) banking services they provide, criteria for distributions of dividends in them, management of Islamic banks, shari'a supervision of Islamic banks, practical application of shari'a supervision.

10406160 ISLAMIC CREED I

Topics covered in the course include the meaning of Islamic aqida (creed) its specific aspects and effects on the individual and society, Qur'an's way of building aqida, signs or indications of the existence of the creator; things that bar people from attention to belief in Allah; meaning of oneness, its types, requirements and detractors; brief explanation of other pillars of belief: belief in angels, heavenly books, messengers, day of judgment and fate and divine decree.

10406149 ANALYTICAL EXEGESIS I

This course covers the following topics: interpretation of In'am sura: providing analytical explanation, highlighting aspects of syntax and style and ijaz (inimitability in the verses). This is in addition to the sura's presentation style of the issue of aqida (creed) and the hows of debating infidels; wisdom from the Meccan Quran's focus on aqida rather than legislative details.

10406155 ANALYTICAL HADITH I

This course is an analytical study of thirty hadiths (Prophetic teachings) selected from Jami' al- Kalam wal Hikam. These hadiths are particularly

pertinent to niyah (intent) iman (faith) bidah' (path taken in religion) shubhat (semblance) advice, brotherhood, tawba (repentance) and soul infusion in body.

10406258 FUNDAMENTALS OF HADITH TRACKING

This course covers the following topics: ways of tracking prophetic traditions (hadiths), al-athar (narrations) from original sunna sources; way of tracking hadith through the computer; ways of hadiths compilation; their order, the hows of sand (chain of transmission) and matn (text) by employing what students have learned in sciences of hadith. Seventy percent of course classes will be practical.

10406263 SYNTAX I

Topics covered in the course include parts of speech (noun, verb, alphabet, morpheme; the constructive and the classified (al-mabni and al-mu'arab), definite and indefinite articles; nouns in nominative state: subject and predicate; kana and its sisters, predicate of inna and its sisters; verbs and their types; their construction and inflection ('irab). The course ends with application of the above on Qur'anic texts, hadiths and other Arabic texts.

10406364 SYNTAX II

This course builds on Syntax I. Students will learn about mansoobat (accusatives): five types of objects; istithna (exception) al-hal (state), tamyeez (specification) majroorat (genitives), al-adad (number) and its metonymy; at-tawabi' (appositives): addition, substitution, emphasis, and sifa (adjective). The course ends with application of the above topics on Qur'anic texts, prophetic traditions (hadiths) and other Arabic texts. Students will also practice inflection of Al-Qahf sura and highlight the grammatical rules in it.

10406265 COMPUTER USE IN SHARI'A SCIENCES

This course aims at helping student acquire necessary computer skills and knowledge which enable him/her to access information about shari'a by using the computer, CDs, and internet. The course also aims at helping students get access to websites on shari'a sciences, ifta house (religions edicts) fiqh conclaves and research centers that have interest in Islamic financial institutions. In this course, students are expected to deliver a term paper on one of shari'a sciences matters, using solely a computer.

10401436 ISLAMIC EDUCATION PRACTICUM

This course trains students on how to prepare lesson plans, write down lesson notes and follow steps of lesson design. Every student will make observation of classes for junior and secondary school teachers, thus allowing him/her to link between theoretical knowledge he/she receives in class and practical teaching. This practical experience will allow him/her to learn about the school current state of affairs. Every student will also teach school classes

and will be evaluated by a department instructor, school head master and Islamic education teacher. The course includes an array of theoretical and practical texts. Students will receive sixteen hours of theoretical instruction and 60 training hours.

10406366 SPEECH AND ART OF ELOQUENCE

This course covers a number of topics: importance of public speaking and its role in public awareness and guidance, the hows of preparing a successful speech, its qualities; basics of selection of a topic for a speech; qualities of a successful speaker, things that must be avoided in the speech and by the speaker.

The course also addresses teaching topics: importance of giving a religious lesson; difference between lesson and speech; the ABCs of preparation of a successful lesson, the hows of planning a series of religious lessons. The students will be introduced to model religious speeches and lessons of famous speakers and preachers. To this end, You Tube and videos will be used. Students will also receive practical training on how to deliver public speeches. The practical part of the course will take 70% of the course times.

10401224 FIQH OF AYAT AL-AHKAM AND THEIR HADITHS

Topics covered in this course are importance of studying fiqh issues based on legislative texts, presentation and demonstration on verses of commandments (ayat al-ahkam), and on hadiths of commandments and their methods. This is in addition to an analytical fiqh study of a selected number of legislative texts from the Holy Qur'an and sunna. These include thehar (calling one's wife his mother) qalqala (collaterals and dependents) mistaken killing, documentation of debts and hirabah (robbery) penalty verses. Hadiths include menstruation, 'arayah (lending something for use), theft penalty, innovative divorce and obedience to custodian and judges.

10401325 INTERNATIONAL RELATIONS IN ISLAM

Students in this course will be introduced to concept of international relations, concept of international law, and the most important fiqh publications on international relations in times of peace: People of the Book (dhimmis), safety, musta'man (one who is granted security in a Muslim land), international relations in times of war: jihad (holy war) prisoners of war, arbitration, ravages of war, treaties in Islam in terms of their types, conditions, ways of concluding them; stages of signing them, termination of treaties and their repeal; Islam and international human law.

104012226 HUMAN RIGHTS, ENVIRONMENT IN ISLAM AND INTERNATIONAL HUMAN LAW

This course highlights the following issues: attitude of Islamic shari'a towards human rights and environment rights. The course details human rights, such as right to live, move, and express oneself freely in Islam shari'a in comparison

with international conventions and laws. The course also provides a realistic study of human rights and public freedom in Arab societies, rights of cross sections of the society (women and children); Islam's attitude towards the environments and law pertinent to its protection. The course ends with a look at the concept of international human rights law, human rights in wars and a comparison between Islam and international human law.

10401427 PRINCIPLES OF LEGAL TRIALS

Topics covered in this course include definition of judiciary science, its types; differences between judiciary and ifta (religious edict), science of the principles of trials: its definition, nature, field, characteristics, importance, purposes, and principles of shari'a adaption. The course also addresses regulation of the judiciary system (courts and competency): levels of courts, their competencies, authorities, rulings; judges and their rulings, judges' assistants; court facilities; judicial rulings and ways of appealing them. In addition to this theoretical knowledge, the students will practice what they have learned through the study of real written models of shari'a trials pertinent to the aforementioned rulings. Students are expected to deliver well written reports on these models. Students will also make observation of at least two authentic trial sessions in courts and record the proceedings of these sessions.

10401328 WILLS AND ENDOWMENT

This course covers several topics: al-wasiyah (will), its meaning, its ruling, wisdom, pillars, conditions; its retraction and annulment; its acceptance and return; types of wills; waqf (endowment) its meaning, types, conditions, substitution; invalidity; waqf claims, ways of investing and developing waqf resources.

10401329 FIQH ISSUES IN PERMISSIBILITY AND PROHIBITION

This courses addresses the following topics: concept of ibaha (permissibility) and hather (prohibition), fiqh scholars' methodology in presenting ibaha and hather issues in fiqh books; study of several new fiqh issues pertinent to ibaha and hather such as saying prayers on board of plane, drugs, imported meat (canned, frozen and dried); faith (iman) and vows.

10401135 HISTORY OF ISLAMIC LEGISLATION

This course first introduces students to the meaning of fiqh and tashri' and characteristics of each, origin of Islamic fiqh and roles and characteristics of each; originality of Islamic fiqh, fiqh disagreements and causes; origin of opinion and hadith schools and characteristics of each school. Then the course moves to well-known figures of fiqh: sahabis (companions) and tabi'in (followers), fiqh schools of thought; introduction to the followed fiqh schools: their followers, principles, characteristics, publications of fiqh scholars. The course ends with textual fiqh study of selected topics from early fiqh

scholars' books. The course also sheds light on contemporary conclaves and institutions, introduces most important contemporary fiqh scholars and their methods and the most important contemporary fiqh books and methods.

10411376 FIQH OF STOCK EXCHANGES

This course introduces students to the concept of stock exchanges, their importance, functions, types, instruments and ways of trading in them. It also addresses the shari'a rules pertinent to these exchanges, Islamic stock exchange shares and their characteristics, types, shari'a rules, bonds and their characteristics, types, and shari' rules; muqarada(coupons) bonds; Islamic sukuk (financial certificates)and their shari'a controls; options, future, margin selling money/currency exchange contracts and their shari'a rules.

10411377 COMMERCIAL AND MUTUAL INSURANCE

In this course, students are introduced to the concept of insurance, its types, insurance policy/contract, its pillars and legal and fiqh characteristics; commercial insurance ruling, Islamic mutual insurance, its principles, characteristics, goals, procedures, accountability; mutual insurance companies, their structure, way of work. The course ends with an application of the mutual insurance company system.

10411278 ZAKAT ECONOMIES AND ITS CONTEMPORARY APPLICATIONS

Topics covered in this course include a general fiqh introduction to zakat, its rules, conditions, amount of due, and its contemporary application: its accounting, zakat of shares and bonds, zakat of productive things, zakat of investment assets; zakat economies: position in the financial system, Islamic distribution system, zakat and tax; impact of zakat on investment, consumption, savings, distribution, unemployment, inflation, development, and economic development.

10411286 PUBLIC FINANCE IN ISLAM

This course introduces students to the concept of public finance, financial system revenues, and expenditures, house of money (bayt al-mal) financing and investment budget of Islamic state, consumption, expenditures and investment in the Islamic state.

10406259 BIOGRAPHY OF THE PROPHET

Topics addressed in this course include concept of sira (biography), its sources, importance, benefit, qualities, most important contemporary suspicions around the Qur'anic narrative and responses to it; study of the most important events in the life of the Messenger, peace be upon him, from birth to death. This course is a detailed analytical study of the prophet's biography and the lessons that can be drawn from it.

10406272 ISLAMIC PSYCHOLOGY

This course begins with a definition of what a psychological problem is, concept of psychology, its origin, Muslim scholars' contributions to it; importance of psychology for scholars and preachers, concept of Islamic psychology, its foundations, most important theories of psychology and Islam's attitude towards them; the psyche in the Holy Qur'an: its types, illnesses, treatment; most important contemporary psychological problems and their treatment from an Islamic perspective. The course will address problems such as depression, suppression, homosexuality, tendency towards violence, authoritarianism, schizophrenia. The course ends with a look at the most important psychological problems facing drug addicts and Islam's treatment of these problems.

10406273 ISLAMIC SOCIOLOGY

This course introduces students to the concept of sociology as a social science, its origin, Muslim scholars' contributions to it, importance of sociology for a Muslim scholar and preacher. The course also highlights the concept of Islamic sociology, its goals, topics, fields and methods of research; most important contemporary theories in sociology and Islam's attitude towards them; bases of society building from an Islamic perspective, concept of civic society and its institutions. The course also introduces students to the concept of social peace and its foundations, the mosque, ruling authority and role of each in the Muslim society, social traditions in the Holy Qur'an and sunna; factors behind rise and fall of civilizations from an Islamic perspective. The course concludes with a study of the most serious social problems in modern societies and in Arab Muslim societies and how Islam addresses these problems which include crimes, drug addiction, marriage disputes, family breakdown, ethnic disputes, social violence, favoritism, bribery and political and financial corruption.

10406248 QUR'AN STORIES

This course covers several topics: meaning of story in language and istilahan, concept of Qur'anic story, its objectives and characteristics, most important contemporary suspicions raised around Qur'anic stories and responses to them. The course is also a detailed study of models of Qur'anic stories. The models include stories of Adam, Noah, Moses (Musa) David (Da'oud), Solomon (Suleiman) peace be upon them. The course also touches on stories of non-prophets, such as the stories of Quroon, Toloot and the cave companions.

10406453 HOLY QUR'AN INIMITABILITY

This course begins with definition of miracle, inimitability (ijaz) and its importance, history of research in inimitability and its development, comparison between prophets' miracles, types of inimitability in the Holy Qur'an: rhetorical, legislative, scientific, numerical, etc.

10513316 DESIGN AND PRODUCTION OF EDUCATIONAL AIDS

This course begins with a description of the theoretical framework of audio visual educational aids in term of concept, importance characteristics, criteria for use, foundations of their design and production. The course then addresses the concept of the communication

process and its elements. The course concludes with design and production of educational aids, by students, in their specialization in harmony with its theoretical framework. Students are expected to make use of modern technology in their design and production of these aids.

10401337 METHODS OF RELIGION TEACHING

Topics covered in this course include the following: methods of teaching Islamic religion topics such as Holy Qur'an and its interpretation, prophetic teaching, aqida (creed), morals, fiqh, Islamic economy, financial transactions; concept of the school curriculum and factors affecting it; modern pedagogical theories, and methods of teaching primary, junior and secondary school students.

Department Staff Members

Instructor	Academic rank	Academic degree
Dr. Jamal Hashash	Assistant Professor	B.A., An-Najah N. Uni., 1985 M.A., An-Najah N. Uni. Ph.D, Holy Qur'an Uni., Sudan, 1997
Professor Marwan Qadoumi	Associate Professor	B.A., Sudan, 1972 M.A., Al-Azhar, 1978 Ph.D. Saudi Arabia, 1982
Professor Mohammad Ali Sulaibi	Assistant Professor	B.A., University of Jordan, Jordan, 1973; M.A. Al-Azhar University, Egypt, 1978; Ph.D. Saudi Arabia, 1984
Professor Ala' Maqbool	Instructor	B.A. Sudan, 1993; B.A. Sudan, 1996; Ph.D. Egypt, 2007
Professor Naser ed-Deen esh-shaer	Assistant Professor	B.A. An-Najah N.Uni. 1985; M.A Uni. of Jordan; Ph.D., Uni. of Manchester, UK, 1999
Professor Ma'amoon Al-Rifa'i	Assistant Professor	B.A., Uni. of Jordan, 1978; M.A Uni. of Jordan; Ph.D., Uni. of Khartoum, 1995.
Professor Sayel Amarah	Assistant Professor	B.A., An-Najah N. Uni. 1997; M.A. An-Najah N. Uni., 2000; Ph.D. Malaysia, 2009.
Professor Abdallah Abu Wahdan	Assistant Professor	B.A. Islamic Uni. Baghdad, Iraq. M.A. Islamic Uni. Baghdad, Iraq. Ph.D. Islamic Uni. Baghdad, Iraq.
Professor Hasan Khader	Assistant Professor	B.A, Uni. of Jordan, 1976; M.A., An-Najah N. Uni. 1992; Ph.D., Sudan, 1998.

{ Department of Fundamentals of Religion }
(Usool Ed-Deen)

Program Vision

The vision of Usool Edeen Program springs from the strong faith in the uniqueness of the Islamic nation, religion, culture and civilization. It also springs from the need of the Islamic nation and humanity in general for the rise of this civilization, to shine anew, in all fields of life. This civilization has a distinctive vision, for it contains mercy for people and honor for human being. This civilization also rests on a divine revelation and can offer solutions to all problems of life, in different spheres, and check on the majority of these problems which plague mankind these days in all fields of life: scientific, intellectual, social, economic, etc.

Program Mission

This program seeks to turn out graduates who are distinctive academically, culturally, morally and missionarily. It also endeavors to make these graduates possess a good basic knowledge of Islamic law in general and Qur'an sciences; exegesis; hadith and aqida (creed) in particular. This is in addition to making them possess the right qualifications to assume a teaching or missionary job. The program also strives to supply the society with qualified academics, specialists and experts and meet the religious and educational needs of the people in the field of Islamic shari'a and in Qur'an sciences, exegesis, hadith and aqida in particular.

Program Aims

1. This program aims at turning out distinctive graduates who enjoy the following traits:
 - Feel proud of their religion and culture and have a sense of belonging to their civilization and nation.
 - Set good examples for others in their beliefs, morals, behavior and treatment. -Possess a solid knowledge in all religious academic aspects and particularly in their major. These include Qur'an, hadith, exegesis, and aqida sciences, thus qualifying them to assume job in teaching, ifta (issuance of religion decrees), preaching, guidance and other religious-related jobs.
 - Enjoys the ability to effectively preach and teach in all fields of religious knowledge pertinent to his/her major, and voice his shari'a opinion in intellectual, behavioral issues which concern the society.
2. Contributing to the consolidation of contemporary Islamic sciences, and offering Islamic alternatives in all fields of life and knowledge and particularly in Qur'an, hadith and aqida sciences.
3. Contributing to dissemination of original legal knowledge and educational awareness of this knowledge that responds to and faces contemporary problems and challenges in the Palestinian society in particular and in the Muslim society in general especially in fields of Qur'an, hadith and aqida sciences.

4. Turning out graduates who have the ability to think critically and properly according to a legal scientific methodology, thus enabling him/her to infer legal rulings and participate in debates, dialogs and persuasion.
5. Linking religion with reality and taking it from theory to practice particularly in the field of Qur'an, hadith and aqida sciences.
6. Highlighting the glory of the Holy Qur'an and Sunna as two for legal sciences and all other related religious sciences.
7. Nurturing a number of positive values, and central community human concerns in the student. These values include respect of human rights, protection of the environment, respect of others, acceptance of the principle of pluralism and disagreement and fostering the principle of social justice and peace.

Program Intended Learning Outcomes

The Usool Edeen graduate is expected to be able to do all the following:

- Call for Islam in a modern way and introduce it in simple manner and use a moderate approach particularly when it comes to his/her specialization: Qur'an, hadith and aqida sciences.
- Deliver a religious lesson or mawida in an audience particularly in the fields of Qur'an, hadith and aqida sciences.
- Deliver a heart touching and thought-provoking religious sermon particularly in Qur'an, hadith and aqida sciences with minimum errors in language structure.
- Write legal scholarly papers in the field of Qur'an, hadith and aqida sciences, and practice documentation of old and contemporary primary and secondary sources/references and demonstrate an ability to analyze ideas and think critically.
- Answer people's religious and legal questions in Qur'an, hadith and aqida sciences.
- Recite the Holy Qur'an with observation and application of recitation and elocution rules.
- Lead prayer services in mosques.
- Teach Islamic education discipline in schools and use modern teaching methods.
- Use modern technology (computers) and modern resources to conduct scientific research in shari'a sciences and particularly in Qur'an, hadith and aqida sciences.
- Use social media, such as facebook and twitter, in reaching out to people to help them solve their mundane and religious issues and call for Allah.

Curriculum Plan for a B. A. Degree in Fundamentals of Religion (Usool Ed-Deen)

The Department of Usool Ed-Deen offers a single specialization in Usool Ed-Deen. Students wishing to major in this field must successfully complete 129 credits: of these, 18 are university requirements, 95, department compulsory, 12 electives, and four as free.

University requirements (18 credits)

Course #	Course title	Credits	Prerequisite
11000101	Islamic Culture	03	-
11000102	Arabic Language	03	-
11000103	University English I	03	-
11000323	University English II	03	-
11000127	Introduction to Computer Science	03	-
110005	Palestinian Studies	03	-
11032100	Remedial English	03	-

University free requirements (4 credits)

Department requirements (95 credits)

Course #	Course title	Credits	Prerequisite
1040111	Principles of Scientific Research	03	-
10406142	Holy Qur'an Sciences	03	-
10406143	Hadith Sciences and Terminology	03	
10406144	Recitation and Elocution		
10401130	Methods of Shari'a Ruling		-
10401231	Shari'a Proofs	03	10401130
10401112	Fiqh of Prayer and Fasting	03	-
10401113	Fiqh of Zakat and Hajj	03	-
10401215	Fiqh of Marriage and Divorce	03	-
10401215	Inheritance	03	-
1040116	Leasing and Selling Contracts	03	-
10411175	Fiqh of Contemporary Financial Transactions	03	-
10406245	Qur'an Recitation and Memorization I	01	10406144
10406246	Qur'an Recitation and Memorization II	02	10406245
10406247	Qur'an Recitation and Memorization III	01	10406246
10401438	Graduation Project	03	10401111
10406248	Qur'an Stories	03	-
10406149	Analytical Exegesis I	03	-
10406250	Analytical Exegesis II	03	-
10406351	Methods of Exegetes	03	-
10406452	Thematic Exegesis	03	-
10406357	Methods of Narrators		-
10406453	Holy Qur'an Inimitability	03	-
10406254	Prophet Biography	03	-
10406155	Analytical Hadith I	03	-
10406256	Analytical Hadith II	03	-
10406258	Methodology of Hadith Tracking	03	-

Course #	Course title	Credits	Prerequisite
10406359	Thematic Hadith	03	-
1040636	Islamic Creed I	03	-
10406361	Islamic Creed II	03	-
10406462	Comparative Religions	03	-
10406263	Syntax I	03	10406143
10406364	Syntax II	03	10406143
10406265	Computer Use in Shari'a Sciences	01	10406143
10401436	Islamic Education Practicum	02	11000102
10406366	Speech and Arts of Eloquence	02	10406263

Department elective requirements (12 credits)

Course #	Course title	Credits	Prerequisite
10406367	Prophetic Guidance in Manners and Raqa'iq	03	-
10406368	Sunna and Its Status in Legislation	03	-
10406469	Islamic Sects and Contemporary Schools of Thought	03	-
10406370	Methods of Da'wa	03	-
		03	-
10406371	Studies in Islamic History	03	-
10406272	Islamic Psychology	03	-
10406273	Islamic Sociology	03	-
10406274	Qur'anic Rhetoric	03	-
10401224	Fiqh of Ayat Al-Ahkam and Its Hadiths	03	-
10411286	Public Finance in Islam	03	-
10401135	History of Islamic Legislation	03	-
10401433	Ijtihad and Shari'a Purposes	03	-
10401321	Political Fiqh in Islam	03	-
10411376	Fiqh of Stock Exchanges	03	-
10411179	Introduction to Islamic Banking	03	-
10513316	Design and Production of Teaching Aids	03	-
10401337	Methods of Teaching Religion	03	-

Course Descriptions

10401111 PRINCIPLES OF SCIENTIFIC RESEARCH

This training course is designed to arm students with the necessary skills to do research. The course introduces students to research steps, qualities, manuscript editing and art of writing. By end of the course, each student is expected to deliver a paper in his/her major. Instructor's evaluation of student's work will depend on extent of student's respect of scientific research criteria.

10406142 HOLY QUR'AN SCIENCES

This course covers the following topics: definition of the Holy Qur'an, comparison between the Holy Qur'an and Hadith (prophetic teachings), most important sciences pertinent to the Holy Qur'an: Allah's divine message conveyed to prophets (wahi), manner of its revelation, collection and documentation of the Qur'an, reasons for revelation, Meccan and Medinan suras, the seven readings, Qur'an inimitability interpretation and exegesis of the Holy Qur'an, classes of exegesis's and their methods.

10406143 HADITH SCIENCES AND TERMINOLOGY

Topics covered in this course include status and importance of sunna as well as its proof; definition of hadith science, its origin and terminology; most important publications on hadith sciences and narrations; sanad and matan of hadith (transference, quotation and attribution), hadith endurance and performance, ways of endurance, narration of hadith by paraphrasing; reliability and unreliability and their levels which governed people's narrations, news of repentant sinner from lasciviousness, hadith chain of narration; infamous hadith; true, good and weak hadiths (their divisions) and fabrication of hadiths.

10406144 RECITATION

Topics covered in this course include virtue, levels, good manners of recitation, meaning of tajwid (elocution), its ruling, rules of isti'atha (seeking protection from Allah) al-basmalah (in the name of Allah) rules governing "silent noon" and tanween; rules governing silent meem istil'a phonemes, rules governing ra and qalqala; types of extension, places of articulation of sounds, phonemes and their properties, rules of assimilation; lam of Jalalah (Divine Glory); lam ash-shamsiyah and al-qamariyah, hamzat al-wasl and hamzat al-qat', hissing

sounds; stops and their symbols in the Holy Qur'an script, meeting of two consonants. Students will be drilled step by step on these rules to master them. Practical training will take 70% of all course classes.

10401130 METHODS OF SHAR'IA RULING

This course introduces students to the science of the principles of fiqh, its subjects, and history, most important publication on it, shari'a ruling and its division; defining law (hukum taklifi) and its divisions; declaratory law (hukum wadi) and its divisions; al-hakim, al-mahkoom fi, al-mahkoom elayeh, and Eligibility and its impediments al-ahleyeh wa awaridha.

10401231 SHARI'A PROOFS

This course addresses the following topics: evidence of the legal judgments (istihsan), deed of the Prophet's companions (sahabi) prohibition of all means of evil (sadd al-thara') presumption of continuity, (istishab), laws of the previous prophets (shar'a man qablana).

10401112 DOCTRINES (FIQH) OF PRAYER AND FASTING

This course introduces students to rules of purity, levels of water and impurities, ablution, bathing, rules of menstruation and impurity; rules of prayer times, manner, pillars, conditions; special prayers: traveler's prayer, Friday prayer, prayer of feasts, prayer for rain, prayer for funeral and prayer in times of fear; rules of fasting; definition, conditions, types, types of fast breaking, making up, atonement and rules of el-fiter feast alms.

10401113 DOCTRINES (FIQH) OF ZAKAT AND HAJ

This course dwells on rules of zakat (alms tax) and its conditions, its obligation, wealth liable to pay zakat, current issues in zakat, and amounts of zakat; rules of haj (pilgrimage), its conditions, rituals, obligation, pillars, duties; sacrificial animals (hadi) and slaughter.

10401114 FIQH OF MARRIAGE AND DIVORCE

This course examines the following topics: marriage contract, engagement, custodianship in marriage, marriage rights and duties, conditions, requirements, and elements of marriage contract: dowry, nafaqa (adequate support for the wife), and legal shelter. It also addresses divorce, khul' (divorce initiated by wife after paying compensation) and separation between the couple, impacts of divorce on custody, nafaqa and compensation. The course ends with a detailed analysis of the personal status law articles dwelling on these issues.

10401215 INHERITANCE

This course covers a number of topics: raison d'etre of inheritance, its conditions and prevention, inheritance by estimation, blood relationship inheritance, obligatory will, transitional inheritance effective in shari'a courts, possessors of obligatory shares, sustenance, restitution and disassociation and

process of dividing inheritance. The course concludes with a detailed analysis of the personal status law articles dealing with these issues.

10401116 LEASE AND SELL CONTRACTS

This course examines a number of topics: concept of nominate contracts, classifications of financial contracts, levels of contracts; necessity, suspension, corruption, validity and annulment; sale contract: pillars, impacts, subcontracts of sale contracts such as contract of manufacture, forward sales contract, contract of money exchange; lease contract: pillars, types and impacts. The course also holds a comparison between these contracts and the laws of contracts effective in Palestine especially related to landlords and tenants.

10411175 FIQH OF CONTEMPORARY FINANCIAL TRANSACTIONS

Topics covered in this course include contemporary fiqh financial issues such as usury rules of sale and exchange, versions of two sales in one sale; receipt of money: rules, contemporary versions, selling of debt and its contemporary applications, credit card rules, rules governing change of value of banknotes, paper money and its contemporary applications, fiqh of murabaha (resale) and fiqh of securities.

10406245 RECITATION AND MEMORIZATION I

This course deals with the following topics: 29th & 30th chapters of the Holy Qur'an in terms of recitation and memorization. This will be in addition to hands- on- training on elocution rules.

10406246 RECITATION AND MEMORIZATION II

This course builds on Recitation and Memorization I. It expects students to master recitation and memorization of Al-Baqara sura. To this end, students will be trained to master the elocution rules.

10406247 RECITATION AND MEMORIZATION III

This advanced course will focus on recitation and memorization of two chapters from the Holy Qur'an: 27 and 28. Students will be drilled on elocution rules.

10401438 GRADUATION PROJECT

This practical course aims at training students to write a paper on one of the principles of religion. Each student is expected to deliver a well-researched paper to the instructor on a topic related to his/her major. The instructor will evaluate his/her paper according to a rubric for scientific research writing. Stages of writing will include choice of topic, topic of research, research outline and writing.

10406248 QUR'ANIC STORIES

This course covers several topics: meaning of story in language and usage, concept of Qur'anic story, its objectives and characteristics, most important

contemporary suspicions raised around Qur'anic stories and responses to them. The course is also a detailed study of models of Qur'anic stories. The models include stories of Adam, Noah (Nooh), Moses (Musa) David (Da'oud), Solomon (Suleiman) peace be upon them. The course also touches on stories other than those of the prophets, such as the stories of Qaroon, Taloot and the cave companions.

10401321 POLITICAL FIQH IN ISLAM

Topics covered in this course include the foundations of the political system in Islam, its features; refutation of secularism; concept of pledge of allegiance, concept of social contract, mutual commitments emerging from them; head of state and his duties and rights; justice and its foundations; concept of democracy, citizenship, and liberalism versus Islam's attitude towards them; general political freedoms in the Islamic state, minorities' rights in the Muslim society, political parties and Islam's attitude towards them; elections and their consequences; concept of civil state and civil society and Islam's attitude toward them and legislative, executive and judicial authorities.

10401433 IJTIHAD AND SHARI'A PURPOSES

This course addresses a number of topics: introduction to ijihad (individual interpretation/ judgment), its importance, types, applications and purposes; introduction to purposes of shari'a, their importance, types, levels, manner of preserving them; contemporary fiqh applications on ijihad according to shari'a purposes.

10411179 INTRODUCTION TO ISLAMIC BANKING

This course first surveys the origin and development of Islamic banks: their foundation, goals, characteristics, social and economic role, relationship with the central bank and conventional banks; sources of their financing, ways of investment and financing in them; ways of financing in Islamic banks: order to purchase murabaha (cost-plus financing) joint mudaraba (profit sharing) musharaka (joint venture) ijarah (lease, rent, wage) ending in ownership, as-salam al-muwazi (parallel forward delivery sale); istisna'a muwazi (back-to-back manufacturing) banking services they provide, criteria for distribution of dividends in them, management of Islamic banks, shari'a supervision of Islamic banks, and practical application of shari'a supervision.

10406160 ISLAMIC CREED I

Topics covered in the course include the meaning of Islamic aqida (creed) its specific aspects and effects on the individual and society, Qur'an's way of building aqida, signs or indications of the existence of the creator; things that bar people from attention to belief in Allah; meaning of oneness, its types, requirements and detractors; brief explanation of other pillars of belief: belief in angels, heavenly books, messengers, day of judgment and fate and divine decree.

10406361 ISLAMIC CREED

This course is a detailed study of the belief in the angels, the prophets, the messengers, the heavenly books, the Day of Judgment, signs of the hour, resurrection, torture in grave, torture in hell, and blessings of paradise.

10406149 ANALYTICAL EXEGESIS I

This course is devoted to interpretation of In'am sura: analytical explanation, highlight of aspects of syntax and style and ijaz (inimitability in the verses). This is in addition to the sura's presentation style of the issue of aqida (creed) and the manner of debating infidels; wisdom from the Meccan Quran's focus on aqida rather than legislative details.

10406150 ANALYTICAL EXEGESIS II

This course is devoted to the analytical interpretation of An-Noor sura, Medinan Qur'an's presentation of legislative rulings such as adultery punishment, qathf al-muhsanat (accusations of zina against the chastity of pure women) details of ifq incident, shari'a rulings which immunize and protect the Muslim society from deviation; explanation of isti'than (permission manners), and ornamentation and dressing code. The course concludes with interpretation of Mujadalah sura by the students.

10406357 METHODS OF NARRATORS

This course is a study of the methods and ways of hadith narrators in their publication of hadith books. These books include Al-Jawami'; Al-Bukhari wa Muslim; Kutob As-Sunan Al-Arba'; Sunan Ad-Darami; Al-Baihaki; Ad-Dar Qattani; Kutob Al-Masaneed (Musnad Ahmed); Kutob Al-Musanafat (Musanaf Abdelraziq; Ibn Abi Shayba); Kutob Al-Mustadraqat (Al-Hakim); Al-Mustakhrajat; and Kutob At-Tabakat (Tabakat Ibn Sa'ad).

10406263 SYNTAX I

Topics covered in the course include parts of speech (noun, verb, alphabet, morpheme; the constructive and the classified (al-mabni and al-mu'arab), definite and indefinite articles; nouns in nominative state: subject and predicate; kana and its sisters, predicate of inna and its sisters; verbs and their types; their construction and inflection ('irab). The course ends with application of the above on Qur'anic texts, hadiths and other Arabic texts.

10406364 SYNTAX II

This course builds on Syntax I. Students will learn about mansoobat (accusatives): five types of objects; istithna (exception) al-hal (state), tamyeez (specification) majroorat (genitives), al-adad (number) and its metonymy; at-tawabi' (appositives): addition, substitution, emphasis, and sifa (adjective). The course ends with application of the above topics on Qur'anic texts, prophetic traditions (hadiths) and other Arabic texts. Students will also practice inflection of Al-Qahf sura and highlight the grammatical rules in it.

10406265 COMPUTER USE IN SHARI'A SCIENCES

This course aims at helping student acquire necessary computer skills and knowledge which enable him/her to access information about shari'a by using the computer, CDs, and internet. The course also aims at helping students get access to websites on shari'a sciences, ifta house (religions edicts) fiqh conclaves and research centers that have interest in Islamic financial institutions. In this course, students are expected to deliver a term paper on one topic of shari'a sciences, using solely a computer.

10401436 ISLAMIC EDUCATION PRACTICUM

This course trains students on how to prepare lesson plans, write down lesson notes and follow steps of lesson design. Every student will make observation of classes for junior and secondary school teachers, thus allowing him/her to link between theoretical knowledge he/she receives in class and practical teaching. This practical experience will allow him/her to learn about the school current state of affairs. Every student will also teach school classes and will be evaluated by a department instructor, school headmaster and Islamic education teacher. The course includes an array of theoretical and practical texts. Students will receive sixteen hours of theoretical instruction and 60 training hours.

10406366 SPEECH AND ART OF ELOQUENCE

This course covers a number of topics: importance of public speaking and its role in public awareness and guidance, the manner of preparing a successful speech, its qualities; basics of selection of a topic for a speech; qualities of a successful speaker, things that must be avoided in the speech and by the speaker.

The course also addresses teaching topics: importance of giving a religious lesson; difference between lesson and speech; the ABCs of preparation of a successful lesson, the manner of planning a series of religious lessons. The students will be introduced to model religious speeches and lessons of famous speakers and preachers. To this end, You Tube and videos will be used. Students will also receive practical training on how to deliver public speeches. The practical part of the course will take 70% of the course times.

10401224 FIQH OF AYAT AL-AHKAM AND THEIR HADITHS

Topics covered in this course are importance of studying fiqh issues based on legislative texts, presentation and demonstration on verses of commandments (ayat al-ahkam), and on hadiths of commandments and their methods. This is in addition to an analytical fiqh study of a selected number of legislative texts from the Holy Qur'an and sunna. These include thehar (calling one's wife his mother) qalqala (collaterals and dependents) mistaken killing, documentation of debts and hirabah (robbery) and penalty verses. Hadiths

include menstruation, ‘arayah (lending something for use), theft penalty, innovative divorce and obedience to custodian and judges.

104012226 HUMAN RIGHTS, ENVIRONMENT IN ISLAM AND INTERNATIONAL HUMAN LAW
This course highlights the following issues: attitude of Islamic shari’a towards human rights and environment rights. The course details human rights, such as right to live, move, and express oneself freely in Islam shari’a in comparison with international conventions and laws. The course also provides a realistic study of human rights and public freedom in Arab societies, rights of cross sections of the society (women and children); Islam’s attitude towards the environments and laws pertinent to its protection. The course ends with a look at the concept of international human rights law, human rights in wars and a comparison between Islam and international human law.

1040635 METHODS OF EXEGETES
This course addresses the following topics: introduction to exegesis and interpretation and differences between them, conditions for exegete qualification; transmitted exegesis: definition, study of some of its models; a look of exegesis of deviant sects. The course ends with the study of the methods of some contemporary exegetes.

10406452 THEMATIC EXEGESIS
This course deals with the objective exegesis in terms of definition and difference from analytical exegesis; importance of objective exegesis with the emphasis on contemporary issues: freedom, women, methodology of research, knowledge, dialog; factors behind rise and fall of civilizations, shura (consultancy) and ethics during wars.

10406155 ANALYTICAL HADITH I
This course is a study of 33 hadiths from Jami’ al-Uloom wal Hikam (according to the analytical method). The course addresses hadiths dealing with niya (intention) iman (belief), bid’a (heresy) shubohat (doubt) nasiha (advice) brethren, tawba (repentance), soul incantation in body.

10406256 ANALYTICAL HADITH II
This course is a study of hadiths (from Nayel al-Awtar aw Subol as-Salam) according to the analytical method. These hadiths cover attire, ushrat an-nisa (social living of woman) food, hunting slaughtered (animals) drinks, funerals, jihad (holy war).

10406258 METHODOLOGY OF HADITH TRACKING
This course covers several topics: ways of tracking hadiths, al-athar (narrations) from original sunna sources; ways of tracking hadith on the computer; the manner of hadith compilation and their arrangement, the manner of drawing a hadith family tree, steps, of judging on hadith in terms

of sanad (chain of narration) and matn (actual wording of hadith) by making use of what students should have taken in Hadith Sciences course. Practical classes will take 70% of total number of course classes.

10406359 THEMATIC HADITH

This course begins with a definition of what a thematic hadith is and its difference from an analytical hadith; its importance in our present life. Then, the course moves to a detailed study of models of thematic hadiths with emphasis on contemporary issues such tidings on inevitable victory of Islam in hadith, methods of education in hadith, treatment of religious extremism and exaggeration in religious phenomenon in hadiths. The course ends with a study of sex education, medical issues and rights of people with special needs in hadiths.

10406462 COMPARATIVE RELIGIONS

This course is a study of comparative religions as a science, its origin, Muslim scholars' efforts in it, and state of this science in modern age. It is also a detailed study of Judaism and Christianity in terms of their history, origin of their creeds (tenets), sects, laws, religious rites, feasts, holy religious texts and their current state of affairs. The course presents also a textual study of topics in their scriptures in comparison with their counterparts in the Holy Qur'an. The course caps with a look at non-heavenly religions with the aim of the familiarizing students with them.

10406367 PROPHETIC GUIDANCE IN MANNERS AND CULTIVATION

This course focuses on a selection of prophetic hadiths pertinent to Islamic manners and heart softening hadiths. It also focuses on hadiths of virtues which educate a Muslim on noble morals.

10406367 SUNNA AND ITS STATUS IN LEGISLATION

Topics covered in this course include definition of sunna, its rank in legislation, deniers of authenticity of sunna, in the past and at present; fabrication of hadith phenomenon and scholars' efforts to fight it; sunna between the shiites and al-khawarij (rebels), Sahabis' (companions) justice; sunna between the mu'tazilah, (political or religious neutralists) and al-mutakalimoon (Muslim theologians), sunna and orientalist, shobha (doubt) against sunna and its refutation. The course ends with a look at controls for sunna understanding.

10406469 ISLAMIC SECTS AND CONTEMPORARY IDEOLOGICAL DOCTRINES

This course begins with an examination of the development of Islamic sects and reasons for their emergence. It then moves to the study of the most important Islamic sects, their origin and attitude towards them in the light of the Holy Qur'an and sunna. These sects to be highlighted include ahlu sunna (adherents/followers of the sunna and the community) al-mu'tazilah (neutralists) al-matardiyah, al-sha'irah, al-marji'ah, al-Khawarij (rebels) the

Shiites, the sufiyyah (sufism).

The course is also a study of some deviant contemporary sects such as al-Qadyaniyah, al-Ahmadiyah, and al-Nasiriyah. The course also addresses a number of contemporary schools of thought, ideologies and trends and their impacts and Islam's attitude towards them. These include communism secularism, liberalism, capitalism, nationalism, globalization, and Zionism. The course caps with a study of the most important contemporary Islamic trends, their origins and position towards them. These trends include reformers, revivals, Muslim Brotherhood, contemporary salafists, jihadist salafists, al-Qa'ida and Liberation Party.

10406370 METHODS OF DA'WA

Topics covered in this course include call to Allah, its importance, methods of calling to Allah, preaching, qualities of a successful caller to Islam, necessary contemporary religious knowledge/information caller should enjoy; importance of the caller's understanding of the reality, its particulars, the society and its contemporary problems, importance of direct calling and its methods such as calling through setting good examples and treatment, calling through modern literature: fiction, poetry, thought, essay or article, calling through social and charitable events. The course also touches on how calling can make use of mass media and modern technology such as social media (facebook, twitter, e-mail, etc) electronic sites, TV satellite channels, and projectors. The course includes practical training for students in call to Islam and its methods. This practical part of the course takes 30% of the course.

10406371 STUDIES IN ISLAMIC HISTORY

This course introduces students to the concept of history, science and philosophy of history, Qur'an's attitude towards history, most important historians in Islamic history, sources of Islamic history and their methods, orientlists' methods in their study of Islamic history, most important suspicions they have raised this history and discussion of their shubhat (doubts). The course ends with analytical descriptive study of the most important events in Islamic history since the guided caliphate through the downfall of the Ottoman caliphate and the beginnings of the modern age.

10406274 QUR'ANIC RHETORIC

This course begins with the definition of rhetoric as a science inimitability of the Qur'anic rhetorical style; concept, importance, characteristics, most important writings on it, past and present, rhetoric of word in the Holy Qur'an, science of meaning, science of philology, and science of rhetorical figures. This will be accompanied with practical applications of each on the Holy Qur'an verses. The course caps with an artistic description in the Holy Qur'an.

10406375 ISLAMIC MEDIA

Topics covered in this course include definition of media, its importance, functions, influence and attributes; development of mass media in contemporary world, legislative controls on media in Islam, impact of media on society, traits of Islamic perception of media, objectives of media in Islam, role of Islamic media in society development, extent of freedom given to media in Islam, role of women in the media from an Islamic perspective. The course is also a study of effective mass media real models from an Islamic perspective. These include satellite channels, magazines, and newspapers. The course also addresses the prospective role of Islamic media between reality and ambition. The course concludes with a study of live models from contemporary Islamic media.

10401135 HISTORY OF ISLAMIC LEGISLATION

This course first introduces students to the meaning of fiqh and tashri' and their characteristics; origin and role of Islamic fiqh and its characteristics; originality of Islamic fiqh, fiqh disagreements and causes; origin of opinion and hadith schools and characteristics of each school. Then the course moves to well-known figures of fiqh: sahabis (companions) and tabi'in (followers), fiqh schools of thought; introduction to the followed fiqh schools: their followers, principles, characteristics, and publications of fiqh scholars. The course ends with textual fiqh study of selected topics from early fiqh scholars' books. The course also sheds light on contemporary conclaves and institutions, and introduces most important contemporary fiqh scholars.

10411376 FIQH OF STOCK EXCHANGES

This course introduces students to the concept of stock exchanges, their importance, functions, types, instruments and ways of trading in them. It also addresses the shari'a rules pertinent to these exchanges, Islamic stock exchange shares and their characteristics, types, shari'a rules, bonds and their characteristics, types, and shari' rules; muqarada(coupons) bonds; Islamic sukuk (financial certificates)and their shari'a controls; options, future, margin selling money/currency exchange contracts and their shari'a rules.

10411286 PUBLIC FINANCE IN ISLAM

This course introduces students to the concept of public finance, financial system revenues, and expenditures, house of money (bayt al-mal) financing and investment budget of Islamic state, consumption, expenditures and investment in the Islamic state.

10406254 PROPHET BIOGRAPHY

Topics addressed in this course include concept of sira (biography), its sources, importance, benefit, qualities, most important contemporary suspicions around the Qur'anic narrative and responses to them; study of the most

important events in the life of the Messenger, peace be upon him, from birth to death. This course is a detailed analytical study of the prophet's biography and the lessons that can be drawn from it.

10406272 ISLAMIC PSYCHOLOGY

This course begins with a definition of what a psychological problem is, concept of psychology, its origin, Muslim scholars' contributions to it; importance of psychology for scholars and preachers, concept of Islamic psychology, its foundations, most important theories of psychology and Islam's attitude towards them; the psyche in the Holy Qur'an: its types, illnesses, treatment; most important contemporary psychological problems and their treatment from an Islamic perspective. The course will address problems such as depression, suppression, homosexuality, tendency towards violence, authoritarianism, schizophrenia. The course ends with a look at the most important psychological problems facing drug addicts and Islam's treatment of these problems.

10406273 ISLAMIC SOCIOLOGY

This course introduces students to the concept of sociology as a social science, its origin, Muslim scholars' contributions to it, importance of sociology for a Muslim scholar and preacher. The course also highlights the concept of Islamic sociology, its goals, topics, fields and methods of research; most important contemporary theories in sociology and Islam's attitude towards them; bases of society building from an Islamic perspective, concept of civic society and its institutions. The course also introduces students to the concept of social peace and its foundations, the mosque, ruling authority and role of each in the Muslim society, social traditions in the Holy Qur'an and sunna; factors behind rise and fall of civilizations from an Islamic perspective. The course concludes with a study of the most serious social problems in modern societies and in Arab Muslim societies and how Islam addresses these problems which include crimes, drug addiction, marriage disputes, family breakdown, ethnic disputes, social violence, favoritism, bribery and political and financial corruption.

10406453 HOLY QUR'AN INIMITABILITY

This course begins with a definition of miracle, inimitability (ijaz) and its importance, history of research in inimitability and its development, comparison between prophets' miracles, and types of inimitability in the Holy Qur'an: rhetorical, legislative, scientific, numerical, etc.

10513316 DESIGN AND PRODUCTION OF TEACHING AIDS

This course begins with a description of the theoretical framework of audio visual educational aids in term of concept, importance characteristics, criteria for use, foundations of their design and production. The course then addresses

the concept of the communication process and its elements. The course concludes with design and production of educational aids, by students, in their specialization in harmony with its theoretical framework. Students are expected to make use of modern technology in their design and production of these aids.

10401337 METHODS OF RELIGION TEACHING

Topics covered in this course include the following: methods of teaching Islamic religion topics such as Holy Qur'an and its interpretation, prophetic teaching, aqida (creed), morals, fiqh, Islamic economy, financial transactions; concept of the school curriculum and factors affecting it; modern pedagogical theories, and methods of teaching primary, junior and secondary school students.

Department staff members

Name	Academic Rank	Academic degrees
Dr.Mohamad Shraide	Professor	B.A- Jordan-1976 M.A -KSA -1980 PhD- KSA-1983
Dr. Khadr Sawandk	Associate professor	B.A Joradn-1976 M.A KSA-1980 PhD KSA-1985
Dr.Khaled Adwan	Assistant professor	B.A –Jerusalem -1984 MA-Jordan-1993 Ph.D-Sudan1996
Ghassan Badran	Lecturer	BA-Jordan-1984 MA-Jordan-1988
Raeq Saedi	Lecturer	BA-Jordan-1988 MA-Jordan-1993
Dr.Odeh Abdallah	Associate professor	BA Jordan-1996 MA-Jordan-1999 Ph.D-Malaysia-2003
Dr.Mohsen Khaldi	Associate Professor	BA –Jerusalem-1987 MA.Jordan1993 PhD-Sudan-1995
Dr.Hasan Naqeeb	Assistant Professor	BA-Jordan -1978 M.A-KSA-1984 PhD-KSA-1991

{ Department of Shari'a and Islamic Banking }

Program Vision

The vision of the Shari'a and Islamic Banking Program springs from the strong faith in the uniqueness of the Islamic nation, religion, culture and civilization. It also springs from the need of the Islamic nation and humanity in general for the rise of this civilization, to shine anew, in all fields of life. This civilization has a distinctive vision, for it contains mercy for people and honor for human being. This civilization also rests on a divine revelation and can offer solutions to all problems of life, in different spheres, and check on the majority of these problems which plague mankind these days in all fields of life: scientific, intellectual, social, economic, etc.

Program Mission

This Program seeks to turn out graduates who are distinctive academically, culturally, morally and missionarily. It also endeavors to make these graduates possess a good basic knowledge of Islamic law, traditional financial and banking sciences and Islamic banking in particular. This is in addition to making them possess the right qualifications to assume a teaching or missionary job or a financial and banking job in Islamic financial institutions. The program also strives to supply the society with qualified academics, specialists and experts to meet the religious and educational needs of the people in the field of Islamic shari'a and in the field of Islamic economy and Islamic banks work in particular.

Program Aims

1. This program aims at turning out distinctive graduates who enjoy the following traits:
 - Feel proud of their religion and culture and have a sense of belonging to their civilization and nation.
 - Set good examples for others in their beliefs, morals, behavior and treatment. Possess a solid knowledge in all religious academic aspects and particularly in their major. These include fiqh of financial transactions, and contemporary Islamic economic and banking sciences, finance sciences and modern banking.
 - Possess the ability and necessary academic qualification to assume a financial or banking job in Islamic financial institutions or in other financial institutions, or qualify him/her to work in teaching, and *ifta* (issuance of religion decrees), and other financial/religious-related jobs.
 - Enjoys the fiqh talent necessary for individual interpretation, and ifta in financial issues, issuing religious edicts/decrees, on the basis of proper fiqh particularly in current economic and financial issues.
2. Supplying the Palestinian society with the necessary qualified cadres, experts and specialists, meeting the local market demands and the people's religious and academic

needs in legal work and in Islamic economy and Islamic banking in particular.

3. Contributing to the contemporary Islamic consolidation of sciences, offering Islamic alternatives in all fields of life and knowledge and particularly in the students' major: Islamic economics, Islamic banking and contemporary financial transactions.
4. Contributing to dissemination of awareness of original Islamic legal and economic knowledge that responds to and faces contemporary problems and meets challenges in the Palestinian society in particular and in the Muslim society especially in fields of Islamic economics, Islamic banking contemporary financial transactions
5. Reaching out to relevant academic institutions and other institutions as well, at home and abroad, to share and exchange experiences, ideas and knowledge in the field of Islamic economics, Islamic banking and current financial transactions.
6. Nurturing a number of positive values, and central societal human causes in the student. These values include respect of human rights, protection of the environment, respect of others, acceptance of the principle of pluralism and disagreement and fostering the principles of social justice and peace.

Program Intended Learning Outcomes

The Islamic banking graduate is expected to be able to do all the following:

- Call for Islam in a modern way and introduce it in simple manner and use a moderate approach particularly when it comes to his/her specialization: contemporary fiqh transaction sciences, economic issues and current Islamic banking.
- Deliver a heart touching and thought-provoking religious lesson particularly in contemporary fiqh transaction sciences, contemporary economic and Islamic banking issues.
- Write legal scholarly papers in the field of contemporary fiqh of transactions, and current economic and Islamic banking issues; practice of documentation of old and contemporary primary and secondary sources/references and demonstrate an ability to analyze ideas, provisions/ rulings and events.
- Answer people's religious and legal questions and give *fatwas* (decrees) about current fiqh financial transactions as well as economic and Islamic banking issues.
- Recite the Holy Qur'an with observation and application of recitation and elocution rules and values.
- Lead prayer services in mosques.
- Teach Islamic education discipline in schools and use modern teaching methods.
- Assume a financial or banking position in Islamic financial institutions and any other financial institutions.
- Use modern technology (computers) and modern resources to conduct scientific research in shari'a sciences, fiqh of transactions, and contemporary Islamic economic, banking and financial sciences.

- Use social media, such as facebook and twitter, to reaching out to people to help them solve their problems and educate them on religions issues of their concern particularly in fiqh of transactions, and current Islamic economic, banking and financial sciences.

Distribution of credit hours

University compulsory courses:	18 credit hours
Department compulsory courses:	94 credit hours
Department electives courses:	12
Free courses:	04
Total number:	128

University compulsory courses: (8 credit hours)

All courses are three credit hours unless stated otherwise.

Course #	Course title	Credit hours	Prerequisites
11000101	Islamic Culture	02	-
11000102	Arabic Language	03	-
11000103	University English I	03	-
11000323	University English II	03	-
11000105	Palestinian Studies	03	-
11000127	Introduction to Computer Science	03	-
11000117	Leadership and Communication Skills	03	-
10032100	Remedial English	03	-

Department requirements (94 credit hours)

Course #	Course title	Credit hrs.	Prerequisites
1040111	Principles of Scientific Research	03	-
10406142	Holy Qur'an Sciences	03	-
10406143	Sciences and Terminology of Hadith	03	-
10406130	Recitation and Elocution	03	-
10401130	Legislative Ruling Methods		
10401231	Tashri' Proofs	03	10401130
10401113	Fiqh of Zakat and Hajj	03	-
10401114	Fiqh of Marriage and Divorce		
10401215	Inheritance	03	-
1040116	Lease and Sell Contract	03	-
10411175	Fiqh of Contemporary Financial Transactions	03	-
10406245	Recitation and Memorization I	02	10406144
10406246	Recitation and Memorization II	02	10406245
10406247	Recitation and Memorization III	02	10406246

Course #	Course title	Credit hrs.	Prerequisites
10401438	Graduation Project	03	10401111
10401218	Donation and Notarization Contracts	03	-
10401319	Fiqh of Companies	03	-
10411376	Fiqh of Stock Exchange		
10411377	Commercial and Mutual Insurance		
10411278	Zakat Economies and Its Contemporary Applications		
10411179	Introduction to Islamic Banking	03	-
10411480	Legislative Control and Criteria		10411179
10411381	Islamic Banking and Monetary Theory		
10411382	Finance Risks in Islamic Banks	3	10311179
10801111	Microeconomics		
10801112	Principles of Macroeconomics		10801111
10871121	Principles of Finance		
10861111	Principles of Financial Accounting I		
10861121	Principles of Financial Accounting II		
10871213	Financial Management I		
10871464	Banking Credit Management		
10801423	Project Evaluation and Feasibility Studies		
10401436	Islamic Education Practicum		
10411483	Practical Training in Financial Institutions		

Department elective requirements (12 credits)

Course #	Course title	Credits	Prerequisite
10411384	Accounting of Islamic Financial Institutions		
10411285	Fiqh of Financial Maxims		
10411286	Public Finance in Islam	03	-
10411387	Economic Development in Islam		
10411388	Waqf Economies		
10411389	International Economy and the Muslim World		
10411290	History of Economic Thought and Banking in Islam		
10411491	Islamic Banking Challenges		
10401433	Ijtihad and Shari'a Purposes		
10401117	Personal and Material Rights		
10406254	Prophet Biography	03	-
10406272	Islamic Psychology		
10406149	Analytical Exegesis I		10406142
10871259	Computer-based Financial Applications		10871213
10871412	Financial Enterprise Management	03	10871121
10876111	Principles of Marketing		
10876224	Banking Marketing		108761111

Course Descriptions

10401111 PRINCIPLES OF SCIENTIFIC RESEARCH

This training course is designed to arm students with the necessary skills to do research. The course introduces students to research steps, qualities, manuscript editing and art of writing. By end of the course, each student is expected to deliver a paper in his/her major. Instructor's evaluation of student's work will depend on extent of student's respect of scientific research criteria.

10406142 HOLY QUR'AN SCIENCES

This course covers the following topics: definition of the Holy Qur'an, comparison between the Holy Qur'an and Hadith (prophetic teachings), most important sciences pertinent to the Holy Qur'an: Allah's divine message conveyed to prophets (wahi), manner if its revelation, collection and documentation of the Qur'an, reasons for revelation, Meccan and Medinan suras, the seven readings, Qur'an inimitability interpretation and exegesis of the Holy Qur'an, classes of exegetes and their methods.

10406143 HADITH SCIENCES AND TERMINOLOGY

Topics covered in this course include status and importance of sunna as well as its proof; definition of hadith science, its origin and terminology; most important publications on hadith sciences and narrations; sanad and matan of hadith (transference, quotation and attribution), hadith endurance and performance, ways of endurance, narration of hadith by paraphrasing; reliability and unreliability and their levels which governed people's narrations, hadith chain of narration; infamous hadith; true, good and weak hadiths (their divisions) and fabrication of hadiths.

10406144 RECITATION

Topics covered in this course include virtue, levels, good manners of recitation, meaning of tajwid (elocution), its ruling, rules of isti'atha (seeking protection from Allah) al-basmalah (in the name of Allah) rules governing "silent noon" and tanween; rules governing silent meem istil'a phonemes, rules governing ra and qalqala; types of extension, places of articulation of sounds, phonemes and their properties, rules of assimilation; lam of Jalalah (Divine Glory); lam ash-shamsiyah and al-qamariyah, hamzat al-wasl and hamzat al-qat', hissing sounds; stops and their symbols in the Holy Qur'an script, meeting of two consonants. Students will be drilled step by step on these rules to master them. Practical training will take 70% of all course classes.

10401130 METHODS OF SHAR'IA RULING

This course introduces students to the science of the principles of fiqh, its subjects, and history, most important publication on it, shari'a ruling and its divisions; defining law (hukum taklifi) and its divisions; declaratory law (hukum wadi) and its divisions; al-hakim, al-mahkoom fi, al-mahkoom elayeh, and eligibility and its impediments alahleyeh wa awaredha.

10401231 SHARI'A PROOFS

This course addresses the following topics: evidence of the legal judgments: the Holy Qur'an and sunna; analogy (qiyas), consensus (ijma') (istihsan), deeds of the Prophet's companions (sahabi), custom ('urf) (masaleh mursalah) prohibition of all means of evil (sadd al-thara') presumption of continuity, (istishab), laws of the previous prophets (shar'a man qablana).

10401112 DOCTRINES (FIQH) OF PRAYER AND FASTING

This course introduces students to rules of purity, levels of water and impurities, ablution, bathing, rules of menstruation and impurity; rules of prayer times, manner, pillars, conditions; special prayers: traveler's prayer, Friday prayer, prayer of feasts, prayer for rain, prayer for funeral and prayer in times of fear; rules of fasting; definition, conditions, types, types of fast breaking, making up, atonement and rules of el-fiter feast and its alms/ charity.

10401113 DOCTRINES (FIQH) OF ZAKAT AND HAJ

This course dwells on rules of zakat (alms tax) and its conditions, its obligation, wealth liable to pay zakat, current issues in zakat, amounts of zakat; rules of haj(pilgrimage), its conditions, rituals, obligation, pillars, duties; sacrificial animals (hadi) and slaughter.

10401114 DOCTRINES (FIQH) OF MARRIAGE AND DIVORCE

This course examines the following topics: marriage contract, engagement, custodianship in marriage, marriage rights and duties, conditions, requirements, and elements of marriage contract: dowry, nafaqa (adequate support for the wife), and legal shelter. It also addresses divorce, khul' (divorce initiated by wife after paying compensation) and separation between the couple, impacts of divorce on custody, nafaqa and compensation. The course ends with a detailed analysis of the personal status law articles dwelling on these issues.

10401215 INHERITANCE

This course covers a number of topics: raison d'etre of inheritance, its conditions and prevention, inheritance by estimation, blood relationship inheritance, obligatory will, transitional inheritance effective in shari'a courts, possessors of obligatory shares, sustenance, restitution and disassociation and process of dividing inheritance. The course concludes with a detailed analysis of the personal status law articles dealing with these issues.

10401116 LEASE AND SELL CONTRACTS

This course examines a number of topics: concept of nominate contracts, classifications of financial contracts, levels of contract; necessity, suspension, corruption, validity and annulment; sale contract: pillars, impacts, subcontracts of sale contracts such as contract of manufacture, forward sales contract, contract of money exchange; lease contract: pillars, types and impacts. The course also holds a comparison between these contracts and the laws of contracts effective in Palestine especially related to landlords and tenants.

10411175 FIQH OF CONTEMPORARY FINANCIAL TRANSACTIONS

Topics covered in this course include contemporary fiqh financial issues such as usury rules of sale and exchange, versions of two sales in one sale; receipt of money: rules, contemporary versions, selling of debt and its contemporary applications, credit card rules, rules governing change of value of banknotes, paper money and its contemporary applications, fiqh of murabaha (resale) and fiqh of securities.

10406245 RECITATION AND MEMORIZATION I

This course deals with the following topics: 29th & 30th chapters of the Holy Qur'an in terms of recitation and memorization. This will be in addition to hands- on- training on elocution rules.

10406246 RECITATION AND MEMORIZATION II

This course builds on Recitation and Memorization I. It expects students to master recitation and memorization of al-Baqara sura. To this end, students will be trained to master the elocution rules.

10406247 RECITATION AND MEMORIZATION III

This advanced course will focus on recitation and memorization of two chapters from the Holy Qur'an: 27 and 28. Students will be drilled on elocution rules.

10401438 GRADUATION PROJECT

This practical course aims at training students to write a paper. Each student is expected to deliver a well-researched paper to the instructor on a topic related to his/her major. The instructor will evaluate his/her paper according to a rubric for scientific research writing. Stages of writing will include choice of topic, topic of research, research outline and writing.

10401117 PERSONAL AND MATERIAL RIGHTS

In this course, students will be introduced to the concept of personal right, sources of personal rights; contract: definition, types and levels, rules of proposals and acceptance; eligibility and vices of consent place of contract, reason for contract, effect of contract and its termination, unilateral contracts; place and its restrictions; common ownership rules, reasons for acquisition

of ownership: holding of permissible things, security, inheritance, will, communication, contract, emotive right, possession, rights branching out of ownership right: right of disposal, right of use, usufructary right, living and musataha (right to use and exploit land belonging to another person), waqf (endowment) and rights of easement (irtifaq).

10401218 DONATION AND NOTARIZATION CONTRACTS

This course examines various kinds of contracts: hibah (gift) wadi'a (deposit), ariyah (loan of tangible asset) wakala (bailment representation) kafalah (guarantee) hawalah (transfer) and rahn (collateral). The students will be introduced to their pillars, traditions, consequences resulting from them. The course ends with a look at quarantine bankruptcy and reconciliation regulations and rules.

FIQH OF COMPANIES

This course covers the following topics: definition of company, pillars of public and private company contracts, types of companies, conditions for partners' shares, rules governing distribution of dividends and losses, raison d'être of liquidation and termination of companies and detailed analysis of most important types of fiqh of companies such as financial capital companies, business companies, partnership companies, and sharecropping companies. The course concludes with a detailed study of the most important types of modern commercial companies such as limited partnership companies' shareholding companies, general partnership companies, solidarity companies and particular partnership (muhasa) companies.

10401433 IJTIHAD AND SHARI'A PURPOSES

This course addresses a number of topics: introduction to ijihad (individual interpretation/ judgment), its importance, types, applications and purposes; introduction to purposes of shari'a, its importance, types, levels, manner of preserving it; contemporary fiqh applications on ijihad according to shari'a purposes.

10411179 INTRODUCTION TO ISLAMIC BANKING

This course first surveys the origin and development of Islamic banks; their foundation, goals, characteristics, social and economic role, relationship with the central bank and conventional banks; sources of their financing, ways of investment and financing in them; ways of financing in Islamic banks: order to purchase murabaha (cost-plus financing) joint mudaraba (profit sharing) musharaka (joint venture) ijarah (lease, rent, wage) ending in ownership, as-salam al-muwazi (parallel forward delivery sale); istisna'a muwazi (back-to-back manufacturing) banking services they provide, criteria for distributions of dividends in them, management of Islamic banks, shari'a supervision of Islamic banks, and practical application of shari'a supervision.

10406149 ANALYTICAL EXEGESIS I

This course covers the following topics: interpretation of In'am sura: providing analytical explanation, highlighting aspects of syntax and style and ijaz (inimitability in the verses). This is in addition to the sura's presentation style of the issue of aqida (creed) and the hows of debating infidels; wisdom from the Meccan Quran's focus on aqida rather than legislative details.

10401436 ISLAMIC EDUCATION PRACTICUM

This course trains students on how to prepare lesson plans, write down lesson notes and follow steps of lesson design. Every student will make observation of classes for junior and secondary school teachers, thus allowing him/her to link between theoretical knowledge he/she receives in class and practical teaching. This practical experience will allow him/her to learn about the school current state of affairs. Every student will also teach school classes and will be evaluated by a department instructor, school headmaster and Islamic education teacher. The course includes an array of theoretical and practical texts. Students will receive sixteen hours of theoretical instruction and 60 training hours.

10411376 FIQH OF STOCK EXCHANGES

This course introduces students to the concept of stock exchanges, their importance, functions, types, instruments and ways of trading in them. It also addresses the shari'a rules pertinent to these exchanges, Islamic stock exchange shares and their characteristics, types, shari'a rules, bonds and their characteristics, types, and shari' rules; muqarada (coupons) bonds; Islamic sukuk (financial certificates) and their shari'a controls; options, future, margin selling money/currency exchange contracts and their shari'a rules.

10411377 COMMERCIAL AND MUTUAL INSURANCE

In this course, students are introduced to the concept of insurance, its types, insurance policy/contract, its pillars and legal and fiqh characteristics; commercial insurance ruling, Islamic mutual insurance, its principles, characteristics, goals, procedures, accountability; mutual insurance companies, their structure, and way of work. The course ends with an application of the mutual insurance company system.

10411278 ZAKAT ECONOMIES AND ITS CONTEMPORARY APPLICATIONS

Topics covered in this course include a general fiqh introduction to zakat, its rules, conditions, amount of due, and its contemporary application: its accounting, zakat of shares and bonds, zakat of productive things, zakat of investment assets; zakat economies: position in the financial system, Islamic distribution system, zakat and tax; impact of zakat on investment, consumption, savings, distribution, unemployment, inflation, development, and economic development.

10411286 PUBLIC FINANCE IN ISLAM

This course introduces students to the concept of public finance, financial system revenues, and expenditures, house of money (bayt al-mal) financing and investment budget of Islamic state, consumption, expenditures and investment in the Islamic state.

10406259 PROPHET BIOGRAPHY

Topics addressed in this course include concept of sira (biography), its sources, importance, benefit, qualities, most important contemporary suspicions around the Qur'anic narrative and responses to it; study of the most important events in the life of the Messenger, peace be upon him, from birth to death. This course is a detailed analytical study of the Prophet's biography and the lessons that can be drawn from it.

10406272 ISLAMIC PSYCHOLOGY

This course begins with a definition of what a psychological problem is, concept of psychology, its origin, Muslim scholars' contributions to it; importance of psychology for scholars and preachers, concept of Islamic psychology, its foundations, most important theories of psychology and Islam's attitude towards them; the psyche in the Holy Qur'an: its types, illnesses, treatment; most important contemporary psychological problems and their treatment from an Islamic perspective. The course will address problems such as depression, suppression, and homosexuality, tendency towards violence, authoritarianism, and schizophrenia. The course ends with a look at the most important psychological problems facing drug addicts and Islam's treatment of these problems.

10411480 LEGISLATIVE AUDIT AND STANDARDS

This courses addresses several topics; concept, importance, aims, instruments and controls of legislative audit, criteria of control issued by the Accounting and Auditing Organization for Islamic Financial Institutions(Standards 1, 2, 3, and 4) Practical models of shari'a audit, Shari'a (legislative) standards and their accounting applications for purchase order Murabaha (cost-plus financing), joint mudarabah (joint venture of profit sharing) ijara (lease ending in ownership) musharakah ending in ownership, parallel forward delivery sale (Al-salam Al-muwazi), parallel istisna' (manufacturing) Islamic sukuk (financial certificates) financial securities and banking services.

10411381 MONETARY THEORY AND ISLAMIC BANKING

This course covers several topics: definition, origin, functions, development of money and monetary rules; Islam's attitude towards money, Muslim scholars' monetary theories, riba' (usury) and exchange rules, economic monetary theories and Islam's attitude towards them, monetary market, rates of interest, inflation, history/origin of banks and their functions, monetary policy, goals

and instruments, the central bank, Islamic and commercial banks and their relationship with the monetary policy.

104111382 CREDIT RISKS IN ISLAMIC BANKING

Topics covered in this course include concept of risk and its relationship with gharar (uncertainty) and gambling in Islamic fiqh, banking risk, types of banking risks, Basel Committee on Banking Supervision Requirements and the extent of their relevance to the Islamic banks; study in mortgages crisis and its relationship with banking risks, risks of joint mudarabah, guarantee of safe custody based on trust in Islamic fiqh, risks of purchase order murabaha, risks of lease ending in ownership, etc.; ways of avoiding banking risks and investment risks fund.

10801111 MICROECONOMICS

This course begins with the definition of economics, and the relationship between economics and other sciences. Then the course moves to address supply and demand, market equilibrium, elasticity and its types, consumer behavior, producer behavior, costs on the short and the long runs. The course end with a look at free competition market, full Monopoly/market, monopoly competition market, minority monopoly market and production elements market.

1081112 MACROECONOMICS

This course involves the study of the following topics: concept of macroeconomics, comparison between macroeconomics and macroeconomics national income accounts and the ways of their measurement; unemployment: its measures, its types and economic effects; inflation: its calculation, its types and its economic effects; balance between products and services; consumption, investment, total demand and total supply, mechanism of the work of the multiplier; balance in the monetary market rate of interest and its role in microeconomics; concept of financial policy and its instruments; concept of monetary policy; and its instruments, balance of payments. The course ends with a study of the most important theories in foreign trade and economic growth.

10871121 PRINCIPLES OF FINANCE

Topics treated in this course include definition of the time value of money, relationship between return and risk, appropriate financing foundations for companies, ways of measuring risks and their types, profit polices of companies, cost of capital, and optimal capital structure.

10861111 PRINCIPLES OF FINANCIAL ACCOUNTING I

In this course, students are introduced to accounting, its principles and hypotheses, entry system, accounting cycle; preparation of basic financial statements: income statement, change statement in equity and statement of

financial position. Students will be also taught how to conduct inventory adjustments pertinent to different accounts by end of fiscal year. The course ends with a look at accounting errors, their detection and treatment.

10861121 PRINCIPLES OF FINANCIAL ACCOUNTING II

Topics dealt with in this course include accounting treatment of current assets and fixed assets as well as current liabilities.

10871213 FINANCIAL MANAGEMENT I

This course is a study of the role of financial management in projects, functions of financial management, profitability planning, financial planning, financial analysis, use of financial percentages, management of working capital, management of current assets, management of short-term financing sources, stock exchanges, and management of long-term financing sources (shares and bonds).

10871464 BANKING CREDIT MANAGEMENT

This course focus on the study of the structure of the model banking apparatus, bank interest rates, and their relationship with economic changes and circumstances; credit instruments, credit considerations particularly concerning guarantees, their types and banking suitability.

10801423 PROJECT EVALUATION AND FEASIBILITY STUDIES

Topics dealt with in this course include the hows of using scientific foundations in data collection about the project, its analysis and study, with the aim of arriving at results which would determine the viability of the project in terms of its technical, marketing, financial and social aspects. The course also addresses the bases of financial analysis concept of cash flow, ways of evaluation of investment projects and choice of the best project.

10411483 PRACTICAL TRAINING IN FINANCIAL INSTITUTIONS

This is an internship course which allows students to get practical training at financial Islamic institutions, all in accordance with a prepared plan. Each student is expected to finish 100 hours of training.

10411384 ACCOUNTING FOR ISLAMIC FINANCIAL INSTITUTIONS

This course covers several topics: general introduction to accounting rules; Islamic bank accounting divisions: Deposits Accounting, Cashier Accounting and Bills Accounting; Financing Accounting Ways in Islamic banks: mudarbaha accounting, purchase order accounting; financing accounting through mudaraba, financing accounting through partnership (musharaka), parallel forward delivery sale, parallel istisna' (manufacturing) credit sale accounting; Islamic accounting standards, Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), foundations of profit accounting in Islamic bank and its dividends, preparation of financial

statements, end of year accounts in Islamic banks: statement of financial position, income statement, statement of change in equity, and cash flow statements.

10411285 FINANCIAL FIQH MAXIMS

This course begins with a look at the concept of the fiqh maxims in terms of their sources, importance and reasons. It then moves to distinguish between the fiqh maxim from the fundamental rule and legislative rule. It also studies the most important fiqh maxims pertinent to fiqh financial transactions and their applications. These maxims are the following: In principle, all transactions are permissible; contracts are to be understood in relation to their intention and substance, not by the words and phrases used; every loan that has drawn profit is riba (usury). One fiqh financial maxims has to do with custom: custom is a source of judicial decisions. Another one has to do with the lifting of harm: Wrong is to be done; legal permissibility cannot be a cause for liability. A third has to do with lifting of embarrassments: public need is as urgent as necessity; revenues go with liability.

10411286 PUBLIC FINANCE IN ISLAM

Topics dealt with in this course include concept of public finance, financial system, revenues and expenditures (spending), the financial policy in Islam: aims, characteristics, bayt al-mal (house of money) the Islamic state's investment and financing budget, and investment and consumption expenditures in the Islamic state.

10411387 ECONOMIC DEVELOPMENT IN ISLAM

This course raises a number of topics: concept of development, foundations of development in Islam and its aims, Islamic value system and its positive role in development, development theories and Islam's attitude towards them, development of financing, development impediments in the Muslim world countries, concept of economic planning, its types and instruments and economic planning from an Islamic perspective.

10411388 WAQF ECONOMIES

This course begins with a fiqh introduction to waqf (endowment), its concept, rules and types. It then moves to survey most important waqf institutions throughout history, impact of waqf on economic life; development, control of poverty, social welfare and security. The course ends with a look at the most important contemporary applications of waqf.

10411389 INTERNATIONAL ECONOMY AND THE MUSLIM WORLD

This course is a study of international economic relations, international monetary theory, international trade theories, trade balance, balance of payments, international economic organizations and their impact on the

Muslim world. The course is also a study of international economic agreements, economic globalization and its impact on the Muslim world, multinational companies and their effect on the Muslim world, international, internal trade in the Muslim world, regional economic Islamic organizations, economic integration in the Muslim world, and movement of labor and capital in the Muslim world. The course ends with a study of the international financial and economic crises from an Islamic perspective.

10411290 HISTORY OF ECONOMIC THOUGHT AND BANKING IN ISLAM

Students in this course are introduced to the development of economics and banks, concept of Islamic economic thought, its source and traits, beginnings of contemporary Islamic banking thought, contemporary Muslim pioneers in economics and banking, models of Islamic economic writings and models of contemporary writings in Islamic banking.

10411491 ISLAMIC BANKING CHALLENGES

This course is primarily concerned with the most serious problems and obstacles facing Islamic banks and the ways of overcoming them with particular emphasis on the Palestinian current state of affairs. The course first will introduce the circumstances which led to the emergence of first Islamic banks and the difficulties they had faced and the fiqh problems: incomplete fiqh theorization and identification of accredited references. The course then moves to clients dealing with the Islamic banks, and the problems pertinent to the employees in these banks. This is in addition to problem of relationship with conventional banks and the central bank. The course concludes with a study of the problems of dividends, investment problems (liquidity, high risk of Islamic banking work, lack of Islamic markets and stock exchanges) benchmark index in Islamic banks, ideological and real wars waged against Islamic banks.

10871259 COMPUTER-BASED FINANCIAL APPLICATIONS

This course is an application of what has been studied theoretically. It will primarily focus on quantitative courses such as financial analysis, investment analysis and management, the value of money, using the computer software programs and Excel in particular.

10871412 FINANCIAL ENTERPRISE MANAGEMENT

This course explores basic issues in management of financial enterprises such as insurance companies, banks, pension funds and investment institutions, namely financial brokerage firms and intermediary companies which are specialized in issuing Initial Public Offerings (IPOs).

10876111 PRINCIPLES OF MARKETING

This course will first introduce students to basic concepts in marketing and then provide them with marketing analysis skills of the marketing environment

elements, necessary to take the appropriate decisions. The course also seeks to train students to acquire marketing mix management skills in accordance with the new approach in management of marketing operations. The course will also provide students with basic knowledge in modern marketing topics such as marketing of non-profit services, physical distribution and customer service

10876224 BANKING MARKETING

This course considers the general principles of marketing banking services/products, analysis of banking, purchasing behavior and its determinants, consumer behavior, marketing environment of banking services, development of banking services and innovation, pricing of banking services, patterns of clients and ways of dealing with them...etc.

Department Staff Members

Instructor	Academic rank	Academic degree County/year of receiving it
Prof. Ayman Al-Dabagh	Assistant Professor	B.A University of Jordan, 1997 M.A University of Jordan, 2000 PhD, University of Jordan,2003
Dr. Jamal Al-Kilani	Assistant Professor	B.A University of Jordan, 1988 B.A University of Jordan, 1991 PhD, Al-Qur'an Al-Kareem University Sudan, 1994
Dr. Mahmoud Irsheid	Assistant Professor	B.A Hebron University, Palestine 1991 M.A Yarmouk University, Jordan 1997
Mr. 'Ala' Ruziyeh	Lecturer	B.A An-Najah National University, Palestine 2005 M.A. Texas Technical University, USA 2010

「 Faculty of Medicine &
「 Health Sciences 「

{ Biomedical Sciences }

Introduction

The Faculty of Medicine and Health Sciences at An-Najah National University has a three-year undergraduate program in biomedical sciences. Students who successfully complete the requirements of this program are eligible to enroll in the Doctor of Medicine program, Doctor of Pharmacy program, or any other program offered by the Faculty of Medicine and Health Sciences.

All of the undergraduate program courses are taught by the Faculty of Medicine and Health Sciences. Students graduate from the program after the completion of 130 credit hours: Of these, 18 are compulsory university requirements, 87 are compulsory biomedical sciences courses, and 25 are elective biomedical sciences courses.

Department vision

Expand knowledge in biomedical sciences and enrich community health services.

Department mission

Contribute to the progress of work in the medical sciences in order to provide the community with health professionals in different medical fields.

Department objectives

- Develop an outstanding educational program in biomedical sciences.
- Establish an exceptional research institute in biomedical sciences.
- Turn out specialized faculty that links applied medical sciences with clinical science.

Graduation requirements

To earn a B. Sc. degree in Biomedical Sciences, students must complete 130 credit hours. These include the completion of university, college, department compulsory and elective courses.

Compulsory university courses	18 credit hrs
Compulsory biomedical sciences courses	87 credit hrs
Elective biomedical sciences courses	25 credit hrs
Total	130

Bachelor of Biomedical Sciences

Requirements for Graduation

Compulsory University Courses: 18 credit hours

Course #	Course	(CH)	Prerequisite courses
100103	University English I	3	
100127	Introduction to Computer Science	1	
100324	University English II	3	
100101	Islamic Culture	3	
100102	Arabic Language	3	
100105	Palestinian Studies	3	
100117	Leadership and Communication Skills	1	
100108	Community Service	1	

Compulsory Biomedical Sciences Courses: 87 credit hours

Course #	Course	(CH)	Prerequisite courses
10231114	General Chemistry for Health Sciences + Lab	3	
10231115		1	
10231236	Organic Chemistry I for Health Sciences + Lab	3	General Chemistry for Health Sciences + Lab 10231114; 10231115
10231239		1	
7108101	Biophysics	3	
10211235	Biostatistics for Medical and Health Sciences	3	
7105307	Lab Methods	3	Principles of and Metabolic Biochemistry + Lab 7104210; 7104211+ Molecular Biochemistry + Lab 7104212; 7104213 + General Microbiology + Lab 7105403; 7105404 + Medical Microbiology 7105302 + Immunology 7105306
7101102	Anatomy Thorax Abdomen Pelvis	3	Introduction to Anatomy 7101101
7101101	Introduction to Anatomy	2	
7102201	Medical Physiology I	4	
7102202	Medical Physiology II	4	Medical Physiology I 7102201
7301301	Pharmacology I	4	
7301302	Pharmacology II	4	Pharmacology I 7301301
7103101	Histology I	2	
7103102	Histology II	2	Histology I 7103101
7103301	Pathology I	5	
7103302	Pathology II	5	Pathology I 7103301
7104101	General Biology for Health Sciences	3	
7104214	Human Genetics	2	Cell Biology 7104102
7104210	Principles of and Metabolic Biochemistry + Lab	3	Organic Chemistry I for Health Sciences + Lab 10231236; 10231239
7104211		1	
7104212	Molecular Biochemistry + Lab	2	Principles of and Metabolic Biochemistry + Lab 7104210; 7104211
7104213		1	
7105403	General Microbiology + Lab	3	
7105404		1	
7105302	Medical Microbiology	4	General Microbiology + Lab 7105403; 7105404
7105306	Immunology	3	General Microbiology + Lab 7105403; 7105404
7106201	Public Health and Epidemiology	3	
7227102	First Aid	1	
7106301	Nutrition	2	
7227201	Behavioural Sciences	3	
7102303	Clinical Psychology	3	

Elective Biomedical Sciences Courses: 25 credit hours

Course #	Course	(CH)	Prerequisite courses
7101201	Anatomy: Limbs & Back	3	Introduction to Anatomy 7101101
7101202	Anatomy: Head & Neck	2	Introduction to Anatomy 7101101
7220301	Science & Art of Clinical Medicine	4 (128 hrs clinical activity); 2 sessions	
7101203	Neuroanatomy	3	
7102301	Neurophysiology	3	Neuroanatomy 7101203
7227208	History of Medicine and Pharmacy	1	
7000401	Research Methods in Medical Sciences	2	
7103412 7103413	Clinical Chemistry + Lab	3 1	Principles of and Metabolic Biochemistry + Lab 7104210; 7104211+ Molecular Biochemistry + Lab7104212; 7104213
7103318 7103319	Haematology + Lab	3 1	Cell Biology 7104102
7103322 7103323	Immunohaematology & Blood Banking + Lab	1 1	Haematology + Lab 7103318; 7103319
7004010 7004011	Analytical Chemistry + Lab for Health Sciences	3 1	General Chemistry for Health Sciences + Lab 10231114; 10231115
7004003	Organic Chemistry II for Health Sciences	3	Organic Chemistry I for Health Sciences + Lab10231236; 10231239
7227206	Pharmacy Ethics and Professionalism	1	
7106401	Data Analysis for Health Sciences	2	
7004006	Mathematics for Health Sciences	3	
7227202	Medical Ethics	1	
7227207	History of Optometry	1	
7104102	Cell Biology	2	General Biology for Health Sciences 7104101
7101205	Embryology	3	
7101301	Anatomy of the Eye and Ocular Structures	2	Introduction to Anatomy 7101101
7102302	Physiology of the Eye & Ocular Structures	2	
7302301	Communication Skills	1	
7303301	Medicinal Chemistry I	4	
7303302	Medicinal Chemistry II	4	Medicinal Chemistry I 7303301
7303303	Instrumental Analysis	4	
7405402	Women's Health Issues	2	
7106402	Environmental Toxicology	2	
7301407	Clinical Use of Antibiotics	3	
7303406	Physiotherapy	2	
7103212 7103213	Body Fluids in Health and Disease + Lab	3 1	General Microbiology + Lab 7105403; 7105404+ Principles of and Metabolic Biochemistry + Lab 7104210; 7104211
7103303	Endocrinology Fundamentals	3	Histology I 7103101+ Clinical Chemistry + Lab7103412; 7103413
7103320 7103321	Coagulation and Homeostasis + Lab	1 1	
7105312 7105313	Diagnostic Bacteriology + Lab	3 1	General Microbiology + Lab 7105403; 7105404
7105314 7105315	Parasitology + Lab	3 1	General Microbiology + Lab 7105403; 7105404
7105326	Virology	2	General Microbiology + Lab 7105403; 7105404
7105320 7105321	Medical Mycology + Lab	2 1	General Microbiology + Lab 7105403; 7105404
7229301	Optics of the Eye	2	
7229302	Geometric & Physiological Optics	4	

{ Nursing }

Introduction

The Department of Nursing at An-Najah National University offers an undergraduate program leading to a Bachelor of Science in nursing. This program prepares professional nurses who can work with a multidisciplinary health team in order to meet the client's health needs and to upgrade the quality of health care in various health settings.

Department Mission

Educate and develop students to equip them for a rapidly changing and innovative field. The Bachelor of Science program prepares highly competent, qualified, and caring nurses who meet the health care needs, prepare individuals for entry level professional practice and provide a foundation for leadership roles and graduate studies. The nursing program is committed to turning out nurses who are grounded in theory and research, and who are responsive to the health care needs and expectations of individuals, families, the community, and the profession.

The Bachelor of Science in Nursing prepares students to think critically, make decisions and function effectively in their interpersonal and team surroundings. The general education courses in the humanities and in the social and biological sciences provide a strong foundation for the nursing theory and clinical/experiential courses. Nursing graduates are prepared to understand and respond to the vast and changing healthcare needs of individuals and communities in this society.

Department Vision

The Palestine of the 21st century is going through intense social and political processes with immediate health-related ramifications: The political situation has introduced new healthcare needs and challenges and has accelerated the aging of the country's population; the unstable economy is affecting healthcare provision and budgets; political and security turmoil are taking their toll on the physical and mental welfare of individuals and entire communities. These processes are also affecting healthcare institutions, as well as nurses and their patients.

The Department of Nursing is committed to promoting nurse professionalism in Palestine. A highly qualified nurse, who can provide a comprehensive response to clinical, technological, managerial and psychological challenges of care, is the graduate the department aspires to educate.

Our Mission

- Offer a model for excellence and leadership in nursing through innovative curricula, cutting-edge teaching methods and community involvement.
- Develop cutting-edge, high-impact knowledge, methods and faculty expertise.
- Educate and develop students to equip them for a rapidly changing, creative, global, technology-enabled and, increasingly, technology-driven business environment
- Provide every student with a memorable, life-transforming experience by dedication to the highest academic standards, the highest standards of educational delivery, and relentless pursuit of operational excellence.

Objectives of Applied Nursing Science

- Prepare nurses to practice safely, competently and effectively.
- Turn out nurses who are flexible and adaptable in their approach to working with patients and their families during illness.
- Prepare qualified professional nurses to meet the needs of the local communities.
- Raise the standards of healthcare conditions, both in sickness and in health, by preparing independent and qualified nurses who are able to function competently at the preventive and curative levels.
- Critique concepts (such as evidence-based practice, health promotion, humanities, information technology, life sciences, professional issues, psychology, social policy and sociology) which contribute to nursing knowledge and evaluate their relevance to practice.
- Understand different methodological approaches to research and appreciate the contribution that research makes to the development of nursing knowledge.
- Analyse theories of innovation, change and decision making in order to analyse the changing structure of healthcare and the role of nursing within a multi-disciplinary environment.
- Utilize the principles of praxis to develop practice.
- Integrate the academic disciplines that contribute to nursing and use them to analyse specific aspects of practice.
- Analyse theoretical developments in nursing and critically evaluate their relevance to practice.
- Evaluate the usefulness of evidence selected from various contemporary sources in the development of nursing practice.
- Articulate strategies for developing evidence-based practice.
- Use various methods, including information technology, to collect and analyse evidence from a wide range of sources
- Demonstrate an ability to synthesise information in order to analyse clinical problems
- Analyse principles of communication theory for presenting information to the users and providers of healthcare.

- Provide a broad general education, an excellent grounding in the business disciplines and sufficient development in the major or concentration to ensure that students can make competitive contributions to health institutions or ventures upon graduation.
- Ensure that all graduates are capable as well as knowledgeable and prepared to develop and assume greater responsibility throughout their careers.
- Encourage and develop intellectual curiosity, analytical and research capability, sound management decision-making processes, and the ability to plan, organize and control activities to achieve goals.
- Improve the knowledge about human health, especially through education, research and public service.
- Assist individual students in obtaining the education and training required to enter and advance within the nursing profession.

Intended Learning Outcomes:

To obtain a B. Sc. in Nursing, the student should have:

- Acquired the knowledge and skills required to be able to work independently as a nurse in a general healthcare environment.
- Acquired knowledge in general and specific nursing.
- Developed self-knowledge and the power of insight, and through an ethical approach and a holistic picture of man, thereby developed the ability to have good relationships with patients and their families.
- Acquired knowledge about conditions in society that affect the health of men and women and an ability to initiate and participate in health promotion and preventive care.
- Acquired knowledge concerning the economics and organisation of healthcare that is of importance to healthcare.
- Acquired knowledge concerning the planning, leadership and co-ordination of care, and developed a professional approach as preparation for teamwork and collaboration among all personnel groups.
- Acquired the ability to instruct patients and their families and to supervise care staff.
- Provide competent, safe care autonomously for the patients & their families.
- Recognize the individuality of each patient and his/her family and foster the development of decision-making throughout the caregiving process.
- Promote lifestyle practices that enhance the health and well-being of the patients and their families.
- Demonstrate informed decision-making skills & the ability to make informed differential diagnosis.

Requirements for Admission to the Midwifery Program

- A minimum of 75% or above in Tawjihi (General Secondary School Certificate).
- Completion of secondary scientific education.
- Satisfactory performance in an interview evaluating his/her background and suitability for a nursing speciality.
- Good command of English.

Curriculum Plan

A student must successfully complete a total of 133 credits, distributed as follows:

Category	Credit hours
University Requirements (compulsory)	18
Department Requirements (compulsory)	82
Sciences & Basic Sciences Requirements	33
Total	133

University Requirements (20 credit hours)

Course No.	Course Name	Credit hours	Prerequisites
10101	Islamic Culture	3	-
10102	Arabic Language	3	-
10103	University English I	3	-
10324	English for Medical Colleges	3	-
10105	Palestinian Studies	3	-
10117	Communication and Leadership Skills	1	-
10108	Community Service	1	-
	Introduction to Computer Science	1	
Total		18	

Adult Health Nursing & Fundamentals of Nursing Division

Course No.	Course Name	C.H.	Prerequisites
7401123	Fundamentals of Nursing I	3	
7401115	Lab Fundamentals of Nursing I	2	
7401124	Fundamentals of Nursing II	2	7401123, 7401115
7401116	Lab Fundamentals of Nursing II	1	
7401104	Fundamentals of Nursing II\Clinical	3	7401102, 7401103
7401202	Adult Health Nursing I	3	7401124
7401203	Adult Health Nursing I – Clinical	3	7401202, 7401203
74011204	Adult Health Nursing II	3	7401202, 7401203
7401205	Adult Health Nursing II – Clinical	3	74011204
7401301	Critical Care Nursing	3	74011204, 7401205
7401120	Critical Care Nursing – Clinical	4	7401301
7401125	Health Assessment	2	
7401121	Lab. Health Assessment	1	7401125
7401401	Intensive Clinical Nursing	6	7402406, 7402407
7227203	Nursing Ethics And Professionalism Aspects	1	
7401122	Introduction to Nursing	2	
7402407	Administration and Management to Nursing	2	
7402406	Administration and Management to Nursing – Clinical	2	
7402409	English for Nursing	2	
7401402	Comprehensive Exam for Nursing	0	7401401
	Total	48	

Public Health Division

Course No.	Course Name	C.H.	Prerequisites
7402401	Community Health Nursing	2	
7402402	Community Health Nursing - Clinical	2	740401
7404301	Mental Health Nursing	3	7227201
7404302	Mental Health Nursing – Clinical	3	7404301
7402202	Communication and Health Education	2	
7106201	Public Health and Epidemiology	3	
	Total	15	

Pediatric Nursing Division

Course No.	Course Name	C.H.	Prerequisites
7403301	Children and Adolescents Health Nursing	3	74011204
7403302	Children and Adolescents Health Nursing - Clinical	3	7403301
	Total	6	

Maternity and Midwifery Division

Course No.	Course Name	C.H.	Prerequisites
7403301	Children and Adolescents Health Nursing	3	74011204
7403302	Children and Adolescents Health Nursing - Clinical	3	7403301
	Total	6	

Basic sciences Division

Course No.	Course Name	C.H.	Prerequisites
7105403	Microbiology General	3	
7105404	Lab. Microbiology General	1	7105403
7102101	Anatomy & Physiology for Health Sciences I	3	
7102102	Anatomy & Physiology for Health Sciences II	3	7102101
7103201	Pathology and Pathophysiology for Health Sciences	3	
7104101	General Biology for Health Sciences	3	
7301201	Pharmacology for Health Sciences	3	
7106301	Nutrition	2	
7227201	Behavioural Sciences	3	
7104204	Biochemistry & Chemistry for Nursing	3	
7227102	First Aid	1	
10211235	Biostatistics for Health Sciences	3	
7227402	Forensic Sciences for Health Sciences	3	
	Total	34	

Deanship Division

Course No.	Course Name	C.H.	Prerequisites
7000408	Research Methods for Biomedical Sciences	3	7106101
7000402	Nursing Project	3	7000408
	Total	6	

{ Midwifery }

Introduction

This is a four-year undergraduate program leading to a B. Sc. degree in midwifery. This program prepares professional midwives who can work with a multidisciplinary health team in order to meet the client's health needs and to upgrade the quality of healthcare in various health settings. To give professional midwifery care in all stages of life, midwives need to have a humanistic approach and practical clinical knowledge combined with a good theoretical background.

Intended Learning Outcomes

Each student is expected to be able to do the following upon graduation:

- Utilize theories from midwifery sciences and arts to develop a comprehensive and holistic approach to midwifery care.
- Critique and apply research findings to provide quality healthcare, initiate change, and improve midwifery practice.
- Utilize theories and principles of healthcare policy, organization and finance to manage fiscal, human, and physical resources.
- Critically and accurately assess, plan, intervene, and evaluate health experiences (including wellness and illness) of individuals, families, and communities.
- Apply knowledge of cultural diversity and global perspectives in delivering midwifery healthcare.
- 6. Utilize legal and ethical principles to guide decision-making in an advanced midwifery practice role.
- Utilize communication and interpersonal skills to facilitate collaborative relationships with clients, their families and the healthcare team.
- Develop an ethical framework to guide one's advanced midwifery role and foster one's leadership and continued growth within the midwifery profession.
- Develop a competent, caring midwife who is able to provide flexible, patient-centred care in a variety of settings.
- Develop critical thinking.
- Develop a practitioner who is able to utilize relevant research to inform practice.
- Develop an accountable practitioner.
- Provide primary healthcare to healthy women from adolescence through post-menopause.
- Manage the care of essentially healthy women during pregnancy, labor and birth, and the postpartum period.
- Monitor fetal growth and well-being during the prenatal and intrapartum periods
- Assess the neonate's adaptation to extrauterine life, and initiate resuscitative measures when appropriate.
- Perform comprehensive neonatal assessment, facilitate the newborn's integration into the family, and provide guidance related to infant care.

- Manage collaboratively the care of women with selected obstetrical, gynecologic and/or medical complications (i.e., high risk pregnancy) and make appropriate referrals.
- Provide emergency care as needed.
- Apply leadership, management and teaching/learning theories to effect change within the healthcare delivery system for the betterment of patient service.
- Practice safely, competently and effectively.
- Be flexible and adaptable in their approach to work with the mother, the child & their families.
- Become qualified professional midwives so as to meet the needs of the local communities.
- Raise the standards of maternal and child healthcare by preparing independent, qualified midwives who are able to function competently at the preventive and curative care levels.

Midwifery Program Mission

This program is designed to prepare independent, qualified professional midwives who are empowered enough to meet the needs and demands of the Palestinian society; and it is also designed to educate and develop students so that they are equipped for a rapidly changing, creative, technology-enabled and technology-driven business environment.

Midwifery Program Vision

- Offer a model for excellence and leadership in nurse midwifery through innovative curricula, cutting-edge teaching methods and community involvement.
- Develop cutting-edge, high-impact knowledge, methods and faculty expertise.
- Educate and develop students to equip them for a rapidly changing, creative, global, technology-enabled and, increasingly, technology-driven business environment.
- Provide every student with a memorable, life-transforming experience through dedication to the highest academic standards, the highest standards of educational delivery, and relentless pursuit of operational excellence.

Study Plan

A student must successfully complete a total of 143 credit hours, distributed as follows:

Category	Credit hours
University requirements (compulsory)	18
Nursing courses (compulsory)	31
Midwifery courses (compulsory)	57
Sciences & Basic Sciences (compulsory)	37
Total	142

University Requirements: 20 Credit Hours

Course No.	Course Title	C.H.	Pre-requisites
10101	Islamic Culture	3	-
10102	Arabic Language	3	-
10103	University English I	3	-
10324	English for Medical Colleges	3	-
10105	Palestinian Studies	3	-
10117	Communication and Leadership Skills	1	-
10108	Community Service	1	-
	Introduction to Computer Science	1	
Total		18	

Requirements for Admission to the Midwifery Program

- A minimum of 75% or above in Tawjihi (General Secondary School Education Certificate).
- Completion of secondary school scientific education.
- Satisfactory performance in a personal, face-to-face interview, evaluating his/her background and suitability for a midwifery major.
- Good command of English.

Adult Health Nursing & Fundamentals of Nursing Division

Course No.	Course Title	C.H.	Prerequisite
7401123	Fundamentals of Nursing I	3	
7401115	Lab Fundamentals of Nursing II	2	
7401124	Fundamentals of Nursing II	2	7401102
7401116	Lab Fundamentals of Nursing II	1	
7401104	Fundamentals of Nursing II - Clinical	3	7401102
7405201	Adult Health Nursing for Midwives	4	7401103
7405202	Adult Health Nursing for Midwives - Clinical	2	
7401125	Health Assessment	2	
7401121	Lab. Health Assessment	1	
7402407	Administration and Management to Nursing	2	
7402406	Administration and Management to Nursing - Clinical	2	7402407
7402409	English for Nursing	2	
	Total	26	

Public Health Division

Course No.	Course Title	C.H.	Prerequisite
7402403	Community Midwifery	2	
7402404	Community Midwifery - Clinical	1	7402403
7404303	Mental Health in Midwifery	2	7227201
7402202	Communication and Health Education	2	
7106201	Public Health and Epidemiology	3	
	Total	10	

Pediatric Nursing Division

Course No.	Course Title	C.H.	Prerequisite
7403306	Children and Adolescents Health Nursing	3	
7403302	Children and Adolescents Health Nursing - Clinical	3	7403306
7403303	Neonatology	2	
7403307	Neonatology - Clinical	1	7403303
	Total	9	

Deanship Division

Course No.	Course Title	C.H.	Prerequisite
7000301	Introduction to Nursing Research	3	7106101
7000403	Midwifery Project	3	7000301
	Total	6	
	Total	124	

Maternity and Midwifery Division

Course No.	Course Title	C.H.	Prerequisite
7405203	Midwifery I	3	
7405203	Midwifery I - Clinical	3	7405203
7405301	Midwifery II	3	
7405302	Midwifery II - Clinical	4	7405301
7405409	Midwifery III and Family Planning	3	
7405410	Midwifery III and Family Planning - Clinical	2	7405409
7405405	Advance Midwifery	5	
7405406	Advance Midwifery - Clinical	4	7405405
7405307	Gynaecology	2	
7405308	Gynaecology - Clinical	1	7405307
7405407	Intensive Clinical for Midwifery	6	7402407
7227203	Midwifery Ethics and Professionalism	1	
7405411	Introduction to Midwifery	1	
7405402	Women Health Issues	2	
7405408	Comprehensive Exam for Midwifery	0	7405408
	Total	40	

Basic Sciences Division

Course No.	Course Title	C.H.	Prerequisite
7105403	Microbiology General	3	
7105404	Lab. Microbiology General	1	
7102101	Anatomy and Physiology for Health Sciences I	3	
7102102	Anatomy and Physiology for Health Sciences	3	7102101
7103201	Pathology and Pathophysiology for Health Sciences	3	
7301201	Pharmacology for Health Sciences	3	
7106301	Nutrition	2	
7227201	Behavioural Sciences	3	
7104101	General Biology for Health Sciences	3	
7104204	Biochemistry and Chemistry for Nursing	3	
7227102	First Aid	0	
10211235	Biostatistics for Health Sciences	3	
7227402	Forensic Sciences for Health Sciences	3	
	Total	30	

{ Medical Laboratory Sciences }

Department Vision

Creation of knowledge and advanced learning that enrich individual, local, national, and global communities' health.

Department Mission

Contributing to the advancement of medical applications, laboratory and research and stimulating learning and development in the field of laboratory medicine in order to provide the Palestinian society with elite laboratory technicians to achieve an advanced level in the field of medicine laboratory and keep abreast of scientific development in the areas of health, and the inclusion of technical and applied research in the field of medical tests.

Department Objectives

1. To create laboratory technicians who can keep abreast of scientific developments in medical laboratory sciences.
2. To turn out qualified scientific and practical laboratory technicians who are able to deal with advanced and modern laboratory devices and techniques.
3. To promote scientific research in the field of medical laboratory.

Requirement for Admission to the Medical Laboratory Sciences Undergraduate Program:

A minimum of 85 % or above in the General Secondary School Education Certificate (Tawjihi).

Graduation Requirements

To earn a B. Sc. degree in Medical Laboratory Sciences, a student must complete 130 credit hours. These include the completion of university, college, and department compulsory and elective courses.

University Compulsory Courses	18 credit hrs
Department General and Biomedical Sciences Courses	29 credit hrs
Department Compulsory Courses	75 credit hrs
Department Elective Courses	8 credit hrs
Total Credit Hours	130

Curriculum for B. Sc. Degree in Medical Laboratory Sciences

University Compulsory Courses: 18 Credit Hours

Course No.	Course Title	Credit hours	Prerequisite course
100127	Computer Sciences	1	
100101	Islamic Culture	3	
100102	Arabic Language	3	
100103	University English I	3	
100105	Palestinian Studies	3	
100108	Community Service	1	
100117	Leadership and Communication Skills	1	
100324	University English II	3	100103

Department General and Biomedical Sciences Courses: 29 Credit Hours

Course No.	Course Title	C.H	Prerequisite course
10231114	General Chemistry for Health Sciences	3	
10231115	General Chemistry for Health Sciences (Lab)	1	10231114 or concurrently
7104101	General Biology for Health Sciences	3	
10211235	Biostatistics for Medical and Health Students	3	
7106201	Public Health and Epidemiology	3	
7227101	First Aid	1	
10231236	Organic Chemistry I for Health Sciences	3	10231114 + 10231115 or concurrently
10231239	Organic Chemistry I for Health Sciences (Lab)	1	10231236 or concurrently
10231213	Analytical Chemistry for Health Sciences	3	10231114 + 10231115 or concurrently
10231214	Analytical Chemistry for Health Sciences (Lab)	1	10231213 or concurrently
7108101	Biophysics	3	
7104102	Cell Biology	2	7104101 or concurrently
7101103	Medical Terminology	2	

Department Compulsory Courses: 75 Credit Hours

Course No.	Course Title	C.H	Prerequisite course
7227205	Lab Medicine Professional Ethics	1	
7102101	Anatomy & Physiology for Health Sciences I	3	7104102 or concurrently
7102102	Anatomy & Physiology for Health Sciences II	3	I 710 2101 or concurrently
7103201	Pathology & Pathophysiology for Health Sciences	3	I 7103101 or concurrently
7105403	General Microbiology	3	7104102 or concurrently
7105404	General Microbiology (Lab)	1	7105403 or concurrently
7103101	Histology 1	2	7104102 or concurrently
7104210	Biochemistry Principles and Metabolics	3	10231236+10231239 or concurrently
7104211	Biochemistry Principles and Metabolics (Lab)	1	7104210 or concurrently
7104212	Molecular Biochemistry	2	7104210 or concurrently
7104213	Molecular Biochemistry (Lab)	1	7104212 or concurrently
7104214	Human Genetics	2	7104102 or concurrently
7104215	Genetics (Lab)	1	7104214 or concurrently
7105306	Immunology	3	7105403+7105404 or concurrently
7000408	Research Methods for Biomedical Sciences	3	
7103210	Serology	1	7105306 or concurrently
7103211	Serology (Lab)	1	7105210 or concurrently
7103212	Body Fluids in Health and Disease	3	7105403+7105404 & or concurrently 7104210+7104211 or concurrently

7103213	Body Fluids in Health and Disease (Lab)	1	7103212 Or concurrently
7103214	Microtechnique LM	1	7104102 or concurrently
7103215	Microtechnique LM (Lab)	1	7103214 or concurrently
7103216	Instrumentation & Identification	1	10231213+10231214& 7103412+7103413 or concurrently
7103217	Instrumentation & Identification (Lab)	1	7103216 or concurrently
7103320	Coagulation and Homeostasis	1	7103318+7103319 or concurrently
7103321	Coagulation and Homeostasis (Lab)	1	7103320 or concurrently
7103318	Hematology	3	7104102 Or concurrently
7103319	Hematology (Lab)	1	7103318 or concurrently
7103322	Immunohematology & Blood Banking	1	7103318+7103319 or concurrent
7103323	Immunohematology & Blood Banking (Lab)	1	7103322 or concurrently
7103410	Laboratory Management & Quality Control	1	
7103403	Practical training	6	
7103412	Clinical Chemistry	3	7104210+7104211
7103413	Clinical Chemistry (Lab)	1	7103412 or concurrently
7103407	Project	1	7000408
7105312	Diagnostic Bacteriology	3	7105403+7105404 or concurrently
7105313	Diagnostic Bacteriology (Lab)	1	7105312
7105314	Parasitology	3	7104102 or concurrently
7105315	Parasitology (Lab)	1	7105314
7105326	Virology	2	7105403+7105404 or concurrently
7227402	Forensic Science for Health Sciences	3	

Department Electives: 8 Credit Hours

Course No.	Course Title	C.H	Prerequisite course
7106401	Data Analysis for Health Sciences	2	
10231330	Organic Chemistry II for Health Sciences	3	10231236+10231239 or concurrently
7004006	Mathematics for Health Sciences	3	
7004007	Principles of Accounting	2	
7101205	Embryology	3	
7402202	Communication and Health Education	2	
7405402	Women Health Issues	2	
7103404	Special Topics E LM	3	
7105418	Food Microbiology	2	7105403+7105404 or concurrently
7105419	Food Microbiology Lab	1	7105418 or concurrently
7106402	Environmental Toxicology	2	
7103303	Endocrinology Fundamentals	3	7103101 & 7103412+7103413 or concurrently
7105320	Medical Mycology	2	7105403+7105404 or concurrently
7105321	Medical Mycology Lab	1	7105320
7109301	Pharmacology for Health Sciences	3	

{ Optometry }

Background

The Faculty of Medicine and Health Sciences at An-Najah National University added the Department of Optometry to its existing departments in 2011. Today, the Department of Optometry has a total of 89 students and 5 faculty members, all experts in the field of optometry. The department is committed to educating and training future optometrists who can provide high quality vision care and services to the Palestinian citizens.

Since its creation in 2004, the Department of Optometry has been expanding horizontally and vertically in terms of teaching facilities and clinical services. An-Najah's Teaching Optometry Clinic, a primary care facility, opened its doors in 2013 to provide primary eye care services to more than 20,000 students, staff and faculty members attending An-Najah National University. Student clinicians, under the supervision of licensed optometrists and ophthalmologists, use state-of-the art equipment and examination procedures to manage and treat a variety of visual anomalies and ocular disease conditions. The opening of a primary, secondary and tertiary eye clinic at An-Najah National University Teaching Hospital in the fall of 2013 will provide an additional resource to clinical education, where students will be providing quality care to the Palestinian population centers of Nablus and neighbouring cities.

An-Najah's Department of Optometry is the only program in Palestine offering the B. Sc. in Optometry, and the only program in the Middle East to be enlisted as a member of the World Council of Optometry. At the Department of Optometry, we take pride in our commitment to providing well-rounded education through a substantial and rigorous course education, broad clinical science knowledge and extensive patient care experiences.

The new undergraduate program at An-Najah National University strives to be the first program to respond to the expanded scope of optometric practice in the Middle East. Broad-based clinical exposure and patient care experiences will be supplemented with a rigorous didactic curriculum designed to prepare optometric professionals to be part of a continually evolving and dynamic profession. The program envisions a pool of professional practitioners who have become leaders in their fields, serving as vision consultants in their communities and as catalysts for changing policies, programs and practices that will benefit the profession.

Department vision

The Department of Optometry seeks to be the leading department in the region. Our vision is:

- To be recognized locally, nationally and internationally for excellence and innovation in education, research and patient care.
- To achieve a lasting impact on visual health within the region by continuously improving models of care delivery and providing academic progression to the

science of optometry.

- To develop an innovative educational program, with an effective and dynamic curriculum.
- To redesign the eye care system in the country by facilitating the delivery of high quality care.
- To play a vital role in building human resources and infrastructure in the region by producing future leaders in optometry dedicated to lifelong learning and innovative research.

Department Mission

The mission of An-Najah's undergraduate Optometry Program is to build a foundation in which faculty, students, and staffs work together within a mutual respectful environment to share knowledge and experience in ways that will best serve the optometric needs of the community. The program is committed to prepare optometrists who would deliver clinical care of the highest standard with utmost integrity and professionalism.

Department Goals and Objectives

The goal of the Optometry Program is to turn out future professional leaders with the highest level of optometric practice dedicated to eliminating preventable blindness in Palestine. Graduates will serve as leaders in clinical and executive positions, translating evidence-based science into clinical practice and quality-improvement policies that ultimately lead to better vision care.

The Department of Optometry, including its new Eye Clinic at An-Najah National University Teaching Hospital, is committed to fulfilling its mission and vision to the community through the achievement of these goals and objectives:

- Establish a resounding optometric program that will enable the department to become a leader in optometric education in the Middle East.
- Provide outstanding educational programs and resources.
- Develop an outstanding clinical education by enhancing clinical services at the University's Teaching Hospital and Teaching Clinics.
- Promote safe, efficient and quality vision care delivery across the country.
- Establish the department as an exceptional research institute in optometry, vision science and clinical practice.
- Develop community capacity building.
- Unify the practice of optometry locally and across the region by adjusting the scope of practice and ensuring it meets international standards.

Program Description

The undergraduate Optometry Program offered at An-Najah National University is a three-year program and is designed to educate future optometrists and to prepare them

to be part of a continually-changing and dynamic profession. The primary goal is to educate future optometric professionals who seek and critically analyze new information to effectively serve the patients. Students joining this program will gain the knowledge and experience needed to serve as vision consultants to schools, government, business, and industry. Additionally, the program is designed for students to acquire an understanding of the legal, social, economic, and professional implications of optometric practice, as well as the role of the optometrist in public health and in community and national health care.

Students must successfully complete a three-year accredited degree program to earn a B. Sc. degree. Upon admission into the program, students will complete 36 credit hours of Biomedical Health Science requirements, and 76 credit hours of department requirements over a period of 3 years (including summer sessions). Table 2 below provides a breakdown of the credit hours taken over the course of 3 years.

Courses	Credit Hours
University Requirements	18
Biomedical Health Science Requirements	36
Department Requirements	76
Total Credit Hours	130

Table 2: Total credit hours taken over a 3-year period by students graduating with B. Sc. degree

During the three years, students will be expected to complete 18 credit hours of lab work, equal to 864 contact hours, which will be taken in conjunction with theoretical course material. In addition, students will complete a total of 18 hours of clinical rotations, equal to 864 of direct contact hours, where they will be exposed to direct patient encounters within campus and its affiliated clinics. The practical hours for students will count for approximately 53.5% of their total program hours. The curriculum includes clinical rotations at the University’s clinics in primary eye care, binocular vision, low vision, contact lens, pediatric and ocular disease services. The externship program provides extensive training and hand-on exposure to a variety of practice settings including hospitals, optometric sites, and community clinics. Clinical externships are also available in Jordan and other neighboring countries. Table 3 provides a breakdown of the course credit hours, lab credit hours and clinical rotation hours that students will be expected to complete by the end of their third year. The Department of Optometry has formulated a 3-year study plan to give students a snap shot of program. Appendix 1 and Appendix 2 include course outlines for the 3-year undergraduate program. Appendix 3 provides a detailed description of the material covered in each course over the 3-year period. Appendix 4 includes a detailed description of each course, the credits hours and contact hours assigned.

Credit Hours	Total Hours		Contact Hours
Course Hours	94		1504
Practical Hours	Lab Hours	18	864
	Clinical Rotation Hours	18	864
	Total Practical Hours	36	1728

Table 3: Total course, lab and clinical rotation credit hours taken over a 3-year period by students graduating with a B. Sc. degree. For every lab and clinical rotation hour, the student will be exposed to three actual practical hours, over 16 weeks per semester. In total, students will complete 1,728 hours of practical work.

Undergraduate Optometry Courses

University Requirements: 18 Credit Hours

Course #	Course Title	(CH)	Prerequisite course
10100	Introduction to Computer Science	1	
10101	Islamic Culture	3	
10102	Arabic Language	3	
10103	University English I	3	
10324	University English II	3	10103
10105	Palestinian Studies	3	
10108	Community Service	1	
10117	Leadership and Communication Skills	1	

General and Biomedical Sciences Requirements: 36 Credit Hours

Course #	Course Title	(CH)	Prerequisite course
7227292	Medical Ethics	1	
10231114	General Chemistry For Health Sciences	3	
7108101	Biophysics	3	
7000408	Research Methods in Biomedical Sciences	3	10211235
7102101	Anatomy & Physiology for Health Sciences I	3	7104101
7102102	Anatomy & Physiology for Health Sciences II	3	7102101
7103201	Pathology & Pathophysiology for Health Sciences	3	7104101
7104101	General Biology for Health Sciences	3	
7104210	Biochemistry Principles & Metabolic	3	10231114 & 10231115
7105403	General Microbiology	3	7104101
7105404	General Microbiology Lab.	1	7105403
10211235	Biostatistics for Medical and Health Sciences	3	
7227102	First Aid	1	
7109301	Pharmacology for Health Sciences	3	

Department Requirements: 76 Credit Hours

Course #	Course Title	(CH)	Prerequisite course
7107203	Ocular Pharmacology	1	7109301
7102203	Anatomy & Physiology of the Eye	2	7102101 & 7102102
7106202	Public Health & Epidemiology for Optometry	3	
7000307	Optometric Research Project	3	7104210 & 10211235
7109102	Geometric & Physical Optics	4	10221104
7109101	Introduction to Optometric Practice	1	
7109201	Physiological & Visual Optics	2	10221104 & 7109102
7109204	Primary Optometric Care I	3	10221104 & 7102102
7109202	Visual Perception	3	10221104 & 7109102
7109203	Optometric Practice Management	1	
7109206	Primary Optometric Care II	3	7109204
7109205	Ophthalmic Optics	3	10221104; 7109102; 7109201
7109207	Anterior Segment Disease	3	7102203
7109208	Posterior Segment Disease	3	710220; 7109207
7109209	Diagnostic Techniques I	2	
7109210	Environment & Occupational Vision	1	
7109211	Introduction to Clinical Practice	1	7109209; 7109204; 7109206
7109212	Clinical Dispensing I	1	7109205
7109301	Introduction to Contact Lenses	4	7109204; 7109206; 7109205
7109304	Binocular Vision & Motility	3	7109206
7109213	Diagnostic Techniques II	2	7109209
7109305	Pediatric Vision	3	7109204; 7109206
7109302	Pre- & Post-Operative Optometric Management	2	7109207; 7109208
7109303	Grand Rounds I	1	7109211
7109306	Primary Vision Care Clinic I	1	7109209 ; 7109204 ; 7109206; 7109213
7109307	Clinical Dispensing II	1	7109212
7109308	Specialty Contact Lenses Fitting	3	7109301
7109311	Geriatrics & Low Vision	2	7109205; 7109207; 7109208
7109309	Grand Rounds II	1	7109303
7109310	Binocular Vision Anomalies	2	7109304
7109312	Primary Vision Care Clinic II	2	7109306
7109313	Contact Lens Clinic	1	7109301; 7109308
7109316	Optometric Externship	6	7109306; 7109313; 7109314; 7109315
7109315	Low Vision Clinic	1	7109311
7109314	Pediatric & Binocular Vision Clinic	1	7109304 ; 7109310; 7109305

Course Description

10231236 Organic Chemistry 1 for Health Sciences

This course is a systematic study of nomenclature, structure, properties, and reactions of aliphatic compounds. Attention is given to recent developments in the interpretation of structure and reaction mechanisms. The course will address the basic concepts in organic chemistry for students who are planning to study medicine, dentistry, pharmacy or other health professions. The course will concentrate on the hybridization theory, molecular geometry and polarity of the covalent bond. Nomenclature of alkanes, alkyl halides, alkenes, and alkynes as well as their reactivity and mechanism of reactions are included. Stereoisomerism and optical activity will be given special attention since biologically active compounds are often chiral. Oxygen-containing functional groups (alcohols, ethers and epoxides) and alicyclic hydrocarbons will be addressed, too.

10231239 Organic Chemistry 1 for Health Sciences (Lab)

This laboratory course covers a variety of fundamental laboratory techniques applicable to organic chemistry, such as separation, purification and preparation of organic compounds.

7004003 Organic Chemistry 2 for Health Sciences

This course is a study of cyclic, non-aromatic and aromatic compounds and their chemical reactions, types of displacement, reaction mechanisms and analytical methods of different types; the identification of compounds; and binary structure. The course is also a study of functional groups such as acids and their derivatives, heterocyclic compounds, amines, carboxylic acid reactions; phenols, alkenes and reaction mechanisms of the aforementioned

7108101 Biophysics

This course will introduce students to the concepts of stability and equilibrium of body motion, elasticity impulsive force and bone fractures, fluid mechanics and their medical applications, waves and their properties, sound and ultrasound techniques, electromagnetism and its medical applications, the electromagnetic spectrum, medical X-rays and laser, nuclear physics, radiation physics and applications.

7004006 Mathematics for Health Sciences

This course is designed for students of health sciences so that they can master skills of basic math, the use of measurement systems, and strategies of problem solving needed in health science courses. The course also covers fractional equations and formulas; ratios, proportions, and inverse variations; percents; the metric system of measurement; apothecary and household systems of measurement; calculations needed to determine dosages; construction and reading of graphs; and an introduction to statistics, including measures of central tendency and measures of dispersion.

7004007 Principles of Accounting (elective)

The goal of this course is to acquaint students with the basic principles and concepts which represent the framework of accounting. The course will specifically discuss the meaning of 'accounting,' its historical development, its importance in taking economic decisions and its basic theories on which financial principles and procedures and final financial operations are based. All this is for the purpose of serving the management of the company and for other parties involved in making economic decisions related to the company. This is based on the assumption of the accuracy and the validity of financial operations during the year.

10231114 General Chemistry for Health Sciences

This is lecture course that introduces students to basic concepts of chemistry. Atomic and molecular structures are covered with periodic table, chemical bonds, and stoichiometry. Aqueous solutions, gas laws and other topics are also covered.

10231115 General Chemistry for Health Sciences (Lab)

In this lab, a set of experiments are conducted and involve acid radical characterizations; gas laws; the stoichiometry empirical formula and other topics related to general chemistry.

7004010 Analytical Chemistry for Health Sciences

This course covers some basic concepts in chemical analysis and their application to the pharmaceutical field. The course also covers gravimetric and titrimetric methods of analysis; theory of neutralization; titrations; precipitation titrimetrics; complex-formation titrations; theory of molecular absorption spectroscopy; analytical separation by solvent extraction and an introduction to chromatographic methods. The course ends with errors in chemical analysis and the evaluation of analytical data in terms of accuracy and consistency.

7004011 Analytical Chemistry for Health Sciences (Lab)

In this lab, students do practical experiments of neutralization; titrations; precipitation titrimetric; complex-formation titrations and analytical separation by solvent extraction.

7000408 Research Methods for Biomedical Sciences

This is an advanced study of the concepts, tools, and methods of scholarly research and the significance of research centers. Students are trained on how to conduct research and publish. They then conduct a community-oriented field research study, covering a relevant medical issue, take samples, analyze results and complete a proper research paper in a systematic fashion

7000302 Nursing Project

The student in this course will be able to utilize the steps of the research process in the proposal and/or conduct a circumscribed nursing research project. In this course, a relevant nursing problem is identified. Systematic observations of events should be carried out using relevant quantitative or qualitative methods. The validity and reliability of the methods should be discussed. The results should be presented, interpreted, discussed and related to a theoretical level. The work is to be documented in the form of a paper organized in a conventional scientific way. Included in the course is presenting a defence of the work and acting as an opponent of another project. Students will select a small research project of actual interest. Faculty members will assist as supervisors in the area of the study. The findings of a written research paper will be presented to a seminar group. It is required and restricted to last semester senior nursing students.

7000303 Midwifery Project

The student will be able to utilize the steps of the research process in the proposal and/or conduct a circumscribed midwifery research project. In this course, a relevant midwifery problem is identified. Systematic observations of events should be carried out using relevant quantitative or qualitative methods. The validity and reliability of the methods should be discussed. The results should be presented, interpreted, discussed and related to a theoretical level. The work is to be documented in the form of a paper organized in a conventional scientific way. Included in the course is presenting a defence of the work and acting as an opponent of another project. Students will select a small research project of actual interest. Faculty members will assist as supervisors in the area of the study. The findings of a written research paper will be presented to a seminar group. It is required and restricted to last semester senior nursing students. This course is designed to emphasize one of the important roles of the midwife: as a researcher. Through this course, the students increase their knowledge about research design and the steps that should be followed in order to conduct research, and become aware of the particular research evidence that relates to practice.

7000307 Optometric Research Project

Using the clinical research methods acquired previously, students are to design, analyze, and write a publishable clinical research thesis. In their final year of optometry training, students are required to defend their theses in front of a designated medical and optometric faculty.

7101101 Introduction to Anatomy/Medical Terminology

This course covers general anatomy (terminology, body organization and body tissues). This is in addition to skeletal, muscular, and cardiovascular, nervous, gastrointestinal, urinary, and genital systems

7101201 Anatomy Limbs and Back

This course is designed to provide knowledge of the organ systems within the limbs and back area, and to help students understand the structural relationship between such organs and the visual system. Laboratory hours will be used to examine models, films and slides to understand the organ system.

7101202 Anatomy Head and Neck

A course designed to provide knowledge of the organ systems within the head and neck area, and to help students understand the structural relationship between such organs and the visual system. Laboratory hours will be used to examine models, films and slides to understand the organ system.

7101203 Neuroanatomy

The aim of this course is to provide students with a basic understanding of the structural organization of the human central nervous system in sufficient depth to form the basis for further clinical studies of the nervous system. Students will learn to identify the major features of the brain and spinal cord (using protected specimen's models and cross-sectional images) to understand the structural and functional relationships between these structures and to apply this knowledge to the clinical situation. The course includes a 1 hour lab that also covers head and neck anatomy.

7101205 Embryology

In this course, human embryology from fertilization to the end of the fetal period will be reviewed. Topics include current concepts in mammalian morphogenesis as applied to the development of various organ systems, the principles of teratology; mechanisms of malformation and etiology and pathogenesis of some of the more common human congenital abnormalities.

7102101 Anatomy and Physiology for Health Sciences I

This course is an introduction to human morphology & function at the cell, tissue, and organ system levels of organization. The human body is also dealt with as a separate system with an understanding of the morphology

& mechanisms governing the function of different human organ systems such as the cardiovascular, immunological, musculoskeletal, neurological, gastrointestinal, hematological, urinary, & genital. The course is taught through theoretical lectures and practical demonstrations.

7 102102 Anatomy and Physiology for Health Sciences II

This course is an introduction to human morphology & function at the cell, tissue, and organ system levels of organization. The human body is also dealt with as a separate system with an understanding of the morphology & mechanisms governing the function of different human organ systems such as the cardiovascular, immunological, musculoskeletal, neurological, gastrointestinal, hematological, urinary, & genital. The course is taught through theoretical lectures and practical demonstrations.

7 102201 Medical Physiology I

This course provides students with basic aspects of medical physiology: cardiovascular, pulmonary, renal, gastrointestinal and reproductive. This is in addition to the principles of general physiology, the control of different organs and the coordination among them. Special emphasis will be on water, electrolyte and acid-base balance, body responses and adaptation to various stress conditions and physiological disorders. The course includes a one credit hour lab that will cover all the systems.

7 102202 Medical Physiology II + Lab

This course provides students with basic aspects of medical physiology: cardiovascular, pulmonary, renal, gastrointestinal and reproductive. This is in addition to principles of general physiology, the control of different organs and the coordination among them. Special emphasis will be on water, electrolyte and acid-base balance, body responses and adaptation to various stress conditions and physiological disorders. The course includes one credit hour lab that will cover all the systems.

7 102301 Neuroscience

This course will cover characteristics of individual nerve cells, how they function and how they interact with each other. It will also cover the anatomy of the brain and spinal cord and continue with an introduction to the functional pathways of the central nervous system and how the CNS is organized to interact with our internal and external environments.

7 102203 Anatomy and Physiology of the Eye

This course is designed to provide students with a comprehensive knowledge of the human gross anatomy of the head and neck with special emphasis on the eye and orbit; gross microscopic look and embryology of the eye and associated structures. Additionally, a comprehensive study of the physiology of the eye, including related pathophysiological mechanisms, will be provided.

The course provides an integrated approach of the physiology of the eye by looking at these specific areas: smooth muscles of the eye, the extra ocular striated muscles, conjunctiva, the lacrimal apparatus, the cornea, the iris, the lens, the ciliary body & the vitreous body, production and drainage of aqueous humor & its effect on intraocular pressure.

7103101 Histology I

This is a physical and microscopic study of the structural appearance of different tissues, and the link between structure and function.

7103102 Histology II

This is a physical and microscopic study of the structural appearance of different tissues, and the link between structure and function.

7103201 Pathology & Pathophysiology for Health Sciences

This course provides instruction on the basic knowledge in pathophysiological processes of different diseases and their effects on the different organs and systems of the human body.

7103210 Serology

This course is an introduction to applied serology, the immune response, and the properties and synthesis of antibodies. Antigen and antibody reaction and the serological procedure, widely used and performed in clinical laboratories, are the major topics in this course

7103212 Body Fluids in Health and Disease

This is a theoretical and analytical study of different body fluids. Pathological results, accompanied with clinical changes in the body, will be compared with the normal results of these fluids

7103214 Microtechnique

This course provides students with brief, accurate and up-to-date information about the basic principles and techniques for the preparation of microscopic slides (for light and electron microscopy) of animals, plants, and bacteria. In addition, they will learn routine and special staining techniques using normal and abnormal tissue samples. They will also learn the cytological preparation and their importance for the diagnosis of disease especially cancers. The course concludes with several types of microscopy focusing on light and electron microscopy.

7103216 Instrumentation and Identification LM

This course focuses on the theory of clinical laboratory instrumentation and the function, utilization, and problem-solving skills necessary for the support of laboratory equipment. This course was developed to provide a more advanced information about the functions and operation of the more elaborate analyzers found in the average clinical lab.

7103217 Instrumentation and Identification LM (Lab)

This course covers the principles of instrumental methods of analysis, including centrifuges, blood cell analyzers, immunochemistry analyzers, coagulation analyzers, flame photometer, HPLC, G.C., atomic absorption, PCR, ELISA, blood gas, visible and ultraviolet spectrophotometry, nephelometry, fluorometry, flame photometry, refractometry, chromatography, electrophoresis, osmometry, flowcytometry, and automated analyzers devices used for hematology, immunology, molecular biochemistry, clinical chemistry, and microbiology.

7103301 Pathology I

This course covers the principles of the discipline of pathology. Disease is presented by organ system. The methods of instruction include lectures, demonstrations, group discussions, laboratories and autopsy participation

7103302 Pathology II

This course builds on Pathology I. It introduces the medical student to the pharmacological concepts of drugs and other xenobiotic action. The classification, mechanism of action, therapeutic uses and toxic effects of pharmacological agents will be stressed. Discussion of representative examples of major drug classes will be emphasized, and treatment modalities, whenever appropriate, will be presented. This basic course is planned to assist the student, via lectures, clinical correlative discussions and independent study, to be able to understand pharmacological therapy in the clinical phase of medical education.

7103303 Endocrinology Fundamentals

Students in this course study the basic principles of endocrinology, focusing on major endocrine glands which regulate the metabolism and biochemical functions, growth and reproduction, structure synthesis, effects of major hormones in the body, their secretion in normal and abnormal cases, and laboratory diagnosis of associated diseases.

7103320 Coagulation and Homeostasis

This course covers the normal blood coagulation, the pathophysiology of hemorrhagic and thrombotic diseases and the principles of assays performed in investigation of hemostasis. The practical part provides bench-level instruction on the performance, interpretation and quality control of routine and specialized tests in the evaluation of hemostasis,

7103318 Hematology

This is a study of blood constituents in health and disease states with special emphasis on lab diagnosis. In addition, the course is a study of different pneumonia diseases, blood cancer, factors behind blood clotting and other related diseases. The course includes one credit hour of practical training.

7 103322 Immunohematology and Blood Banking

The purpose of this course is to study different blood groups, Rh factor, test making, separation of blood constituents, methods of blood donation and reception and the precautions to be taken before and after blood taking.

7 103410 Laboratory Management & Quality Control LM

This course is an introduction to concepts and techniques of management and supervision as used in a medical laboratory.

7 103403 Practical Training LM

After the student's completion of theoretical courses, the Practical Training Committee in the department distributes students among hospitals, health and medical centers and institutions, government and non-government health societies. Each student is expected to spend at least four months in one of these institutions. The directors of institutions concerned will send periodical reports about the students' training and performances. Based on these reports, the committee will evaluate the students and submit its evaluation to the department council.

7 103404 Special Topics E LM

In this course, faculty members raise topics of their own interest, each according to his/her own specialization.

7 103412 Clinical Chemistry

This is an advanced study of different human body fluids in health and disease states. The course also introduces methods of estimating these fluids by using high tech equipment; it also teaches students how to estimate normal and abnormal values in the body. It is also a quantitative and instrumental analysis. Particular emphasis is given to diagnosis, treatment, and disease prevention. Case studies of patients and quality control concepts will also be covered.

7 103407 Project LM

In this field research, students are asked to choose topics of interest suggested by department faculty members. The research project aims at training students to use different equipment available. It also aims at training the students on methods of research: how to use library sources/references such as scientific periodicals, books, dissertations; and how to collect and analyze data and draw appropriate conclusions from scholarly papers. Each student is expected to submit a well-organized report on a topic of his/her own interest.

7 103320 Coagulation and Homeostasis

This course covers the normal blood coagulation, the pathophysiology of hemorrhagic and thrombotic diseases and the principles of assays performed in investigation of hemostasis. The practical part provides bench-level instruction on the performance, interpretation and quality control of routine and specialized tests in the evaluation of hemostasis.

7103321 Coagulation and Homeostasis Lab

This laboratory session covers laboratory and molecular biological tests needed for the diagnosis of bleeding and clotting disorders including bleeding time, PT, PTT, a PTT, platelets count, platelets function test, and the quantitative determination of coagulating factors.

7103318 Hematology

This is a study of blood constituents in health and disease states with special emphasis on lab diagnosis. In addition, the course is a study of different pneumonia-related diseases, blood cancer, factors behind blood clotting and other related diseases. The course includes one credit hour of practical training.

7103322 Immunohematology and Blood Banking

The purpose of this course is to study different blood groups, Rh factor, test making, separation of blood constituents, methods of blood donation and reception and the precautions to be taken before and after blood taking.

7103211 Serology Lab

This lab session covers the practical procedures and the principles of serological procedures as well as quality control, quality assurance, and safety. This includes performance of serological procedures used to aid in the detection or diagnosis of certain diseases.

710321 Body Fluids in Health and Disease Lab

The course covers collection, processing, and laboratory analysis of body fluids. Topics include physical, chemical, macroscopic and microscopic examination of the urine and other body fluids. Throughout this course, special emphasis is placed on correlating of laboratory results with the patient's probable condition.

7103215 Microtechnique E LM (Lab)

This course covers all the techniques used in routine tissue preparation, including fixation, tissue processing, sectioning, routine and special staining, in addition to preparation of blood and bacterial smear.

7103217 Instrumentation and Identification LM (Lab)

This course covers the principles of instrumental methods of analysis, including centrifuges, blood cell analyzers, immunochemistry analyzers, coagulation analyzers, Flame Photometer, HPLC, G.C., Atomic Absorption, PCR, ELISA, blood gas, visible and ultraviolet spectrophotometry, nephelometry, fluorometry, flame photometry, refractometry, chromatography, electrophoresis, osmometry, flowcytometry, and automated analyzer devices used for hematology, immunology, molecular biochemistry, clinical chemistry, and microbiology.

7103413 Clinical Chemistry Lab

This course is designed to provide the students with the principles of clinical chemistry investigation in health and disease. Through the course, students will conduct experiments to investigate body fluids for major and important parameters done to diagnose several diseases with emphasis on the technique used to measure these parameters.

7104101 General Biology for Health Sciences

An elementary course in general biology, it is designed to provide medical students with basic biological principles and an understanding of various biological processes that govern life. The topics include the structure and function of macromolecules, the flow and transformation of energy, structure and function of sub-cellular organelles, human systems and their function and basic knowledge in genetics, histology and microbiology.

7104102 Cell Biology

This course is designed to give major general concepts in cell biology and to provide medical students with basic biological principles and understanding of various biological processes that govern life of the cell, its structure, function and reproduction

7104210 Biochemistry Principles and Metabolics

This is an introduction to the study of biological compounds, carbohydrates, proteins, and fats, in the human body, and their metabolic reactivity and the way the body gets energy. It also briefly introduces students to major aspects of enzymology, types of restraining enzymatic reactivity and enzyme structures and co-enzymes. The course has a one credit hour lab.

7104211 Biochemistry Principles and Metabolics Lab

This course is designed for students who have joined the medical laboratory program only. This is constructed in a manner to cover the essential lab methods and major laboratory techniques which will provide students with comprehensive understanding of major experiments done for carbohydrates, lipid, and protein. This is in addition to the enzyme kinetic as well as the basis of molecular biology.

7104212 Molecular Biochemistry

An integrated function of the human body is considered one that ranges widely from cellular to higher organ-system levels. This course will cover the molecular composition of living cells, the chemical reactions that biological components undergo, the regulation of these reactions and the nutrients that are needed by the living cells. The course material covers bioenergetics and intermediary metabolism of carbohydrates, lipids and proteins and their enzymatic regulation. It is a fundamental biological and medical science

course that provides an understanding of cell biology, microbiology, nutrition, pharmacology, pathology and physiology at the molecular level. The course has a one credit hour lab.

7104213 Molecular Biochemistry Lab

This lab will provide students with essentials in molecular biology and related experimental techniques. Students will be familiarized with cell culture, karyotyping, DNA sequencing, PCR, tissue preparation, DNA and RNA extraction, and bioinformatics. This lab covers the practical aspects of the Molecular Biochemistry course.

7104214 Human Genetics

This course provides students with a comprehensive view of the science of genetics. It covers the history and development of genetics, structure and function of genes, chromosomes and their anomalies, patterns of single gene inheritance, types and mechanisms of mutations and tools of human molecular genetics.

7104215 Human Genetics Lab

This course will cover the major molecular techniques which are used in diagnosis of genetic disorders.

7104204 Biochemistry and Chemistry for Nursing

The course instructs nursing students on biochemistry. It focuses on carbohydrates, proteins, fats, vitamins and minerals. It also deals briefly with biological compounds and their metabolism and major aspects of enzymology.

7105403 General Microbiology

This course is an introduction to the microbial world; the place of organism in the living world; the origin and classification of microbes; applied areas of medical microbiology, morphology and fine structure; cultivation; reproduction; growth; cultural characteristics; introduction to yeasts, algae, moulds, protozoa, viruses.

7105404 General Microbiology Lab

This laboratory course demonstrates the basics of microbiology, such as microscopic observations, classification and identification of microorganisms and the biochemistry of microorganisms.

7105312 Diagnostic Bacteriology

This is a detailed study of running a microbiological lab and how to take samples from patients and send them to lab for testing. The course also deals with methods of isolating and identifying bacteria from these samples and their diagnosis with emphasis on microbial diagnosis. It is also a study of bacteria-causing diseases from clinical and diagnostic aspects.

7 1053 13 Diagnostic Bacteriology Lab

This lab allows students to study the major laboratory tests for bacterial diagnosis and the antibiotic sensitivity test.

7 1053 14 Parasitology

Topics covered in this course include morphology, structure, diseases and laboratory diagnosis of parasites, their life cycle, and ways of infection and prevention with an emphasis on the lab diagnosis of these parasites.

7 1053 15 Parasitology Lab

This lab covers the biology, morphology, and microscopic diagnosis of major human parasites in stool, urine and blood.

7 105320 Medical Mycology

This course starts with the principles of general fungi and other medically important fungi causing human diseases. The second part of the course deals with methods of protection, treatment and diagnosis of these diseases.

7 105321 Medical Mycology Lab

The major techniques for isolation and identification of medical mycology will be covered in this course.

7 1053 19 Food Microbiology

This course is a study of food contamination, food spoilage and diseases transmitted by food. It focuses on microbial food poisoning and food preservation and laboratory diagnosis of diseases transmitted by food and food contamination.

7 1053 10 Food Microbiology Lab

This practical session includes taking samples and identifying the microbes in the food products like fruits, vegetables, dairy, juices and meat.

7 105326 Virology

This course highlights several topics related to viruses: structure, metabolism, genetics, and diagnosis. It emphasizes infectious diseases caused by viruses in both human beings and animals, and ways of protection, treatment and diagnosis.

7 105306 Immunology

This course concentrates on the basic and clinical science of the immune system and its relationship to other sciences and biological systems of mammals. The first part will concentrate on the function-structure relationship of the immune system and its components such as the lymphoid tissue and cells, as well as the development and function of the immune system. The second part concentrates on the clinical science of the immune system and its role in the prevention, causation and diagnosis of human diseases such as cancer, autoimmune diseases and other topics.

7 105307 Lab Methods

This lab is a theoretical and practical introduction to general and special medical laboratory techniques. Techniques include making and formulating chemical solutions and compounds, processing clinical specimens in all medical laboratory branches, including routine, microbiology, hematology, blood bank, immunology and serology, molecular genetics, histopathology and cytology and clinical chemistry.

1021 1235 Biostatistics for Medical and Health Sciences

The course covers the topics the following chapters: relevance and principles of biostatistics with applications in medicine and biology, descriptive statistics, sampling and sampling distributions, estimation of parameters, probability and probability distribution with emphasis on the normal. It also focuses on hypothesis testing for one or two means and one or two proportions, measures of association between two continuous variables (correlation and regression), two discrete variables (chi-square) and non-parametric tests commonly used in medicine and biology.

7 106201 Public Health and Epidemiology

This course aims at studying individual, family and community relationships, the cause of pathological phenomena in society and their symptoms, sources of water and its pollution, air-transmitted diseases, flora and fauna. In addition, the course highlights diseases resulting from technological and urban development. Noise pollution is a case in point. It deals with the dimensions of personal and environmental health and their relationship to social, economic, psychological and political factors, measurements and indices of community health status. The theoretical framework for viewing organizational issues in the delivery of health services is also discussed.

7 106301 Nutrition

This course covers normal and therapeutic nutrition. The role of nutrition in promoting wellness and regaining wellness will be emphasized. Nutritional care of clients with abnormal reactions, due to a single or multiple problems will be covered. Furthermore, common nutritional problems in the Arab world, as well as nutritional education to individuals, families, and communities, will be emphasized.

7 106401 Data Analysis for Health Sciences

This course begins with an introduction to selected important topics in biostatistical concepts and reasoning. This course represents an introduction to the field and provides a survey of data and data types. Specific topics include tools for describing central tendency and variability in data; methods for performing inference on population means and proportions via sample data; statistical hypothesis testing and its application to group comparisons;

issues of power and sample size in study designs; and sampling techniques and random sample. There is an emphasis on interpretation and concepts.

7106402 Environmental Toxicology

This course focuses mainly on the effect produced by poisons on the environment (humans, animals, plants, soil, water, etc). It includes a detailed study of the groups of environmental pollutants, the need to further research and investigation in this area, bioaccumulation, the effect of poisons on all levels of the universe, and the methods and pathways leading to contamination and the methods of calculating or estimating them.

7107301 Pharmacology for Health Sciences

This course introduces the basic concepts of the body's reaction to drugs including absorption, metabolism and excretion. The knowledge provided will ensure the safe practice of nurses and provide a foundation for teaching the relevant pharmacology to clients. The course also teaches students the methods of action, the uses and the side effects of each medication.

7107201 Pharmacology I

This course introduces medical students to the pharmacological concepts of drugs and other xenobiotics actions. The classification, mechanism of action, therapeutic uses and toxic effects of pharmacological agents will be stressed. Discussion of representative examples of major drug classes will be emphasized, and treatment modalities, whenever appropriate, will be presented. This basic course is planned to assist the student, via lectures, clinical correlative discussions and independent study, to be able to understand pharmacological therapy in the clinical phase of medical education.

7107202 Pharmacology II

This course deals with the pharmacology of different organ systems. Groups of drugs which are specifically considered include those acting on the cardiovascular and endocrine system, chemotherapy and inflammation.

7107203 General and Ocular Pharmacology

This course is designed to introduce students to topical and oral pharmacological agents used in clinical optometric care, as well as the systemic medications most commonly encountered.

7109101 Introduction to Optometric Practice

This course is designed to introduce students to the development of optometry, optometric education and the scope of optometric services in Palestine and around the world. Students will learn about the rights and responsibilities of optometrists. The course will examine the expectations and challenges of optometrists in the healthcare system. The focus will be on professional behaviour, ethics and communication skills necessary for patient care, patient rights and licensure requirements.

7109102 Geometric and Physiological Optics

This course is designed to introduce students to optical integrated principles. The principles integrated include light behaviour, reflection and refraction, vergence, objects, images, thin lenses, simple model eyes, spherical refracting surfaces, thick lens systems, mirrors, ray tracing, and prisms. Physical optics will focus on principles such as angular magnification, telescopes, apertures and stops, prismatic effects of lenses, diffraction, polarization, interference, electromagnetic waves, and the wave nature of light.

7109201 Visual Optics

This course examines the optics of the eye and the optical factors of the visual system. The course will concentrate on examining the optical quality of the eye and the measurement of vision and ocular characteristics. It will provide a comprehensive review of the human eye optics and will cover the refractive mechanism, the dioptics of the eye, including its aberrations and schematics eyes, the mechanism of accommodation and pupillary contraction, as well as the retinal image quality and intraocular scatter measurement.

7109202 Visual Perception

This course is designed to introduce students to visual system processing. The emphasis will be on the fundamental concepts and models of monocular visual perception, visual processing, motion perception and the molecular genetics of colour vision.

7109203 Optometric Practice Management

The course is designed to introduce students to the different modes of optometric practice in Palestine in an effort to assist them in the business aspects of owning, managing, and running optometric clinics and practice optometry. Emphasis will be on goal-setting and budget/debt management principles for achieving personal financial success.

7109204 Primary Optometric Care I

This course is designed to introduce students to the underlying concepts and interrelationships of optometric tests to permit the development of diagnosis and treatment plans in a primary care optometric setting. Through lecture and labs, students will be able to perform the technical skills necessary for a refractive eye exam, and investigate the basic types of visual anomalies.

7109205 Ophthalmic Optics

This course introduces students to the ophthalmic optics of single-vision and multifocal spectacle lenses, ophthalmic lens design, and minimizing lens aberrations. Specialty areas like anti-reflective coatings and polarization customized lenses will be thoroughly explored. The laboratory will introduce students to the measurement and inspection of spectacle lenses and the manufacturing process of spectacle lenses.

7109206 Primary Optometric Care II

This course is a continuation of Primary Optometric Care I. The course will focus on strengthening students' technical and case analysis skills. The focus will be on the assessment and management of non-strabismic binocular vision and accommodative anomalies. By the end of the course, students should be able to perform a comprehensive primary eye care exam, as well as diagnose and manage a wide variety of refractive and visual anomalies.

7109207 Anterior Segment Disease

This course introduces students to abnormalities and diseases of the anterior and posterior segments of the eye with an emphasis on identification, diagnosis and management. The emphasis will be on the anterior part of the eye, including the lids, orbit and adnexa, conjunctiva, cornea, sclera, uvea and lens. The etiology, pathogenesis and differential diagnosis of various diseases will be discussed in details.

7109208 Posterior Segment Disease

This course builds on the Anterior Segment Disease course. An extensive discussion of the diagnosis and management of posterior segment conditions will be presented. The focus will be on common vitreal, retinal and macular conditions. Emphasis will be on systemic diseases and their association with the ocular system.

7109209 Diagnostic Techniques I

This preclinical experience course teaches students the technical skills that are essential in diagnosing, treating and managing ocular disease in a primary care setting. The lab will initially focus on teaching students how to perform slit lamp microscopy, tonometry, funduscopy and indirect ophthalmoscopy.

7109210 Environment and Occupational Vision

Topics covered in this course student include the impact of occupational and environmental factors on the visual system, and vision assessments of patients with specific occupation-related vision requirements. Emphasis will be on prevention of occupational eye injuries and the promotion of occupational health and safety.

7109211 Introduction to Clinical Practice

This is the first clinical course designed to introduce students to clinical practice in examining the visual system and carrying out corrective procedures. This clinic will begin at An-Najah Teaching Optometry Clinic, with students providing primary eye care to family members, friends, staff and employees within the University.

7109212 Clinical Dispensing I

This is the first clinical course in the 2-part series of Clinical Ophthalmic dispensing. It is designed to advance student knowledge and technical skills in dispensing. The focus will be on spectacle manufacturing, lens coating and edging of spectacle lenses. Students will rotate at various optometric labs and manufacturing sites to get hands-on experience.

7109213 Diagnostic Techniques II

This preclinical experience course is designed to teach students the technical skills that are essential in diagnosing, treating and managing ocular disease in a primary care setting. The lab is designed to provide students with the necessary skills to perform auxiliary ophthalmic testing such as gonioscopy, scleral depression, tear film assessment, and dilation

7109301 Introduction to Contact Lenses

This course will introduce students to the methods of prescribing, fitting, evaluating and caring for patient using uncomplicated rigid, spherical soft, toric soft, and extended wear contact lenses.

7109302 Pre- and Post-Operative Optometric Management

The course introduces students to co-management care between optometrists and ophthalmologists. The course will mainly focus on the pre-operative and post-operative surgical care of various ocular procedures, as well as emergency care medicine.

7109303 Grand Rounds I

This clinical meeting course is designed for students, in the presence of hospital staff and faculty, to present original clinical, epidemiological, and basic science research, in addition to case reports and grand rounds of exceptional teaching value.

7109304 Binocular Vision and Motility

This course will focus on classification, epidemiology, phenomenology, diagnosis, and management of non-strabismic binocular vision disorders, accommodative anomalies, and amblyopia. The second half of the course will examine various vision therapy techniques in managing non-strabismic visual anomalies.

7109305 Pediatric Vision

Students in this course are introduced to specialized testing techniques and methods of evaluation appropriate to infants and children as well as exceptional children of any age. A significant portion of the lab will be dedicated to community vision screenings.

7109306 Primary Vision Care Clinic I

This is a clinical course where students will rotate at An-Najah Teaching Hospital to provide primary eye care services.

7109307 Clinical Dispensing II

This is a continuation of Clinical Dispensing I. Students will be placed in various optical shops where they will be professionally trained to order, fit, verify and finally dispense various types of spectacle lenses. The goal of this clinical course is to provide students with experience in dispensary management.

7109308 Specialty Contact Lenses Fitting

Building on Introduction to Contact Lenses, this course focuses on the methods of prescribing, fitting, evaluating and caring for patient, using specialty contact lenses for irregular corneas (Keratoconus, post-surgical fits etc). The course will also discuss myopia control with reverse geometry contact lenses, as well as scleral contact lenses.

7109309 Grand Rounds II

This clinical meeting course is designed for students, in the presence of hospital staff and faculty, to present original clinical, epidemiological, and basic science research, in addition to case reports and grand rounds of exceptional teaching value.

7109310 Binocular Vision Anomalies

This course, building on Binocular Vision and Ocular Motility, introduces students to strabismic binocular vision anomalies and diseases related to the binocular visual disruption. The second half of the course will examine the physiological and neurological aspects of the oculomotor system. Areas of saccadic, pursuits, vestibular, optokinetic and fixations systems will be examined. The course will also focus on the structure and innervations of the extraocular muscles and the mechanisms utilized in eye movements

7109311 Geriatrics and Low Vision

This course allows students to learn about the effect of aging on the visual system, and geriatric vision evaluations. The course will focus on the assessment and management of patients with visual impairment. Emphasis will be on providing visual rehabilitation services through prescribing visual aids and devices.

7109312 Primary Vision Care Clinic II

This is a clinical course where students will rotate at An-Najah Teaching Hospital to provide primary eye care services.

7109313 Contact Lens Clinic

This contact lens clinical course trains students in prescribing, fitting and evaluating spherical and rigid contact lenses for ametropia and ocular disease.

7109314 Paediatric and Binocular Vision Clinic

This is a clinical course where students will rotate at An-Najah Teaching Hospital to provide pediatric eye care services to infants and children up to the age of 12. In addition, students will rotate at An-Najah Teaching Hospital to provide binocular vision and vision therapy services and to evaluate and examine patients with strabismus, amblyopia, and accommodative and visual perceptual lags that may contribute to learning difficulties.

7109315 Low Vision Clinic

Students will rotate at An-Najah Teaching Hospital where they will provide vision rehabilitation services for visually impaired patients.

7109316 Optometric Externship

Students will rotate in various hospitals and specialty clinics: ocular disease; surgical care; pediatrics; visual rehabilitation units; binocular vision and vision therapy clinics.

7220301 Science and Art of Clinical Medicine

This course is organized in hospital-based groups of 6 students and will take place 1/2 day each week of the academic year. (4 hours/week, 16 sessions = 2 credit hours/semester. It will include 8 general lectures in 4 sessions of 2 hours). This course constitutes the first experience of the future doctors of clinical medicine.(see detailed description)

7405411 Introduction to Midwifery

This is a basic course for aspiring midwives and those who are investigating the possibility of a future in midwifery. This course is a prerequisite for Midwifery I. It focuses on the midwife's role as a professional practitioner. It will be an introductory course to basic midwifery. The main purpose of the course is to introduce students to midwifery as a profession that has roles, regulations and scope of practice. It also provides students with basic knowledge, which will prepare them to be able to communicate with women about their health. Different medical terms in basic and clinical sciences, pharmacological and drug terms, and the Latin origin of all medical terminology will be discussed. This enables students to use medical terminology and standard definitions encouraged by the World Health Organization, as well as by the International Council of Midwives and the American College of Obstetricians and Gynecologists (2002).

7405203 Midwifery I

This course is a prerequisite for Midwifery II. It explains the physiology & management of normal pregnancy, including fetal development and maternal physiological changes, the assessment of a pregnant woman, as well as fetal well-being in the antenatal period. The midwife scope and role in the care of normal pregnancy will be addressed.

7405204 Midwifery I (Clinical)

The midwifery management process is introduced as an organizing element of clinical practice. Students integrate history taking and health assessment with beginning midwifery management skills. Clinical experiences focus on the use of the midwifery management process as it pertains to the health care of women. The concept of primary care is introduced. The organization of the midwifery care, the antenatal booking interview, perception care, the embryo of health promotion, antenatal preparation of the breast for breastfeeding, antenatal education, the midwife's role in ultrasound, the psychology of pregnancy and parents' anxieties and the realities. The counselling process, the methods used in counselling, and the planning of a counselling session will be emphasized. A practicum in antenatal care provides the student midwife with an opportunity to apply the theories learned by conducting antenatal examinations in various situations in a practical setting, such as MCH centres and outpatient clinics.

7405301 Midwifery II

This course builds on the primary care and management skills acquired in Midwifery I. Students begin to care for the family in the perinatal period. Newborn assessment is added. The midwifery management process continues to be the organizing framework for clinical practice. Normal midwifery is a major focus along with the behavioral and sociological aspects of pregnancy, childbirth, motherhood and parenting. The course describes the normal pregnancy, labor and puerperium and it includes the role of midwives during these stages. It also covers health education and preparation for parenthood, intrapartum and post-partum care by midwives is explored thoroughly, and includes concepts related to the wellness of women, health education, health promotion, family spacing, midwifery care in the first stage of labor, artificial rupture of the membranes, nutrition and hydration in labor, pain relief in midwifery, the midwife's management of the third stage of labor, HIV infections from a midwifery perspective, are also included in the course. Postnatal care includes postnatal perineal care, postnatal care of the breastfeeding mother, emotional problems following childbirth, parental-infant attachment, care of the umbilical cord, transitional care. Teenage mothers and quality assurance in postnatal care shall be taken in consideration. A practicum on post-partum care provides the student nurse-midwife with

the knowledge that has been learned and the management of normal labors and deliveries as well as complicated ones.

Practicum Labor and Delivery I

This period of the practicum in normal labor and delivery will provide the student midwife with an opportunity to apply the theories and skills that are learned in Midwifery for Normal Childbearing. The main concern is on management of normal labor and delivery. Each student is evaluated by the program objectives.

Practicum Labor and Delivery II

This period of the practicum in normal labor and delivery provides the student nurse midwife with the opportunity to apply the knowledge and the skills that are learned in Midwifery for Abnormal Labor and Delivery. Emphasis is placed on the management of normal labor and delivery as well as complicated ones.

Practicum Neonatal

This will provide an opportunity for the students to apply the knowledge and the skills that are learned in Midwifery, Neonatology and Child Health Care. The focus is on working with healthy neonates, as well as with high risk neonatal situations, through spending a period of time in normal nurseries and neonatal intensive care units

7405302 Midwifery II (Clinical)

In this course, students continue to build on primary care and management skills acquired in Midwifery I and begin to care for the family in the perinatal period. Newborn assessment is added. The midwifery management process continues to be the organizing framework for clinical practice. Normal midwifery is a major focus, along with the behavioral and sociological aspects of pregnancy, childbirth, motherhood and parenting. The course describes the normal pregnancy, labor and puerperium, and it includes the role of midwives during these stages. It also covers health education and preparation for parenthood. Intrapartum and post-partum care by midwives are explored thoroughly, and this includes concepts related to the wellness of women, health education, health promotion, family spacing, Midwifery care in the first stage of labor includes artificial rupture of the membranes, nutrition and hydration in labor, pain relief in midwifery, the midwife's management of the third stage of labor, and HIV infections from a midwifery perspective. Postnatal care includes postnatal perineal care, postnatal care of a breastfeeding mother, emotional problems following childbirth, parental-infant attachment, care of the umbilical cord, and transitional care. Teenage mothers and the quality assurance in postnatal care shall be taken in consideration. A practicum in

post-partum care provides the student nurse/midwife with the knowledge that has been learned and the management of normal labors and deliveries as well as complicated ones.

Practicum Labor and Delivery I

This period of the practicum in normal labor and delivery will provide the student midwife with an opportunity to apply the theories and skills that are learned in Midwifery Normal Childbearing. The main concern is on management of normal labor and delivery. Each student is evaluated according to the program objectives.

Practicum Labor and Delivery II

This period of the practicum in normal labor and delivery provides the student nurse midwife with an opportunity to apply the knowledge and the skills that are learned in Midwifery: Abnormal Labor and Delivery. Emphasis is placed on the management of normal labor and delivery as well as complicated ones.

Practicum Neonatal

This course aims at providing an opportunity for the students to apply the knowledge and the skills that are learned in Midwifery, Neonatology and Child Health Care. The focus is on working with healthy neonates as well as with high risk neonatal situations, through spending a period of time in normal nurseries and neonatal intensive care units.

7405409 Midwifery II and Family Planning

This course focuses on the midwife's role during puerperium. It focuses on breast feeding issues and management immediately after birth and during puerperium. It is also concerned with immediate physiological and psychological care of the newborn. It discusses normal puerperium, actions and management as well as abnormal puerperium and emergencies. Practicum postnatal care provides the student midwife with an opportunity to apply the theories learned by conducting postnatal examinations in various situations. The student midwife will be able to provide appropriate assessment and holistic care of the mother and her baby during puerperium.

7405410 Midwifery III/ Family Planning Clinical

This course focuses on the midwife's role during puerperium. It focuses on breast feeding issues and management immediately after birth and during puerperium. It is also concerned with immediate physiological and psychological care of the newborn. It discusses normal puerperium, actions and management as well as abnormal puerperium and emergencies. Practicum postnatal care provides the student midwife with an opportunity to apply the theories learned by conducting postnatal examinations in various situations. The student midwife will be able to provide appropriate assessment and holistic care of the mother and her baby during puerperium.

7405405 Advanced Midwifery

The focus of this course is on the collaborative management between the midwife and other health care providers in complex clinical situations. It focuses on the identification, diagnosis, evaluation and follow-up of women with obstetric and medical complications. Emphasis is on midwives dealing with high risk women during pregnancy, labor and postpartum cases. The student collaboratively manages the care of women who have or develop medical, obstetrical, or gynecological complications. Bleeding in pregnancy and termination of pregnancy will be emphasized. Newborn complications are considered. Primary care of women and newborns is also addressed. The course ends with obstetric emergencies, i.e. shoulder dystocia, postpartum hemorrhage, hemorrhagic shock, cord prolapse, and eclampsia convulsion.

Extended Practicum

The purpose of the extended practicum is to provide the student with an opportunity to practice autonomy in labor and delivery care in the base hospital. To ensure competence and autonomy in practice when making judgments and decisions, the student will keep a journal of critical incidents in practice from the outset of the program. The personal journal is an important aspect of the program evaluation strategy.

74005406 Advanced Midwifery (Clinical)

The focus of this course is on the collaborative management between the midwife and other health care providers in complex clinical situations. It focuses on identification, diagnosis, evaluation and follow-up of women with obstetric and medical complications. Emphasis is on midwives dealing with high risk women during pregnancy, labor and postpartum cases. The student collaboratively manages the care of women who have or develop medical, obstetrical, or gynaecological complications. Bleeding in pregnancy and termination of pregnancy will be emphasized. Newborn complications are considered. Primary care of women and newborns is also addressed. The course ends with a look at obstetric emergencies, i.e. shoulder dystocia, postpartum hemorrhage, hemorrhagic shock, cord prolapse, and eclampsia convulsion.

Extended Practicum

The purpose of the extended practicum is to provide the student with an opportunity to practice autonomy in labor and delivery care in the base hospital. To ensure competence and autonomy in practice when making judgments and decisions, the student will keep a journal of critical incidents in practice from the outset of the program. The personal journal is an important aspect of the program evaluation strategy.

7405407 Intensive Clinical Midwifery (Internship)

This course offers fourth-year students an opportunity to develop expertise and to implement problem solving and management principles in the midwifery management of selected groups from the health-illness continuum and to practice midwifery independently at three levels of prevention: primary, secondary, and tertiary at different clinical settings in the hospital and community (antenatal care, labor and delivery unit, gynecology and postnatal). Students will apply theoretical knowledge to clinical settings with an emphasis on leadership, management and the changing agent role, and taking full responsibility under the supervision of clinical instructors and nurses in charge of clinical setting as preceptors. The course also provides practice essential to the assessment, planning, implementation and evaluation of clients in different clinical setting. It also allows students to apply midwifery skills related to health promotion, health maintenance, health restoration and disease prevention and treatment among the target aggregates. This training will offer students the opportunity to take full responsibility as a charge midwife before graduation.

7405201 Adult Health Nursing I for Midwives

The clinical course for Adult Health Nursing I+II is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are trained to use the nursing process to explore the role of the professional nurse in assisting clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7405202 Adult Health Nursing I (Clinical Midwives)

The clinical course for Adult Health Nursing I+II is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are trained to use the nursing process to explore the role of the professional nurse in assisting clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7405307 Gynaecology

This course is designed to enable the students to understand the role of the midwife in dealing with gynecological disorders. Upon completion of this course, the student will be able to discuss cancer related to the female reproductive system (focusing on breast cancer, recognition of proper ways of self-breast examination for early detection); describe certain uterine,

ovarian, cervical and vaginal anomalies and diseases; identify certain diagnostic procedures related to gynecological disorders; and identify the causes and treatment of infertility in Palestinian couples. The course enables students to cite a basic definition of sexuality; outline the psychological and physiological implications of sex and sexuality during pregnancy, childbirth, and afterwards; list some of the factors that may impact sex and sexuality for women who are breastfeeding; and explore female sexuality and discuss deviations or needs which may arise through their life span. The course ends with a discussion of sexuality problems in the Palestinian society, techniques, responses and special needs, and counseling methods and approaches; sexually transmitted diseases and preventive measures (bacterial vaginosis, candida, trichomans, syphilis, gonorrhea, herpes genitalis, and HIV and AIDS).

7405308 Gynaecology Clinical

Clinical practice course prepares students to practice in the gynaecological wards to qualify the students nurse to communicate effectively with women to perform gynecological procedures and care in a scientific and skilful way. It focuses on the importance of assessing and caring for women with gynecological problems and undergoing surgery, such as malignant diseases of the vulva, cervix, uterus, ovarian tubes, infertility and sexually transmitted diseases.

7405402 Women Health Issues

The course enables students to identify the health needs of women throughout the span of their life cycle. The course promotes them to develop skills to assess the physical, social, physiological and cultural needs of Palestinian women. It also touches on cultural, social and psychological influences on an adolescent's health, such as early marriage and education, and highlights her promotion and development towards a positive change within society. The course will focus on the health needs of the Palestinian woman where the students, being professionals, act as advocates of change to promote health of women in their own community. The course focuses on the nutritional needs of women through their life span, reflects on social, cultural, gender, and political issues affecting the health of women in Palestine and highlights the health needs of adolescents, premenopausal and menopausal women, and during the span of old age and disability. The course ends with a description of the woman's mental health: postpartum emotional changes, depression and psychosomatic disorder.

7405408 Comprehensive Exam (Midwifery)

The comprehensive exam is one of the basic requirements which nursing students must take at the end of their study to obtain a B. SC. in nursing. The comprehensive exam is a requirement for graduation from the Nursing Department at An-Najah National University.

The following are the courses included in the comprehensive exam:

- Midwifery I
- Midwifery II
- Midwifery III
- Advanced Midwifery
- Gynecology
- Ethics and Professional Aspects of Midwifery
- Family Planning and Contraception
- Women Health Issues

7401122 Introduction to Nursing

This course provides an introduction to nursing. Students will be introduced to the history and development of nursing locally and internationally. It also covers ethical issues in nursing. The course also provides an overview of the health care delivery system. Topics covered include the relationship between society and health, health manpower in general and the allied health professions in particular. The primary, secondary and tertiary health care services are covered and the modalities of service provision are discussed. Students are provided with an overview of each of different allied health professions, the distinctive role of each of the professions within the health care team; significant aspects of the work of each of the professions, and the skills and competencies required. Employment and continuing education opportunities are also discussed.

7401125 Health Assessment

7401121 Health Assessment Lab

7401123 Fundamentals of Nursing I

This course goes over the concepts of health, ill health, and disease; the significance of the environment for health and health promotion; as well as illness prevention in the living conditions of the individual at different ages. Topics are studied from physical, mental, sociocultural and spiritual points of view. This course is also designed to provide concepts basic to the practice of clinical nursing. The nursing process is presented as a frame of reference in meeting the human needs of people and on the delivery of health care in a variety of settings. The course also provides concepts basic to the practice of clinical nursing. Emphasis will be on nursing concepts, procedures, and their applications in the nursing lab.

7401115 Fundamentals of Nursing I Lab

7401124 Fundamentals of Nursing II

This course builds on the unifying concepts basic to nursing practice, introduced in Fundamentals of Nursing I. The students will build on the concepts of the nursing process in providing care to individual clients

requiring primary and select secondary interventions. Emphasis will be placed on nursing intervention skills in non-acute and selected acute health care settings. This course provides calculating adult and children medication dosage. Continued emphasis will be given to nursing concepts, procedures, and their applications.

7401104 Fundamentals of Nursing II (Clinical)

This course is a first step in introducing students to nursing as a field of practice. Students are expected to perform and master certain psychomotor skills with an integration of relevant cognitive components from Fundamentals of Nursing I and II: 150241+150343 (Adult Health Nursing I+II) for 3+3 credit hours. In these two courses of adult health nursing, students are introduced to the individual adult client with common alterations in health status. They are designed to give a broad general background in care of adults who have medical and surgical problems. Students are guided to examine terminology, pathophysiology of common causes, specific diagnostic procedures, and medical management for each specific alteration in health status. Nursing process is the framework used to deal with each health problem. Principles of holistic approach are emphasized during the care of nursing clients. These courses focus on pre- and post-operative care, fluid/ electrolytes and acid base balance, oncology and the alterations in hematology, vascular, cardiac respiratory, dermatology and gastrointestinal systems. Principles of nursing assessment standardized nursing diagnoses amenable to nursing, nursing interventions, interventions, and criteria for evaluation are introduced with an emphasis on holistic approaches during the care for nursing clients. The course focuses also on the comprehensive delivery of care through the use of the nursing process to elderly and geriatric patients at home, in institutions or who have been hospitalized for complex, acute or chronic condition.

7401202 Adult Health Nursing II

The clinical course for the Adult Health Nursing I+II courses is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are guided to use the nursing process to explore the role of the professional nurse in assisting clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7401203 Adult Health Nursing I (Clinical)

The clinical course for the Adult Health Nursing I+II courses is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are guided to use the nursing process to explore the role of the professional nurse in assisting

clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7401204 Adult Health Nursing II

The clinical course for the Adult Health Nursing I+II courses is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are guided to use the nursing process to explore the role of the professional nurse in assisting clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7401205 Adult Health Nursing II/Clinical

The clinical course for the Adult Health Nursing I+II courses is offered over two semesters. Students are introduced to the care of adult clients with common alterations in health status. The students are guided to use the nursing process to explore the role of the professional nurse in assisting clients attain and maintain wellness. Communication skills, critical thinking, decision making, psychomotor skills, teaching learning principles, keeping abreast of current literature, and moral principles are emphasized in dealing with selected clients in clinical settings.

7401301 Critical Care Nursing

The course focuses on the comprehensive delivery of nursing care to adult and geriatric patients hospitalized for complex, acute or chronic conditions in critical care units. It focuses on pathophysiological and psychological responses of adult clients experiencing critical health disruptions. Concepts from pathophysiology, nursing science, pharmacotherapeutics, and medical technology are integrated as a theoretical base for practicing critical care nursing and managing critical health disruptions. Approaches using analytical thinking, decision making, hemodynamic monitoring, the patient's education, an analysis of research results, and the nursing process are used to build a system to identify physiological and psychosocial responses to critical health disruption and synthesize appropriate intervention strategies. Legal and ethical issues related to critical care nursing will be discussed. The course also provides the students with the principles and skills necessary to help victims in accidents, emergency, and disaster situations. It includes measures to be taken to ensure personal safety, thus leading to accident prevention in the home and community. The practical part will be devoted to mastering first-aid skills, concepts and principles of emergency care. This course ends with nursing care of the patient in ICU, CCU, kidney unit, operation room, burn unit, and emergency department.

7401120 Critical Care (Clinical)

Students will be taught to apply the theoretical knowledge they have received in clinical settings. Experience in using the nursing process in provision of nursing intervention with critically-ill patients will be stressed. Through clinical days, this course focuses on the application of principles and theories from nursing science, pathophysiology, pharmacology, health assessment, and medical technology to provide nursing care for adult clients experiencing critical health disruptions. The course addresses the role components of a critical care nurse in monitoring, patient education, and utilization of medical technology to evaluate the health status of adult clients experiencing critical health disruptions with special focus on identification of psychological and physiological responses and learning needs of the clients and their families. Critical care nurse roles and emergency care nurses role of problem solving, decision making, and prioritizing nursing diagnoses and intervention strategies are practiced.

Students will practice in the ICU, CCU, kidney unit, operation room, burn unit, and emergency department.

7401401 Intensive Clinical Nursing

This course offers fourth-year students an opportunity to develop expertise and to implement problem solving and management principles in the nursing management of selected groups from the health-illness continuum and to practice nursing independently in three levels of prevention: primary, secondary, and tertiary, in different clinical settings (hospital and community health centers). Students will apply theoretical knowledge to clinical settings with emphasis on leadership role, management and changing agent role, and taking full responsibility under the supervision of clinical instructors and nurses in charge of clinical setting as preceptors. The course also provides practice essential to the assessment, planning, implementation and evaluation of clients in different clinical setting, as well as an application of nursing skills related to health promotion, health maintenance, health restoration, disease prevention and treatment among the target aggregates. This training will offer students the opportunity to take full responsibility as charge nurses before graduation.

7401402 Comprehensive Exam for Nursing

The comprehensive exam is one of the basic requirements which nursing students take at the end of their study to obtain a B. Sc. degree in nursing. The comprehensive exam is a requirement for graduation from the Nursing Department at An-Najah National University.

The comprehensive exam covers the following courses:

- Adult Health Nursing

- Maternal Health Nursing
- Nursing Ethics and Professionalism
- Children and Adolescents Health Nursing
- Administration and Management in Nursing
- Mental Health Nursing
- Community Health Nursing

All the students have to take library science as well.

7402202 Communication and Health Education

The course explores the basic principles and concepts of health education. It focuses on the methods used for healthy or sick individuals and/or group(s) in the community or in health care institutions. The course is organized around the elements of the teaching and learning process. Emphasis will be on the assessment of learning needs, instructional objectives, teaching modalities, educational resources, and evaluation of the teaching/learning process. Theories and/or models that explain and influence health behavior will be explored. Opportunities in microteaching will also be arranged. The course focuses on the methods used in counseling of healthy individuals of all ages and patients with problems interfering with their normal daily lives. Theories of communication and group processes are studied. The course also centers on communication approaches and techniques relevant to the provision of nursing care to individuals and groups. In order to explain man's interaction with the environment, sociology and psychology theories focusing on social communication, social networks, roles, social influences and attitude changes are studied. Theories concerning learning, giving information and evaluation are also studied.

7402401 Community Health Nursing

The course introduces students to the scope of community health nursing, with an emphasis on nursing care rendered in homes and health agencies for the promotion of health and prevention of illness based on the concept of primary health care. It also provides theory and practice essential to the assessment, planning, implementation and evaluation of the clients across the lifespan in the community individuals, families, groups. Emphasis is on the study and application of nursing role components inherent in community health for health promotion and as disease prevention based on the concepts of primary health care, self-care and home health care. Conceptual and scientific frameworks applied to community-oriented nursing practice including environmental health, epidemiology, evidence-based practice, community health education, theories, models and principles are also addressed. Environmental health focuses on the types of health organizations in the community and the services rendered in the promotion of health and prevention of illness, as well as on the national programs dealing with the elements of primary health care.

7402409 English for Nursing

This course is designed to enhance and improve nursing students' English language reading, writing, speaking and listening proficiency so that they can function effectively in their academic study of nursing courses and in the world of work after graduation. The course will focus on nursing vocabulary expansion, improvement of reading academic texts in the field of nursing, practice in writing and familiarization with the basics of language structure and grammar. In addition, the course will also emphasize speaking and listening skills in way that enables students to express themselves clearly and without difficulty and understand speakers.

7402402 Community Health Nursing (Clinical)

This course is designed to provide the student with an opportunity to observe, participate and function independently to explore nursing skills and techniques related to health promotion, health maintenance and health restoration and disease prevention among the target aggregates in primary health care settings: clinics, homes, youth centers, nursing homes, faculties and schools. Students are directed toward implementation of the nursing process by applying primary, secondary, and tertiary prevention of disease for clients in community setting.

7402403 Community Midwifery

This course addresses some concepts of community-based midwifery care. It teaches the student midwife to utilize the tools to understand some important facts in their local communities that may have an effect on health through compiling a community profile. There will be special focus on the woman's role, job description, health, and mortality pathways that might exist in the community.

7402404 Community Midwifery (Clinical)

This course addresses some concepts of community-based midwifery care. It guides the student midwife to utilize the tools to understand some important facts in their local communities that may have an effect on health through compiling a community profile. There will be special focus on the woman's role, job description, health, and mortality pathways that might exist in the community.

7402406 Administration and Management in Nursing (Clinical)

This course allows students to apply the knowledge of management principles, theories, and related functions needed by the nurse leader in order to organize effective client care in clinical settings. Students will evaluate managerial conduct and plan and/or develop management approaches for improvement of the service rendered to healthy and/or sick individuals within the various health care settings in the community. The students get to experience the fundamental skills & concepts for a beginning leadership in nursing.

7402407 Administration and Management in Nursing

This course provides students with knowledge of management principles, theories and related functions needed by the nurse leader in order to organize effective client care in clinical settings. The course introduces students to the concept of health economics, health systems financing and cost-effectiveness of services, while emphasizing the maintenance of the effectiveness of care to demonstrate social responsibility.

7404301 Mental Health Nursing

This course incorporates the concept of the nursing process in explaining mental health issues, mental disorders, major theories in mental health, psychopathology of mental health disorders, impact of various psychiatric and personality disorders. It teaches students how to utilize different steps in the nursing process to help individuals with psychiatric-and mental health disorders and their families to retain and maintain the optimal level of mental health. This course also explains different theories and modalities which can help individuals to deal with various types of life stressors in healthy and constructive ways. This course gives great emphasis to communication skills and how they affect the interaction with clients and other health professionals in the psychiatric settings. In this course, students learn different treatment modalities used to treat individuals with emotional and mental disorders. It also highlights the role the health team.

7404302 Mental Health Nursing/Clinical

This course provides nursing students with an opportunity to deal directly with clients who suffer from emotional and mental disorders and receive care in psychiatric care settings (inpatient & outpatient) where students can assess these clients and the resulting behavior exhibited by them, utilizing the nursing process in planning and providing nursing care for those individuals based on knowledge gained from biological, social, psychological sciences, as well as humanities and nursing. Student's clinical experience will be provided in hospitals, community and day care centers, rendering services to patients with mental health and psychiatric problems and their families. Skills and attitudes of students will be enhanced in caring for patients receiving various therapeutic treatments. Students deal with clients by demonstrating high skills in therapeutic communication whether with individuals or in groups. Also, students help in maintaining therapeutic environment and work with clients in helping them to select the best coping methods to deal with life stressors as well as working with mental and social health team in helping those clients when using different modalities in psychiatric treatment and helping them and their families to retain and maintain optimal level of mental health to go back to community to live as normal as possible.

7404303 Mental Health in Midwifery

This course is designed to enable midwifery students to understand normal and abnormal behavior, psychological and social crisis and mechanisms for coping and adaptation to crisis especially among women during their different life stages. This course incorporates the concept of nursing process in explaining mental health issues, mental disorders, major theories in mental health, and the psychopathology of mental health disorders. This course also explains different theories and modalities, which can help individuals to deal with various types of life stressors in healthy and constructive ways. In this course, students learn different treatment modalities used to treat individuals with emotional and mental disorders and they also understand the role the health team.

7403301 Child and Adolescent Health Nursing

This course introduces students to appropriate scientific knowledge, which enables them to develop their own unique clinical and educational approach to care for children, infants and their families. It will stress the health problems of the infant and child and the nursing care necessary in restoring health to the child. The course moves from simple to complex issues. It starts with concepts of normal growth and development, health promotion and maintenance, and the prevention of illnesses and accidents and then to selected health problems (chronic and common health problems, and communicable diseases). This is achieved through utilizing the nursing process, developmental theories, new trends and the latest approaches in the management and caring of children. The course encourages students to utilize knowledge synthesis; problem solving techniques, critical thinking, and family centered approached in the provision of empowered care.

7403302 Child and Adolescent Health Nursing (Clinical)

This course integrates knowledge from the Nutrition and Pharmacology course in providing competent level of care to children and their families. Students will apply concepts related to growth and development, research, leadership and nursing process in restoring health for children and their families. This course will introduce students to different clinical settings, as MCH, hospital and rehabilitation centers enable them to achieve a holistic approach to nursing care through primary prevention, health promotion, health maintenance and rehabilitation care. Students will effectively engage in identification of ethical and legal problems, which help in participation in decision making and problem solving.

7403303 Neonatology

This course will prepare the student to work with healthy and sick neonatal babies and other neonatal complications. The major focus is the healthy neonate, its development, care and nutrition. Concepts explored are child

health promotion strategies and high-risk situations, which include the common neonatal disorders. The care of pre-term babies and the problems associated with pre-term birth are also addressed. The student will be able to assess the newborn babies based on the Apgar score and other physical assessment measures, identify newborn babies who are in need for resuscitation, recognize some abnormalities, such as spinal bifida, cleft lip, hydrocephalus, etc and differentiate between physiological and pathological jaundice.

7403307 Neonatology (Clinical)

This course will prepare the student to work with healthy and sick neonatal babies and other neonatal complications. The major focus is the healthy neonate, its development, care and nutrition. Concepts explored are child health promotion strategies, and high-risk situations, which include the common neonatal disorders. The care of pre-term babies and the problems associated with pre-term birth are also addressed. The student will be able to assess the newborn babies based on the Apgar score and other physical assessment measures, identify newborn babies who are in need for resuscitation, recognize some abnormalities such as spinal bifida, cleft lip, hydrocephalus, etc and differentiate between physiological and pathological jaundice.

7403305 Growth and Development Through Life Span

This course is a study of human development through the life span, including physiological, social, emotional, cognitive, language, and cultural influences. This course explores young children's characteristics and needs, the multiple influences on development and learning, and the how-to's of using this developmental knowledge to create healthy, respectful, supportive and challenging learning environments. The principles of child development are emphasized, including language acquisition, creative expression, physical, cognitive and social/emotional development. The human growth and development examination (infancy, childhood, and adolescence) covers material that is generally taught in a one-semester introductory course in developmental psychology or human development. An understanding of the major theories and research related to the broad categories of physical development, cognitive development, and social development is required, as is the ability to apply this knowledge. The study of human growth and development across the life span with emphasis upon normal growth and milestones achieved in the physical, cognitive, social, and emotional systems in educational and familial contexts are highlighted.

7302103 Communication Skills

The course emphasizes the most important communication skills to enable the student to play a vital role in patient education, thus improving patient understanding and compliance.

7227201 Behavioral Science

This course introduces students to important notions in medical psychology and different old and modern approaches of behavioral theories applied to the field of patient care and encounters.

7227301 Clinical Psychology

7227202 Medical Ethics

This is a one-credit hour course offered to second-year students. It deals with fundamental ethical principles underlying medical practice. Ethical aspects of decision-making are discussed with a special emphasis on moral, cultural and religious issues in addition to confidentiality and respectability in patient management.

7227203 Nursing Ethics & Professionalism

The course focuses on ethical considerations in the profession, as well as professional issues relevant to the practice of nursing for the professional nurse and for the nursing profession. It deals with fundamental ethical principles underlying nursing practice. Ethical aspects of decision-making are discussed. Emphasis is placed on the code of ethics for nurses. The course focuses on the regulatory mechanisms of the nursing profession and the rules and regulations controlling the practice of nursing. The course is a study of relationship and responsibilities of professional nursing that emphasizes current issues and professional organizations, as well as planning and discussion of career development. The nurse's professional responsibility is emphasized and analyzed from different perspectives. Ethical questions concerning nursing and medical treatment are dealt with. The nurse's professional attitude is developed with reflection over and practice in communication and encounters with both patients and their families. The student's own ability to feel empathy and the student's own reactions in relationships with patients are analyzed. Ethical issues and values are examined. Students are provided with an overview of each of different allied health profession, the distinctive role of each profession within the health care team, significant aspects of the work of each of the professions, and the skills and competencies required. An overview of nursing as a special discipline that has a major impact on the health care delivery system is highlighted. Autonomy, accountability, commitment, entry standards, nursing theories and others will be discussed through debates, seminars, panel discussions, and critique papers that will lead to the development of critical thinking and evaluation skills.

7227204 Midwifery Ethics and Professional Aspects

7227205 Lab Medicine Professional Ethics

The course focuses on ethical considerations in the profession as well as professional issues relevant to the practice of medical laboratory. It deals with

fundamental ethical principles underlying medical laboratory practice. Ethical aspects of decision-making are discussed.

7227208 History of Medicine and Pharmacy

This is a historical study of medicine and pharmacy throughout the ages. The course highlights the Muslim Arab scientists' contributions to these two fields.

7227402 Forensic Sciences for Health Sciences

Students will develop general technological and lab abilities and skills in the analysis and interpretation of data. Specifically, a variety of abilities will enable students to take on the full variety of tasks satisfied by a forensic researcher such as DNA profiling, illegal material research, recognition of human remains and the use of IT and data source in the recognition, tracking and avoidance of criminal activity.

7227102 First Aid

This is an introductory course which aims at teaching essential skills needed in emergency cases and the methods of providing patients with first aid prior to later treatment. It also teaches appropriate behavior during sudden critical situations, such as bleeding and burns, and ways of prevention of these dangers.

Faculty Staff Members:

Name	Position	University of graduation
Myassar Barahmeh	Instructor	Science and Technology -Jordan 2012
Manal Ihbeshe	Instructor	Science and Technology -Jordan 1978
Mustafa Herzallah	Instructor	Birmingham 2008
Mustafa Ighnaim	Assistant professor	Paris 6 2010
Malek Al-qub	Assistant professor	Paris 6 2010
Ayman Hussein	Assistant professor	Hamburg-Germany 1995
Eyad Alali	Assistant professor	Aligarh Muslim University-2002 India
Amira Shaheen	PhD	University College London 2009
Jawad Fatayer	Full professor	North Texas University 1991
Hamza Al-Zabadi	PhD	Lorraine University/France 2010
Adnan Sarhan	Assistant professor	Athens 2008
Mariam Al-tell	Ph D	Jordan university 2012
Sabrina Russo	PhD	University of Firenze 2007
Bilal Rahal	Assistant professor	Gottingen -Germany 2006
Abdelrahman Al-Aqraa'	Lecturer	Science and technology-Jordan 2005
Majdi Dweikat	Assistant professor	Stiletto –Italy 2006
Riham Khalaf	Assistant professor	Paris 6 2012
ImadIddein Malhas	Lecturer	LongIsland-NY 1980
Amjad Hessien	PhD	Kanazawa University 2010
Prof.Waleed Sweleh	Lecturer	North-eastern University, Boston, USA 2000
Ansam Sawalha	Assistant professor	Texas –Osten 1998
Adham AbuTaha	Assistant professor	North-eastern University, Boston, USA 2003
Dr. Basma Dmere	PhD	Clemson University 2011
Azmi Hussein	Assistant professor	Baltafa Academy 2011

Dr. Majdi Dweikat	Assistant professor	Salinto -Italy2006
Dr. Rasha Khaiat	Assistant professor	South Paris 2011
Dr. Ramy Zagha	Assistant professor	Jordan University 2005
Dr. Husni Maqbul		Jordan University 1991
Dr. Hanood Abu-Ras		Jerusalem 2007
Dr. Ahmad Altal		Science and technology-Jordan 2007
Dr.Waleed Basha	Assistant professor	Kanazawa University -Japan 2005
Suhad Alami	Lecturer	University Wisconsin / Milwaukee 1993
Dr. Alaa' Abuzant	Assistant professor	University of Louisville/ USA 2006
Dr. Lubna Kharaz	Assistant professor	Newcastle University /UK 2009
Dr. Abdelnasser Assi	Assistant professor	Liverpool University / UK 2006
Dr. Mohamad Alqadi	Lecturer	Abudees /Jerusalem 2013
Dr. Suleiman Khaleel		Loughbrough University of Technology country : England/ UK 1984

Faculty of Humanities

{ Department of Arabic }

Vision

This program's vision crystallizes on raising students' adequacy in the Arabic language, the language of religion and Arabism, and seeks meeting the local community's needs and providing it with the competencies. The program goes along with the vision of modern education, which is based on integrated education and extracurricular activities, and it reaches out to the other departments to improve students' efficiency in other areas.

Mission

The Department of Arabic aims to develop higher education and graduate students with special competency in the Arabic language, and its heritage and literature, and all that is related to the critical theories, sciences and terminology. In addition, the Department aims to graduate students who can do scientific research, have expertise that distinguishes them, and who can communicate with the local, regional and global community. The Department provides the local community with competent graduates to meet its needs, so graduates have an effective role in delivering the department's message - spreading the Arabic heritage and enhancing communication between learners and intellectuals and this language. In addition, the Department aspires competition locally, regionally and globally.

Objectives

The program seeks expansion in its areas of specialization, and strives to prepare competent cadres to serve the community. The program varies its methods to enable the students to practice the language and raise their levels of creativity. The program's objectives can be summarized as follows:

1. Preparing qualified teachers in the area of specialization.
2. Preparing students capable of doing scientific research in their area of specialization, and who are able to offer and justify their opinions.
3. Providing students with adequate competencies to enhance their self-reliance in learning and education.
4. Student outcomes

This program aims to achieve the following outcomes:

1. The student should be able to adequately practice teaching.
2. The student should be able to do scientific research in different approaches.
3. Strengthening students' bonds with their national and patriotic heritage.
4. Keeping up with the movement of modern and contemporary Arabic literature in its political, social and artistic issues.
5. Enhancing comprehension and texts' appreciation.
6. Interacting with the local community.
7. Improving writing and speaking.

Local and regional references

The national and Arab universities and the university's twin networks with international universities, in accordance with the university's policy.

University Requirements

Students should pass all the courses in this group (18 credit hours)

Course No.	Course Title	Credit hrs.
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English 1	3
11000325	English 2	3
11000105	Palestinian Studies	3
11000117	Leadership and Communication skills	3
11000108	Community Service	1
11000127	Introduction to Computer	1

Free Courses

Students should pass 4 credit hours of the free courses the University provides.

Department of Arabic Curriculum

- 124 credit hours:
- 18 University requirements
- 90 Compulsory requirements
- 12 Electives
- 4 Free courses

The compulsory requirements: 90 credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10301111	Introduction to Literary Appreciation	3	-
10301112	Morphology	3	-
10301113	Arabic Rhetoric 1	3	-
10301114	Syntax 1	3	-
10301115	Pre Islamic Literature	3	-
10301116	Hebrew Language 1	3	-
10301117	Literature and Texts in the Islamic Era	3	10301115
10301118	Umayyad Literature and Texts	3	10301117
10301219	Prosody and Rhyme	3	-
10301220	Scientific Research Methodologies	3	-
10301221	Arabic Philology	3	-
10301222	Palestinian Popular Literature	3	-
10301223	Syntax 2	3	10301114
10301224	Arabic Rhetoric 2	3	10301113
10301325	Jerusalem in Arabic Literature	3	-
10301326	Andalusian literature	3	-
10301327	Arabic Phonetics	3	-
10301328	Old Arabic Criticism	3	-
10301329	Modern Palestinian Literature	3	-
10301330	Methods in Teaching the Arabic Language	3	-
10301331	Poetry in the Abbasid Age	3	10301118
10301332	Prose in the Abbasid Age	3	-
10301333	Syntax 3	3	10301223
10301334	Modern Linguistics	3	-
10301435	Approaches of Modern Literary Criticism	3	10301328
10301436	Modern Arabic Poetry	3	10301331
10301437	Modern Arabic Prose	3	-
10301438	Medieval Ages Literature	3	10301331
10301439	Syntax 4	3	10301333
-	Arabic Practical Training	3	-

Elective Courses: 12 credit hours

Literature Courses

Course No.	Course Title	Credit hrs.	Prerequisites
10301160	Arabic Library	3	-
10301149	Special Topic in Old Arabic Poetry	3	-
10301150	Special Topic in Old Arabic Prose	3	-
10301253	Applied Criticism	3	-
10301354	Special Topic in Modern and Contemporary Arabic Poetry	3	-
10301455	Special Topic in Modern and Contemporary Arabic Prose	3	-
10301456	Comparative Literature	3	-

Language, Syntax and Rhetoric Courses

Course No.	Course Title	Credit hrs.	Prerequisites
10301157	Arabic Dictionaries	3	-
10301158	Special Book in Syntax or Language	3	-
10301159	Arabic Language Problems	3	-
10301160	Hebrew Language 2	3	-
10301260	Teaching Arabic for non-Arabic Speakers	3	-
10301261	Arabs' Linguistic Research	3	-
10301262	Arabic Language and Media	3	-
10301363	Sociolinguistics	3	-
10301364	Arabic Language and Computer	3	-
10301365	Qur'anic and Prophetical Rhetoric	3	-
10301466	Arabs' Syntactic Thinking	3	-
10301467	Comparative Semitics	3	-

Methods Courses

Course No.	Course Title	Credit hrs.	Prerequisites
-	Teaching Aids Design and Production	3	Faculty of Educational Sciences
-	Teaching Skills	3	Faculty of Educational Sciences
	Free hours (4 free hours)		

Course Descriptions

10301111 INTRODUCTION TO LITERARY APPRECIATION

This course aims at introducing the elements of the creative process: the creativity, the text, and the recipient, and attempts to identify with the artistic, intellectual, and psychological aspects of the literary text, and propelling students' abilities to receive the text spontaneously; establishing an effective relationship between them and the text, on the one hand, and with the text and its social environment on the other, through high texts from different ages.

10301112 MORPHOLOGY

This course is designed to introduce the linguistic levels and the morphological status. After this, the course moves to cover a number of morphological topics: morphological derivatives, dualism, I'lal (defectiveness), Ibdal (appositional substantive), reduction, relation, and assimilation, etc. This is coupled with an application of the topics in the form of exercises.

10301113 ARABIC RHETORIC

This course addresses the study of the topics of rhetoric and eloquence; the student studies types of metaphor, linguistic and intellectual tropes, metonymy and preterition. It also studies affectation and embellishments. The course is coupled with an application on a set of selected literary texts.

10301114 SYNTAX 1

This course covers the following subjects: parts of speech and the functional classifications, the verb and verb classifications, inflected and uninflected nouns, and the inflected and uninflected verbs and their classifications, syntactic, grammatical cases (nominative, accusative and genitive), declension (fully declined nouns, triptotes, diptotes, sound masculine plurals, sound feminine plurals, the definite and indefinite and their types (pronouns, nouns, demonstrative pronouns, relative pronouns, definite article, nominative nouns), subject and agent, subject and Predicate, Sisters of Inna, and Sisters of Lana. This is coupled with a syntactic application on literary texts.

10301116 PRE-ISLAMIC LITERATURE

This course introduces the religious, political, social, economic and intellectual life that produced Pre-Islamic poetry, and attempts to identify its beginning, evolution, artistic functions, and literary issues, such as: plagiarism, mu'allaqat

(the suspended odes, the hanging poems), the utterly destitute (sa'alik) poetry, and structure and unity, through the examination of selected texts.

10301116 HEBREW LANGUAGE 1

This course is an introduction to the Hebrew language for speakers of Arabic and other languages, and it will focus on the following topics: Hebrew alphabet, Hebrew diacritics, sentence and sentence structure, singular and plural, adjectives, numbers, femininity and masculinity, verb tenses, and comparing linguistic phenomena between Arabic and Hebrew. At the end of the course, the student will be able to read, write, and talk, and will have sufficient knowledge of vocabulary.

10301117 LITERATURE AND TEXTS IN THE ISLAMIC ERA

This course is designed to introduce students to the Islamic perspective on poetry, the media warfare the Ansar poets had to go through against the ethnic poets of Mecca, and monitors the traditional and new purposes that accompanied the triumph poetry. It also studies the magnificent masterpieces of contemporary poets, and identifies the Islamic and Jahili penetrations.

10301118 LITERATURE AND TEXTS IN THE Umayyad ERA

The course includes the environments of poetry at the Umayyad time: Hijaz, Dedouin, Greater Syria, Iraq, and Khrassan. The student studies this era's important poets and their works, as well as analyzes selected poetic works and identifies their distinct properties and the relationship of this all with the previous and subsequent eras. The course finally touches on the poetic subjects in this era: politics, satire and love, and shows the most important poets and characteristics.

10301219 PROSODY AND RHYME

This course is designed to introduce prosody in terms of resources, terms, role in musical poetry, and the poetic verses and the different anapests, and then to highlight the divisions of poetry schemes: syllables, rhythms, divisions, and defects. In addition, the course addresses the modernization movement in Arabic poetry music: Muwashshah, free verse, and rhythm.

10301220 METHODS OF SCIENTIFIC RESEARCH

This course aims to provide students with the basic skills in writing scientific research and introducing its properties and approaches: the historical, descriptive, statistical and integrated approaches and others. It illustrates scientific research methods, the different sources, and methods and principles of documentation. It discusses issues of texts, practicing calligraphy and identifying with manuscripts, identifying with distortion and travesty, and preparing indexes. Students present research papers that apply what they were taught about the principles of the research paper.

10301221 ARABIC PHILOLOGY

Topics covered in this course include: the origin and development of the Arabic language, and theories that study this development, such as dialects, places, and characteristics. It also studies Arabic's relationship with Semitic languages, the study of the extinct Arabic epigraphs, the study of the remaining Arabic and its characteristics, the characteristics and features of the mutual languages, and furthermore, duplicity, syntactics and the linguists' viewpoints, derivatives, parsers, synonyms, antonyms, syntax, portmanteau, and discussing the linguists points' of view in the previous cases.

10301222 PALESTINIAN POPULAR LITERATURE

This course is designed to introduce Palestinian popular literature as a means of defending Palestinian identity through the renewal of many rituals, customs and traditions expressed by this genre of literature. Thus, it defines folk literature, its themes, features, length in time and place, and examines certain models from this literature.

10301223 SYNTAX 2

Expanding on the topics discussed earlier in Syntax 1, this course is designed to address the following syntactic and grammatical topics: nouns in the accusative case (passive object, direct and indirect object, absolute object and other objects' types, alongside with their methods, for instance, temptation, warning, competence, and engaging), adverbs (if, whereas, whenever, since, for, etc.), idioms, Haal (condition), exception, and the genitive nouns. There will be grammatical applications to reinforce these topics.

10301224 ARABIC RHETORIC 2

The course addresses the topics of semantics: rhetoric, discourse (predicate and composition), verbal and nonverbal composition and their types, sentence and sentence type, subject and object, elision trope, imperative style, anastrophe, portraying and its devices, polysyndeton and asyndeton, brachylogy, circumlocution, equality, brevity and verbosity. This will be applied with criticism and modern rhetorical studies.

10301325 JERUSALEM IN ARABIC LITERATURE

This course covers the holy city's presence in the ancient and modern prose and poetry of Arabic literature, and it identifies the most important intellectuals who wrote in these fields, highlighting their orientations and visions, then their artistic properties. The course tackles the distinct ages and literary arts where Jerusalem was uniquely present and addressing the reasons for this presence.

10301326 ANDALUSI POETRY

This course aims to study the poetic functions, defined by the poetic description of the Andalusian nature, praise, elegy and flirt, and the influence

of the eastern poets on their Andalusian counterparts. Furthermore, the course addresses the lamentation of kingdoms, cities and lost Andalus, and knowing the stylistic features for this purpose; the Andalusian Muwashshah: their purposes, language and prosody, and the reasons behind this art's spread in spite of criticism. The course discusses the statement which says that, "The Andalusian Muwashshah is the first step in the fall of the Arabic poetry through its long journey." It also looks at the emergence of the Andalusian *zajal*, and examines study of a number of *zajal* singers, first and foremost Abn Qazman.

10301327 ARABIC PHONETICS

This course introduces phonology, works of classical Arab scholars in the field, development of phonology by Western linguists, the articulatory system, the manner and rules of sound production, modern phonetic theories that address phoneme and phonology, the structural and nonstructural phonemes, such as Gramont law, parallelism, and violation law. It also studies the phonetic development and the controversial phonemes between the old and modern schools.

10301328 ANCIENT ARABIC CRITICISM

This course describes criticism, in terms of the concept, beginning, and evolution since the Pre-Islamic era until the beginning of the modern era. The course highlights the eras' prominent scholars, sources, writings, issues and terms, such as pronunciation and meaning, printed and made, and ancient and modern.

10301329 MODERN PALESTINIAN LITERATURE

This course is designed to address Palestinian literature in its different times and places: Palestinian literature before 1948, exile literature as well as poetry of the Nakba (disaster 1948), resistance literature in occupied Palestine between the years 1948 and 1967, prose poetry and free verse, and a study of the Palestinian writers Ibrahim Touqan, Abd- Al Karim Al Karmi (Abu Salma), Tawfiq Sayegh, Tawfiq Ziad, and Mahmoud Darwish. The course also studies the Palestinian novel in terms of origins, evolution, the most prominent symbols in exile and in Palestine, such as Ghassan Kanafani, Emil Habibi. It also considers the short story in different environments and at different times, so as to cover the short story map since its very beginning until Al-Aqsa Intifada, and chooses the models of Najati Sodqi, Sameera Azzam, Mahmoud Shuqair, Tawfiq Fayyad, Liana Bader, Akram Haneyya; furthermore, it covers distinct autobiographies such as those by Fadwa Touqan, and Jabra. I. Jabra.

10301330 METHODS IN TEACHING THE ARABIC LANGUAGE

The course aims to provide students with the methods of teaching the Arabic language in its different stages, with an illustration on these methods and variety.

10301331 POETRY IN THE ABBASID AGE

This course is designed to introduce students to the literary and intellectual life in the Abbasid Era (132-656), and identify the impact of amusement, lechery, heresy, populism and asceticism in poetry, the process of modernizing and the most prominent trends in poetry, alongside with the identifying the masters of poetry (Bashar, Abu Nawwas, Abu Al-Atahya, Abu Tammam, Al Buhturi, Ibn Al Rumi, Al Mutanabbi, Abu Firas Al Hamadani, and Al Ma'arri). Finally, the course examines literary texts and shows the artistic characteristics of this poetry.

10301332 PROSE IN THE ABBASID AGE

The course aims to study the arts of prose in the Abbasid Age: sermon, lecture, testament, message, debate, maqamah, manamah, story and autobiography; the course introduces the masters of prose, such as Ibn al-Muqaffa', Sahl bin-Haroun, Ahmed bin-Yousef, Amro bin- Mes'adah, Inb al-Zayyat, Ibrahim al-Sawli, Al Jahiz, Abu Hayyan al-Tawhidi, and Ibn Qutaiyah, selected prose works, and indicating their artistic characteristics.

10301333 SYNTAX 3

Expanding on the topics discussed in Syntax 1 and 2, this course studies the present tense in the accusative and subjunctive cases, appositives, the indeclinable, assertive and non-assertive conditionals, subordinates, adjectives, Badal (apposition), rhetoric joining, conjunctions, assertion, and acting nouns as verbs (gerund, participle, imagery, and superlative). There will be grammatical applications to reinforce these topics.

10301334 MODERN LINGUISTICS

The course aims to provide students with a basic knowledge of modern linguistics, the linguistics illustrated by the articulatory and morphological circles concerned with types of morphemes, and the syntactic modern theories. The course includes the modern linguistic schools: constructive, Chomsky's structural syntax, and others; it also highlights linguistics' relationship to other sciences, such as psychology, sociology and anthropology.

10301435 APPROACHES OF MODERN LITERARY CRITICISM

Students are introduced to the most important methods of literary criticism from the 19th century approaches (Sainte Beuve, Hippolyte Taine, and Prontera), and addresses Impressionism, the non-structural curriculum scripts (psychological and social), and reaches out to the structural curriculum scripts, and those that address the receiver (semiotics and deconstruction), and the modern Arab literary criticism masters' interaction with these curriculum approaches as well as the most important doctrines of classic, romantic and realistic literature.

10301436 MODERN ARABIC POETRY

This course covers the circumstances and factors that led to the emergence of the modern Arabic poetry movement, starting with its pioneers and their intellectual, cultural contents and poetry trends; this is accomplished by highlighting the revival school, Al Diwan School, poetry in the diaspora, the Apolo School, and these movements' presence in schools, prospects of evolution in the east and west, the main topics and properties, different methods of locution, the free verse and its emergence, characteristics, trends, pioneers, artistic properties, impact on the theme and art of the contemporary movement. The course is coupled with an application study of selected poetry models.

10301437 MODERN ARABIC PROSE

This course addresses the modern prose art, beginning with the short story, the modern Arabic novel, and the Arabic play, as it studies their emergence in the Arabic literature since their 20th century beginnings, and highlights their pioneers, trends, themes, artistic properties, and evolution in the modern Arabic literature. The course is coupled with application models on the short story, novel and play.

10301438 MEDIEVAL AGE LITERATURE

This course introduces a comprehensive analytical study of selected poetry texts from the Fatimid Age, the Ayyubid Age, and the Mamluke Age, and focuses on studying sectarian literature, Jihad literature, and Sufi literature; furthermore, it aims to study themes of writing, themes and properties of oratory, and the general authoring movement.

10301439 SYNTAX 4

This course covers a set of different syntactic issues which is of great importance to every student, and is considered a completion to what students studied in previous courses, and includes: acts of praise and slander, interjections, verbal noun, letters (binding letter, addition letter), deterring and snubbing, explanation, gerund, request style, question marks, Noons' intensifier, and nunnation; and it deals with the syntactics of sentences and phrase. This course is coupled with an application on linguistic texts.

ARABIC PRACTICAL TRAINING

This course studies basic theoretical and applicable concepts and issues that aim to prepare Arabic language teachers for the teaching process through deepening the knowledge of the educational concepts in the fields of practical training, the objectives, importance, and stages, and providing them with the necessary skills in the methods of lesson planning and methods of teaching and evaluation.

This course requires students to attend classes of teachers of the upper basic and secondary stages, writing reports on their observations, presenting them

in front of their classmates and the supervisor so that they can discuss and criticize them, in addition to suggesting the right solutions. It also requires designing a whole actual lesson and presenting it to the students. Then the supervisor, in cooperation with the Arabic language teachers in different schools, evaluates the student teacher.

10301160 ARABIC LIBRARY

The course introduces the Arabic writing movement from different dimensions, and introduces students to the Arabic library heritage, particularly the prose and poetry libraries and their two main streams: literary and linguistic. Students receive training on how to deal directly with these primary sources.

10301149 SPECIAL TOPIC IN OLD ARABIC POETRY

This course aims to study an artistic phenomenon in the old Arabic poetry extending from the Pre-Islamic Age until the beginnings of the Medieval Age, a poet from this period or one of the different themes of poetry. The poetic texts are the center of research and study.

10301150 SPECIAL TOPIC IN OLD AGE PROSE

This course aims to study an art of the old Arabic prose arts, studying it deeply, indicating its artistic properties, and addressing the reasons behind its evolution and development and its distinct writers.

10301253 APPLIED CRITICISM

This course is designed to invest in students' inventory in the theoretical aspects of old and new criticism, applied on a set of selected poetry and prose works in order to develop students' critical skills and textual literary appreciation.

10301354 SPECIAL TOPIC IN MODERN AND CONTEMPORARY ARABIC POETRY

This course deals with topics of modern and contemporary Arabic poetry in study and analysis, such as trends or modern poetry schools (poetry in the Diaspora, free verse structure, the heritage symbols, mask, plot, the city, resistance, the image of the enemy, the other, the woman), or a poet of the pioneers stage, poets or divan of modern Arabic literature or any other artistic phenomenon of the modern and contemporary Arabic poetry.

10301455 SPECIAL TOPIC IN THE MODERN AND CONTEMPORARY ARABIC PROSE

This course focuses on a modern Arabic writer, novelist or narrator, who has a wide experience in his/her literary genre. In the novel, the course may address Naguib Mahfouz, Abdulrahman Muneef, Hanna Mina, Ghaleb Halsa, Al-Taher Wattar, or Ahlam Mustaghanmi. In the field of short story: Youdef Idris, Zakaryya Tamer, Mahmoud Shuqair, Sameera Azzam, or Akram Hanyah, and it can also deal with the East and West conflict of civilizations in the Arabic novel, or the Arab-Israeli conflict in the Arabic narration, or

issues and artistic phenomena in short story, novel or play. The teacher can teach novelists' texts, or the prose works and autobiographies in Egyptian, Iraqi or Palestinian literature.

10301456 COMPARATIVE LITERATURE

This course introduces the history of comparative literature: emergence and evolution, different schools (French, American, Russian and German schools) and the Arab and Palestinian efforts in it.

On the other hand, the course tackles the modern and contemporary Arab literature relationship with world literature, such as: Laila and Majnun in the Arabic and world/Persian literatures; Al Mutanabbi's connection with ancient Greek literature; Pygmalion between Tawfiq al- Hakim and Bernard Shaw; the connection of Saadallah Wannous theatre with Bertolt Brecht theatre; the impact of T.S. Eliot and other western poets like Lorca in the modern Arabic literature; and Naguib Mahfouz's affection with the western novel, such as Balzac and James Joyce novels; Ghassan Kanafani affection with world literatures, such as: William Faulkner (*The Sound and The Fury*); and the Arab in Western literature and Westerners in Arab literature.

10301157 ARABIC DICTIONARIES

This course begins with a historical study of the invention of the dictionary by ancient peoples, including the Arabs. Then the course will move to study the first beginnings of an Arabic dictionary, early endeavors in this respect, major Arabic dictionary schools: the phonetics schools pioneered by Al Khalil Ben Ahmad in his book *Al-'Ayn*; Al- Qafiyya School by Al-Zamakhshari in *Asass Al Balagha Dictionary*; Raedat Al- Jawhari in *Al-Sihah Dictionary*; and alphabetic and Abjad writing systems. The course sheds the light on the modern dictionaries: *Al- Waseet*, *Al-Muheet* and *Al-Munjed*, and illustrates the hard efforts in the industry of the historical dictionary, and the endeavors made by the linguistic conclaves in the electronic and computerized dictionaries, alongside with training the students to look at the lexical items in all dictionaries.

10301158 SPECIAL BOOK IN SYNTAX OR LANGUAGE

In this course, the students study a source of the syntax or language courses so that they get trained on reading old texts, and are able to identify with the approaches' disciples in studying syntax and language. Students get the chance to keep up with other sources that enable them in their understanding.

10301159 ARABIC LANGUAGE PROBLEMS

This course aims to tackle the main challenges that faced and is still facing the Arabic language, then illustrates the efforts that Arabic scientists have made in order to overcome these obstacles, such as: Arabicization, terminology, identity, globalization, call for the colloquial dialect, the issues of conducting

Arabic in the syntactic and written aspects, the linguistic mistakes and methods of solving them.

10301161 HEBREW LANGUAGE 2

This course is a continuation of the Hebrew Language 1 course; it aims to study and the language more thoroughly, and train students in Arabic translation, to and from.

10301260 TEACHING ARABIC FOR NON-ARABIC SPEAKERS

The aim of this course is to educate students in this section of the science of Arabic, and indicate its various aspects, including: the difference between the acquisition of language and learning, the objectives and attitudes of the educated, characteristics of other Arabic language teachers of non-Arabic speakers, the curricula of education, training skills, and training centers and education, methods of teaching, how to design their curricula for public and private schools,; problems with learning and education, and then how to design different tests.

10301261 LINGUISTIC RESEARCH

This course illustrates the linguistic efforts by scholars, and how scholars benefited in the intellectual studies in contemporary nations such as Greece, India and Persia, especially in the fields of curriculum or contemporary intellectual curricula. Also, the course deals with the extent of Arab scholars' contribution to the discussed acts of speech, logic and philology, with reference to the most important sources of languages, so it becomes the data research for contemporary researchers.

10301262 ARABIC LANGUAGE AND MEDIA

Language is the means of communication and networking, and it is a major media language; so the course aims to strengthen the students' linguistic inventory, and strengthen students' ability to express themselves flawlessly, and to tackle the media and press errors and correct them. The course includes the concepts of media, communication and networking, deliberation, some rules of morphology and syntax, with a focus on numbers, duals, plurals, and monitoring errors contained in these topics, and correct them. Finally, the course deals with the different media topics, and errors and correction.

10301363 SOCIOLINGUISTICS

This course is designed to study the language and its role in society, and track language changes related to duplicity, the language of the sexes, the masculinity of language, language of craftsmen, and Al'Taghlib (subjugating one phrase with the attributes of another). The course explains the impact of the environment on the tongue, and illustrates the language of discourse, deliberation and pragmatics, and demonstrates the social theories and their relation to the interpretation of the language.

10301364 ARABIC LANGUAGE AND COMPUTER

This course aims to study the importance of computers in the Arabic language and research, benefitting from its potentials in computerizing the language, with its vocabularies, morphology, syntax, literary texts, and benefitting from its programs and the web in literary and linguistic research.

10301365 QUR'ANIC AND PROPHETICAL RHETORIC

This course aims to introduce Qur'anic and Hadith rhetoric, the stylistic properties and an application on a selected set of texts of the Qur'an and Hadith, along with analyzing them rhetorically and stylistically.

10301466 ARABS' SYNTACTIC THINKING

This course introduces the emergence of Arabic syntax, and sheds light on its prominent scholars and syntactic schools: Basra, Kufa, Baghdad, Andalus, and Egypt; and these schools' perspectives on the syntactic issues: measurement, agent, vowels, so that students identify with the approaches of scholars and their different perspectives in addressing the syntactic issues and problems.

10301467 CONTRASTIVE SEMITICS

This course aims to introduce the definition of Semitic languages, and addresses them through highlighting the following topics: Semitic mother language, properties of the Semitic languages, the similarities and difference, the status of Arabic between the Semitic languages, and it introduces models of comparison to tackle the points of similarities and differences.

Staff Members

Name	Rank	University of Graduation
Khalill Odeh	Full Prof.	University of Cairo
Hamdi Al Jabali	Full Prof.	University of Jordan
Wae' Abu Saleh	Full Prof.	University of Alexandria
Ihsan Al Deek	Full Prof.	University of Jordan
Adel Al Osta	Full Prof.	University of Bamburg, Germany
Nader Qasim	Assistant Prof.	University of Jordan
Raed Abdulraheem	Associate Prof.	University of Jordan
Dr. Ghanem Mize'l	Assistant Prof.	University of Berlin
Dr. Saeed Shawahneh	Assistant Prof.	University of Jordan
Jabr Khdir	Assistant Prof.	Saint Joseph University
Fathi Khadir	Assistant Prof.	Neelain University
Ma'moun Mubarakeh	Assistant Prof.	University of Damascus
Abdul Khaliq Issa	Assistant Prof.	University of Jordan

{ Department of English Language }
and Literature }

Vision:

The Department of English Language and Literature at An-Najah National University provides its graduates with the necessary knowledge, skills and training so that they become active civilians in their country, the Arab region and the world. It also improves their critical thinking skills in accordance with their heritage and culture, scientific research potentials and acquiring knowledge; furthermore, it enhances the principles of vocational guidance and leadership in response to the reality of the world in learning and education.

Mission

The Department of English Language and Literature provides English language learning opportunities to prepare students to the jobs where excellence is required. It also encourages research in the field of learning to solve problems, since the Department provides the educational environment which leads to creative critical thinking. The Department takes responsibility for providing Palestinian and Arab markets with culturally-, nationally- and nationalistically-enlightened graduates who are professionally and intellectually reliable. Regardless of the hardships, the graduates find their way towards success to become leaders in spreading information and knowledge wherever there is a need for it. Through their study, these students learn to become eloquent interlocutors, writers who respect diversity, and appreciate others' ideas.

Objectives:

1. For the graduates to employ their English language expertise and skills in serving their community.
2. For Students to acquire the skills of critical and creative thinking, problem solving and decision making.
3. For Students to seek cultural exchange to make the required intellectual impact on the cultural rapprochement.
4. For students to acquire the capacity for independent and continuous learning.
5. For students to acquire the ability to work within a team and accept different views.

Students Outcomes:

Providing the Palestinian community and labor market in the region with graduates who have the following capacities and skills:

1. The ability to use the English language effectively in writing and conversation and in different contexts in its oral and written form.
2. Translating to and from the Arabic and English languages and cultures.
3. Writing linguistic and literary scientific research which serves their area of specialization.
4. Teaching the English language in Palestine and the Arab World.
5. The culture and technical practice to be employed in the daily life, labor market, education and learning.

University compulsory requirements, 18 credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10032100	English 100	0	-
110001011	Islamic Education	3	-
110001021	Arabic Language	3	-
110001031	English Language 1	3	-
11000105	Palestinian Studies	3	-
110001081	Community Service	1	-
110001171	Leadership and Communication Skills	1	-
11000127	Introduction to Computer	1	-
110001231	English Language 2	3	-

Department Compulsory Requirements, 93 credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10306110	Writing 1	3	-
10306111	Reading 1	3	-
10306112	Advanced Grammar	3	-
10306113	Writing and research	3	10306110
10306114	Advanced Reading	3	10306111
10306115	English Language Grammar and Contexts	3	10306112
10306116	Introduction to Linguistics	3	-
10306117	Introduction to Literature	3	-
10306220	Phonology	3	10306116
10306221	Syntax	3	10306116
10306222	Poetry	3	10306117
10306223	Short Story	3	10306117
10306224	Conversation and Oral Comprehension	3	10306111
10306225	Drama	3	10306117
10306226	English Literature- Survey	3	10306223+10306222
10306227	Technical Writing	3	10306113
10306330	Semantics	3	03061161
10306331	Translation 1	3	0306330
10306332	Morphology	3	10306221
10306333	Phonetics	3	10306220
10306334	Pragmatics	3	10306330
10306335	American Literature - Survey	3	10306226
10306440	Shakespeare	3	10306225
10306441	Translation 2	3	10306331
10306442	Research Methodology	3	103062271
10306443	Methods in Teaching Literature	3	10306226 + 10306222 + 10306223
10306444	Literary Criticism	3	10306226
10306445	Novel	3	10306223
10306499	Graduation Project	3	10306442
10572314	Basic Principles in Teaching the English Language	3	10572314
10572403	Practical Training 1	3	10306220 +10306221

Elective Courses, 9 credit hours

The student should study 3 of the following courses:

Course No.	Course Title	Credit hrs.	Prerequisites
10306352	Autobiography	3	
10306353	Romantic Age	3	
10306315	Classical Myths	3	10306117
10306354	Contrastive Linguistics	3	10306333
10306355	Communication Across Cultures	3	10306224
10306356	British Literature in the 20th century	3	10306226
10306460	Discourse Analysis	3	10306330
10306461	American Literature in the 20th Century	3	10306335
10306462	Sociolinguistics	3	10306334
10306463	Psycholinguistics	3	10572314
10306464	Comparative Literature	3	10306226
10306465	History of the English Language	3	10306333
10306466	Schools of Linguistics	3	10306333
10306467	Special Topic in Literature	3	10306335+10306226
10572406	Practical Training 2	3	10572403

Free course- if found.

Compulsory free courses- 4 credit hours- (2 courses, 2 credit hours for each)

Course Descriptions

10306110 WRITING 1

This course begins with sentence review and then moves on to paragraphs. Students are trained to write an opening sentence, and to develop it into an interdependent paragraph using several methods. As part of this curriculum, they also are trained on writing an autobiography, an attached letter, and on conducting grammar audits. Furthermore, students are introduced to writing an essay at the end of the course.

10306111 READING 1

This course focuses on comprehension skills, such as assigning ideas and details, understanding the text, distinguishing between literal and non-literal translation, and developing summarization skills. The writing section of the book focuses on methods of note-taking, having sufficient vocabulary, filling out application forms, and writing summaries and advertisements. The grammar section tackles verbs, word formation and conditional sentences.

10306112 ADVANCED GRAMMAR

This course employs the eclectic approach to the study of grammar. It introduces students to advance and complex grammatical structures and systematically relates these structures to meanings, uses, and situations.

10306113 WRITING AND RESEARCH

This course begins with a review of the paragraph before it focuses on writing the essay. Students will read different kinds of essays: descriptive, comparative, definitive, persuasive and classification, and will learn how to write them. The emphasis will be on writing effective thesis statements, introductions, and conclusions, and on developing unified and coherent essays. They will also practice answering essay questions and writing about literary works. Furthermore, the course will introduce the research paper in the MLA and APA systems.

10306114 ADVANCED READING

This course is an extension of what was covered previously by using advanced strategies and techniques to help students develop their abilities in reading and thinking. Learners will identify the basic principles of reading and critical thinking; and they will analyze various texts to identify the facts and fallacies, allegations, assumptions and methods of debate, as it also makes learners

analyze the linguistic discourse and tackle the cognitive skills of analysis, assumption and evaluation. In addition, it includes activities that emphasize the importance of distinguishing the types of discourse and different texts. It should be noted that the course aims to develop students' vocabulary, and hence students use scientific materials such as books, newspapers, articles, novels, short stories, and poetic material. The learner will practice his/her ability in extraction, analysis, speed reading, comprehension, summarization and assimilation. Students will be given the chance to improve their reading abilities using writing, debate and oral reports.

10306115 ENGLISH LANGUAGE GRAMMAR AND CONTEXTS

This course introduces the English grammar rules with the aim of enabling students to develop their knowledge of English grammar on all levels, with a special focus on the first elementary stage, where they review and link construction and transformation rules, pedagogic language rules which will be addressed in the course to improve their capacity in dealing with students' problems with English grammar in writing and conversation. The course will cover grammar units in terms of correctness, acceptance, suitability, ambiguity, as well as practical grammatical analysis.

1036116 INTRODUCTION TO LINGUISTICS

This course is an introduction to the study of language, including the relationship with other branches of linguistics.

10306117 INTRODUCTION TO LITERATURE

This course is designed to introduce students to the different theories of the meaning of literature through the study of literary texts representing the literary analysis and elements of the different literary structures, such as the short story, the novel, the play and poetry.

10306220 PHONOLOGY

This course is designed to provide students with a description of the most important phonemes and their nature before they learn how to use the articulation organs along the audio channel used to produce the different sounds. This course is based on training students on hearing and pronunciation levels and how to produce distinguish and describe sounds.

10306221 SYNTAX

This course focuses on syntax, and the theoretical and applied aspects of modern English grammar analysis.

10306222 POETRY

This course provides students with an accurate analysis of the language of poetry and its stylistic properties through the study of a wide selection of all- times distinct English poetry. The poetic properties include construction,

rhetoric and prosody, the different sound tools used by poets to produce their creative images; the course also provides different poetic forms such as narrative poetry/epic, dramatic, lyric, elegy, monologue, sonnets, and other lyrical poems, as well as contemporary free verse.

10306223 SHORT STORY

This course introduces students to readings in the short novel literature in different time periods and various literary traditions. Students are trained on how to use the terminology in the literary and artistic analysis of selected short stories and writing about them. The course focuses on the 19th and 20th centuries' prominent writers.

10306224 CONVERSATION AND ORAL COMPREHENSION

This course aims to develop students' conversation and hearing skills, increase their English vocabularies, and train them on practicing the language.

Students are trained on using official and non-official English in different situations, as it also aims to achieve its goals through group activities, debates, giving examples, playing tapes, etc.

10306225 DRAMA

Students study the masterpieces of drama from the Grecian Era until the contemporary era, and it aims to help students understand the theatrical construction and social function of the theatre. It presents the works of writers such as Sophocles, Shakespeare, Shaw, Beckett, and others.

10306226 ENGLISH LITERATURE- SURVEY

The course helps students to configure a general picture of the development of English literature throughout time, especially the Renaissance Age in the context of the reciprocal relationship and dialecticism between the community and the circumstances in the broadest sense.

10306227 TECHNICAL WRITING

This course aims to train students on technical, literary and expressive writing through class and home writing. Students learn how to write letters, autobiographies, review books, reports, projects, essays, especially writing in literature: imagination, poetry, and theatre. It also focuses on training students on editing, reviewing and evaluating written texts in terms of content and form.

10306330 SEMANTICS

This course introduces students to the main concepts of semantics, such as pronunciation and meaning relationship, sentence meaning and pronunciation, and prepositions. Students also are introduced to the nature of logic and meanings of the moral aspect.

10306331 TRANSLATION 1

This course aims to train students to acquire the basic rules in translation in both Arabic and English. It provides them with sufficient training in Arabic-to-English translation, and in translating texts of various and different aspects, especially in the formation of speech parts, position of adjectives and nouns, etc. In addition, the course explores the impact of cultural difference in translation, and presents a summary on the theories of translation.

10306332 MORPHOLOGY

Morphology is described as a text in the internal structure of the word, including conventions, and compound words. The course focuses mainly on morphology in the English language, and addresses recent developments and theories regarding English in particular and international languages in general.

10306333 PHONETICS

This course is based on the development of theoretical concepts learned in earlier courses so that students become able to distinguish the sounds of English before they begin to analyze the other sound manifestations associated with the dynamic elements and how they are used in public discourse. These manifestations are represented with the analysis of accent, rhyme, and intonation, which enable students to do comparative studies to analyze systems and rules of sound that distinguish the English language generally and the different skills of English speakers.

10306334 PRAGMATICS

This course aims to introduce pragmatics, relying on the text and using the language as the most important elements of components and language understanding. It covers some important issues in pragmatics, such as the theory of actual speech, literature theory, and the procedural acts, and participation theory, along with introducing the role of culture in interpreting misunderstandings in the linguistic acts through the study of what is known today as pragmatics across cultures.

10306335 AMERICAN LITERATURE- SURVEY

This course covers American Literature: its forms, styles, techniques, subjects, and visions from Colonialism to the 20th Century.

10306440 SHAKESPEARE

This course is designed to deal with Shakespearean theatre, its techniques and methods, and its art's literary visions. The students study different patterns of plays which reflect the development of playwrights' techniques.

10306441 TRANSLATION 2

This course focuses on students' practical training on translation skills of various texts, especially those in relation with economics, business, and other

fields, and promotional materials. Students are trained on interpreting from Arabic to English and vice versa.

10306442 RESEARCH METHODOLOGY

This course focuses on critical thinking and teaching students how to write linguistic and literary research papers, and this is accomplished through selecting a topic, collecting information, reference and sources, and quoting and documentation inside the text. Students are introduced to the methods of designing questionnaires to collect information on the topic, doing interviews, other research tools, using the library and how to evaluate used references. Furthermore, the course includes 4 subjects in theoretical and applied linguistics, editing, history of literature, and literary criticism, along with the theory of literary criticism and the researcher's role in the community.

10306443 METHODS IN TEACHING LITERATURE

The course's theoretical section covers the various methods in teaching literature. However, the applied section focuses on designing class activities, tasks, and different discussions in full class sessions, which indicates students' knowledge on how to use literature as a main tool in teaching linguistic skills for English language students as a foreign language.

10306444 LITERARY CRITICISM

The course introduces literary criticism from Aristotle until the modern times, with the emphasis on modern critical theory and beyond. Students thoroughly read texts that represent classical theory, modern classical theory, and romantic classical theory and beyond. Furthermore, students study modern theories and more modern critical approaches, such as legendary, construction, deconstruction, psychoanalysis, Marxism, feminism, and post-colonialism theory. Students practice the application of these theories in analyzing and interpreting literary texts.

10306445 NOVEL

This course introduces readings in the English novel (the American and British in particular) and novels that have been translated into English. Thus, the course requires students to read regularly and constantly use classical measurements (high class) from the English novel and beyond, beginning with the 16th century until the electronic novel today. This course requires students to practice critical writing in what they read regularly, on the level of the paragraph, prose, and essay. The course has a creative aspiration as well, especially for gifted students or those who have an interest in novels. The course encourages students to write their stories from a realistic perspective, stimulating firstly, and finishing with genuine creativity; the latter takes the form of continuous work during the semester and finishes at the end of the semester.

10306499 GRADUATION PROJECT

This is a genuine research students do to prove their linguistic and cognitive knowledge, and it can indicate students' abilities in research problem-solving, data collection, analysis and conclusions. The graduates register in this course and choose research topics in any field of linguistics, literature or language, and then work under the supervision of their instructors to finish their research papers according to the principles and requirements of the scientific research.

10306351 AUTOBIOGRAPHY

This course addresses autobiography as a genre in both British and American literatures. Autobiography as an independent genre, therefore, is to be distinguished from the general autobiographical impulse that virtually many works of literature integrate. Simulated autobiography, however, is a popular device in fiction and some novels on occasion can be autobiographies in the guise of fiction. An ambitious syllabus of this course may trace the autobiography to its roots; Saint Augustine is considered the first biographer in English literature and Benjamin Franklin is the father of American autobiography. In 20th century literature, the art of biography gained momentum; there is an increased interest in the lives of celebrities and a genuine interest in the making of self-made women and men. It is always possible to compile a list of autobiographies that can be chronological representations of the development of autobiography as a genre and of different themes, devices, and features of autobiography as an art. Students are encouraged to read as many autobiographies as possible and to examine the common features of this genre with a critical eye on its different aspects.

10306460 DISCOURSE ANALYSIS

This course introduces students to the concept of discourse adopted by modern linguists as an alternative to the traditional unit of analysis, the isolated sentence. Thus, the course deals with the contextual features surrounding the communicative act, namely, the speaker/writer, the listener/reader and the topic. The issues to be addressed are the theme/rheme, assignment, the address terms, the familiar and formal levels of language used in addition to the distinct features of religious, political, feminist or sexist and leftist discourse, the social distance linguistic tools which reflect official and non-official language between the speaker and listener, diaries, and polite and friendly discourse; and the student studies the oral and written discourse and each one's tools.

10306352 ROMANTIC AGE

The topic of this course is the counter-revolt in aesthetics and vision of the late eighteenth and nineteenth centuries. Emphasis falls on poetry. The students is to read and analyze representative poems by Blake, Wordsworth,

Coleridge, Shelley, Keats, and Byron. The student will also be exposed to Romantic thought in other genres. This course also features a comparison between the of the romantic and the neo-classic thoughts.

10306461 AMERICAN LITERATURE 20TH CENTURY

This course is a readings course which aims at introducing some major 20th century American writers in the major genres: poetry, fiction, drama, biography and autobiography. The following writers are common choices in almost all syllabi: Robinson, Frost, Pound, Eliot, Cummings, Stevens, Williams, Lowell, Sexton, Plath, Hemingway, Faulkner, Steinbeck, Wright, Hughes, Ellison, Bellow, O'Neil, Tennessee Williams, Albee, and Baraka. Further, 20th century literature, especially the contemporary part, is marked with a mosaic of multiculturalism and ethnicity. Instructors may choose to include a diverse range of writers including African-Americans. In studying works by 20th century writers, students explore motifs, movements, impulses and trends that are uniquely modern.

10306462 SOCIOLINGUISTICS

The course studies the role and function of language in society and of language variation, introducing notions such as standard and nonstandard varieties, idiolect and dialect, bilingualism and diglossia, pidginization, and creolization, and language policy and planning.

10306463 PSYCHOLINGUISTICS

This course studies the relationship between language and the mind, dealing with perception, processing, language learning, and language acquisition universals.

10306464 COMPARATIVE LITERATURE

This course introduces students to different theories of comparative literature and gives them a chance to compare aspects of English and Arabic literary traditions. Using both cognitive/cultural approach and historical/contextual approach, students will trace the similarities and differences between these literary traditions. They will also deal with the issue of influence or impact, examining how one tradition borrows from, or reacts, to another.

10306465 HISTORY OF ENGLISH LANGUAGE

This course studies the introduction to the historical development of the English language, with a focus on sound and structural changes, vocabulary and meaning.

10306466 SCHOOLS OF LINGUISTICS

This course introduces students to the linguistic theory in general. It critically surveys the different theories in linguistics such as the traditional (including the Arabic linguistic tradition), historical, structural, functional, Firthian, and transformational generative theories.

10306353 CLASSICAL MYTHS

At the beginning, the course introduces the Greco-Roman and Biblical stories students need to understand the hints and references found in much Western literature, especially since the Renaissance Age. Then, the course moves on to address the motive's imaginative and artistic obsession in the writings of Renaissance cultural figures, such as: Erasmus, Dante, Machiavelli, Cervantes, Rabelais, and perhaps Petrarch, and Edmund Spenser, Shakespeare, and Milton, amongst others.

10306354 CONTRASTIVE LINGUISTICS

This course focuses on theory and application in the comparison between Arabic and English languages, studying learners' mistakes, including the problems of learning a foreign language.

10306355 COMMUNICATION ACROSS CULTURES

This course aims at giving students the chance to interact with cultural productions from different perspectives, including their political, social and economic environments, and helps them improve their analytical and critical skills in understanding the academic, cultural English texts, as it broadens their horizons. One of the essential assertions for the theory of culture is the intellectual trends that highlight a wide spread area of different materials, that can all be textual, and interpretable. This course includes some literary works, films, TV shows, photos, cartoon, articles, political discourses, and architectural designs. Thus, the course provides students with essential tools, and students are expected to write down their reviews on readings, and raising questions and discussing them in the classroom.

10306356 BRITISH ENGLISH IN THE 20TH CENTURY

This course firstly introduces students to the socio-politico-intellectual background out of which modern British literature emerged, to the aesthetics that govern its artistic output, and the environments in critical theory, and techniques that have been shaping British literature since World War II. Students then study and evaluate multi-genre masterpieces by trend-setting authors.

10306467 SPECIAL TOPIC IN LITERATURE

The course focuses on any literary figure, movement, or issue deemed significant by the instructor, especially in the beginning of the Western modernity era in the late 19th century and the 20th century.

Staff Members:

Name	Academic Rank	University of Graduation
Nabil Alawi	Associate Prof.	University of Tennessee at Knoxville, U.S.A
Fayez Aqel	Associate Prof.	State University of New York, U.S.A.
Odeh Odeh	Assistant Prof.	University of Southern Illinois at Carbondale, U.S.A
Ruqqayya Herzallah	Assistant Prof.	Cornell University, U.S.A
Sameer Al Issa	Assistant Prof.	University of Glasgow, Scotland, Britain
Abdel Karim Daraghmeh	Assistant Prof.	Southern Illinois University
Ayman Nazzal	Assistant Prof.	Albanian University, NY
Sufian Abu Arrah	Assistant Prof.	Free University of Brussels, Belgium
Abdel Kareem Igbaria	Assistant Prof.	Yarmouk University, Jordan
Lucy Perry	Instructor	Lancaster University
Sameer Mahmoud	Instructor	Michigan State University, Lansing, U.S.A.
Ekremah Shehab	Instructor	Yarmouk University
Iman Hammad	Instructor	University of Jordan, Jordan
Suha Jawabreh	Instructor	The School of Oriental and African Studies/London University

{ Department of French Language }
and Literature }

Vision:

The program vision aims at raising students' efficiency in French and preparing them to meet the needs of the local community and to continue their graduate studies by providing the necessary skills and knowledge and strengthening their capacities for critical thinking and independent work.

Mission:

This program aims at constantly providing extracurricular activities through workshops and seminars, which are held in the department during the academic year. The program's new vision lies in departments' integration and cooperation in order to improve students' efficiency in different fields. The Francophone Resource Center at the French Department aims at developing students' skills in learning and teaching French. The center is equipped with the most modern appliances, monitors and educational materials.

General Objectives:

The Department of French is constantly seeking to expand its majors, preparing qualified cadres who can apply modern teaching methods to serve the local community. It also aims at preparing students to practice the language in another domain, different from the traditional ones. These objectives are:

1. Preparing specialized translators.
2. Preparing French teachers to meet the schools' and the field work needs.
3. Enhancing An-Najah students' efficiencies in communicating in French for the sake of creativity, and working in a world that aspires to development.

Students Outcomes:

The project aims at achieving the following outcomes:

1. Improving the student's ability in critical and scientific thinking.
2. Improving the student's ability in work independence and scientific research.
3. Reinforcing communication and leadership skills.
4. Reinforcing students' translation skills.
5. Reinforcing comprehension and literary appreciation.
6. Raising students' efficiency in methods of teaching French for non-speakers.
7. Raising students' efficiency in comparative critical thinking between the living languages and Arabic language.
8. Reinforcing the cultural communication with other civilizations and bringing in what meets with the local community culture.

Local, regional, or international references in setting the teaching goals and outcomes (academic or vocational):

The Consulate General of France in Jerusalem provides technical and academic support for the Bachelor's program in the French Language.

The role of partners from outside the university in preparing the curricula (the private, service and governmental sectors):

The Consulate General in Jerusalem supervises the process of raising the level of teaching the French language, technically and academically; it offers a two-year contract teacher to assist in teaching the French language, and it holds regular meetings for the sake of unifying the competencies between universities that teach French.

The program is composed of 125 credit hours, distributed as indicated in the following table:

Specialization Requirements	Elective Requirements	University Requirements	Free Courses	Total
94	9	18	4	125

The Syntax 1 course was merged at a rate of 3 credit hours certified from the Department of Arabic language within the department's electives requirements.

Two French language courses will be merged in the other departments' curricula, so that the French language is introduced as an elective course and a free course.

Course Title	Course No.	Credit hrs.
French for Non- Majors 1	10311198	3
French for Non- Majors 2	10311199	3

University Compulsory Requirements

Course No.	Course Title	Credit hrs.
11000102	Arabic Language	3
11000101	Islamic Education	3
11000105	Palestinian Studies	3
11000103	University English 1	3
11000323	University English 2	3
11000108	Community Service	3
11000100	Introduction to Computer	1
11000117	Leadership and Communication Skills	1
	Total	18

University Elective Courses: The student chooses 4 credit hours of the courses that the university provides on a 2 hours rate.

Compulsory Courses

Course No.	Course Title	Credit hrs.	Prerequisites
1031110	Introduction to French Language	3	-
1031111	An Intensive Course in the French Language 1	3	-
1031112	An Intensive Course in the French Language 2	3	-
1031113	An Intensive Course in the French Language 3	3	1031112
1031114	Comprehension and Oral Expression 1	3	1031111 /1031112
1031115	Comprehension and Writing Expression 1	3	1031111+1031112
1031126	Comprehension and Oral Expression 2	3	1031114
1031127	Comprehension and Writing Expression 2	3	1031115
1031128	Advanced Syntax in the French Language	3	1031113
1031129	Learning Skills	3	1031114+1031115
1031120	Reading and Oral Comprehension 1	3	1031126+1031127
10311221	Advanced oral Expression 1	3	03112161+03112171
10311222	Advanced Writing Expression 1	3	03112161+03112171
10311323	Oral and Text Comprehension 2	3	03112201
10311324	Advanced oral Expression 2	3	03112211
10311325	Advanced Writing Expression 2	3	03112221
10311326	Introduction to French Literature	3	03112161+03112171
10311327	Phonetics	3	03112211
10311328	Introduction to Translation	3	03113231
10311329	Introduction to Linguistics	3	03113271
10311330	Excerpts in French Literature	3	03113261
10311331	Philology	3	03113231/03113251
10311332	Introduction to Scientific Research	3	03113231+03113251
10311433	French to Arabic Translation	3	03113281
10311434	Comparative Linguistics	3	03113291
10311435	Reading in the French Literature Text 1	3	03113301
10311436	Methods of Teaching French Language	3	10311323+03113241
10311437	Research Project	3	03113321
10311438	Arabic to French Translation	3	0311325/03114331
10311439	Introduction to Interpreting	3	03114331
10311440	Reading the French Text 2	3	03114351
10311441	Practical Training and Graduation Project	1	03114371

Elective Requirements

Course No.	Course Title	Credit hrs.	Prerequisites
10311250	Analysis of the French Culture	3	10311113
10311251	Skills for Taking Notes	3	10311219
10311252	Advanced Skills in Learning	3	10311219
10311353	Free Course	3	10311216 10311217
10311354	General History of France	3	10311220
10311355	Study of a Literary Movement	3	10311326
10301114	Syntax 1(Department of Arabic	3	-
10311456	Sociolinguistics	3	10311329
10311457	History of the French Language	3	10311329
10311458	Linguistic Changes in French Countries	3	10311327+10311329
10311459	Special Topic in Teaching the French Language	3	10311436

Course Description:

10311110 INTRODUCTION TO FRENCH LANGUAGE 1

This course is designed to introduce students to the French Language: simple sentences, nouns, articles, pronunciation and simple structures. The course focuses on the students four skills as it also introduces French grammar. The course follows the objectives of the DELF A1 examination using the book Echo A1.

10311111 AN INTENSIVE COURSE IN THE FRENCH LANGUAGE 1

This course aims at training students to comprehend short sentences used in daily life: introducing one's self, family, work, and the surrounding environment. The course focuses on the skills of oral expression and understanding, along with introducing French grammar. This course follows the objectives of DELF A1 examination using the book Echo A1.

10311112 AN INTENSIVE COURSE IN THE FRENCH LANGUAGE 2

This course covers how students talk about their hobbies, habits, memories, and other things. It aims at empowering students to write short messages, emails, and the like, and focuses on the writing skills and students' textual understanding along with French grammar. This course follows the objectives of the of DELF A1 examination using the book Echo A1.

By the end of the first semester, the objectives of DELF A1 level using the book Echo A1 should be fulfilled, i.e., 3 units of the book.

10311113 AN INTENSIVE COURSE IN THE FRENCH LANGUAGE 3

This course covers students' four skills and the French grammar rules. It also follows the objectives of DELF A2 using the book Echo A2. The instructor merges extracurricular activities that stimulate work independence and critical thinking in this course.

10311114 COMPREHENSION AND ORAL EXPRESSION 1

This course focuses on students' comprehension and oral expression skills and training them on talking about daily life and expressing their feelings, emotions, points of views, and having a conversation in a store or a train station and other places. The course aims at training students to comprehend the audio-visual short documents of the average level in daily life. The course follows the objectives of the of DELF A2 examination using the book Echo A2.

10311115 COMPREHENSION AND WRITING EXPRESSION 1

This course aims at improving textual comprehension and writing by training students to write short messages and diaries by narrating daily events in the surrounding environment. It also aims at training students to understand written texts, short messages, advertisements, declarations, and tourist guides and their content. This course follows the objectives of the DELF A2 examination using the book Echo A2.

By the end of the second semester, the objectives of DELF A2 level using the book Echo A2 should be fulfilled, i.e., 3 units of the book.

10311216 COMPREHENSION AND ORAL EXPRESSION 2

This course focuses on improving students' skills in conversation and oral comprehension. The course trains the students to orally express their opinions on several topics, discussing several issues related to their daily life, and narrating a story of a film they watched. It also aims at training students to watch TV shows, listen to radio programs and understand them. This course follows the objectives of the DELF A1 examination using the book Echo A1.

10311217 COMPREHENSION AND WRITING EXPRESSION 2

The course focuses on improving students' skills in texts' comprehension and writing. The course addresses how to write coherent texts, articles, and short messages that express their points of views. It also aims at training students to understand written texts such as: emails, brochures, articles and others and understanding their basic information. This course follows the objectives of the DEFL B1 examination using the book Echo B1.

10311218 ADVANCED SYNTAX IN THE FRENCH LANGUAGE

This course aims at introducing students to the methods of different times within the text and identifying the combinations of special complex in French language through using them and identifying them with different texts.

By the end of the first semester, the first volume of Echo B1, which is 3 units, should be finished.

10311219 LEARNING SKILLS

This course introduces students to the learning methods and effective high skills in learning French, especially those that help students learn independently. The most important skills students learn are: time management, assigning their needs, and taking notes from several sources (lectures, texts, the audio and visual resources, and others). It also focuses on training students in the process of identifying the main themes, secondary information, and drafting and rephrasing in their native language, along with the methods of researching and processing the information using the multimedia to improve

their language skills. In addition, the course covers how to enable students to evaluate the skills they acquire in the courses they study through posing a series of questions.

10311220 Reading and Oral Comprehension

This course focuses on training students on understanding correspondences, texts related to the general topics in daily life and understanding discussion methods in the text of the average level. In oral comprehension, the course focuses on understanding numbers, dates, instructions and oral messages, as it also deals with how to understand multiple topics dealing with analyzing and criticizing a film or a certain theme. The course follows the objectives of DELF B1 examination using the book Echo B1.

10311221 ADVANCED ORAL EXPRESSION

This course aims at training students to express themselves, their hobbies, habits and speaking on some specific details such as: watching a film, a personal experience, feelings, opinions, or attitudes with the ability to justifying their opinions. This course requires training students to present a certain topic, where they take into account the different times, and syntax taught. This course follows the objectives of DEFL B1 examination using the book Echo B1.

10311222 ADVANCED WRITING EXPRESSION

This course aims at training students on the advanced writing that includes writing about personal experiences, certain events, expressing their personal opinion on a particular topic, and writing a simple article and messages, with a focus on different times and the syntax structures taught. This course follows the DEFL B1 examination using the book Echo B1.

By the end of the second semester, the course should fulfill the DELF B1 level using the book Echo B1, which is 3 units of the book.

10311323 ORAL AND TEXTUAL COMPREHENSION

The course focuses on understanding multiple texts according to their types, and understanding the literary and poetry texts. In oral comprehension, the course focuses on bulletins, TV and radio programs, interviews, speeches and points of views, and others. This course follows the objectives of DELF B2 using the Echo B2 book.

10311324 ADVANCED ORAL EXPRESSION

The course aims at training students on basic conversation using styles of discussion and expression, expressing the point of views fluently on several topics including personal, professional and general topics. It also focuses on training students on the skills of oral rephrasing. The course follows the objectives of the DELF B2 examination using the Echo B2 book.

10311325 ADVANCED WRITING EXPRESSION

The course covers the advanced writing skills in writing clear and coherent texts, focusing on persuasive skills in writing, organizing ideas, writing an introduction and conclusion, the principles of writing reports, and how to use the right text links. The course follows the objectives of the DELF B2 examination using the Echo B2 book.

By the end of the first semester, student should finish the 4 units of the Echo B2 book.

10311326 INTRODUCTION TO FRENCH LITERATURE

This course is an introduction to French literature, highlighting a study of French literary excerpts from the 20th- 21st centuries. It aims at analyzing short literary compositions of this period of time and identifying special terminology in vocabulary and literary criticism.

10311327 PHONETICS

This course addresses the principles and terminology of phonetics in French, as it also focuses on writing sentences and words using the international phonetic alphabetic to illustrate their pronunciation. The course illustrates the French tonal system and the relationship of the tone of a sound with the meaning.

10311328 INTRODUCTION TO TRANSLATION

The course is an introduction to translation in French. It introduces students to translation terminologies, the history and importance of translation, tenses translation and synonyms. It also addresses learning how to form translated and computer typed pages.

10311329 INTRODUCTION TO LINGUISTICS

The course is a study of the basic linguistic theories; it introduces linguistics terminology, and is an introduction to linguistics.

10311330 EXCERPTS IN FRENCH LITERATURE

The course introduces general French literature excerpts from the Medieval Era and the 21st century. It aims at introducing students to the literary texts that represent this era and the others' culture, as it also works on building their literary sense.

10311331 PHILOLOGY

This course analyzes in-depth texts and their norms and different styles to ensure a better understanding of the nature of the text, as it also includes an analysis of sentences, paragraphs and texts through coherence and consistency. This course is followed with the objectives of the DELF C1 examination concerning text comprehension.

10311332 INTRODUCTION TO SCIENTIFIC RESEARCH

This course deals with the principles, foundations, methods and applications of scientific research. It also focuses on critical thinking and teaching students how to write research papers through deciding on the topic, collecting data, references, quoting, and documentation of the written text. Furthermore, the course focuses on how to design a survey to collect data, the subject of interviews, and the other research tools, how to use the library, and evaluate the sources and references used and benefit from them. This course is considered an introduction to the scientific research course. And it follows the objectives of the DELF C1 examination concerning writing the argumentative article and conclusion.

10311433 FRENCH-TO-ARABIC TRANSLATION

This course aims at training students on translating media and technical texts from French to Arabic; this aims at mastering the understanding of French paperwork. This gives students the chance to re-read their mother language in a foreign language. At the end of the semester, students present a translation of an advanced text they agreed on with their instructor.

10311434 COMPARATIVE LINGUISTICS

The course introduces an analytical, in-depth study of the French and Arabic language systems, through addressing the syntactic and phonetic aspects, translation and analysing mistakes. Students can make a comparison between the French, Arabic and English language systems.

10311435 READING IN THE FRENCH TEXT 1

This course is designed to introduce an analytical study of a full literary work or more that students read and discuss with the instructor during the semester. This reading is based on a play or a novel, with a focus on how to criticize a literary work; the methods of the literary appreciation such as: textual structures, main idea, themes, etc.

10311436 METHODS IN TEACHING FRENCH LANGUAGE

This course covers the methods and evolution of teaching French over time through addressing the language policy in France in terms of spreading the French language and culture in the world. It also focuses on the practical aspects of the teaching process of preparing the curriculum, analyzing teaching books, using different documents, evaluating the teaching process, and giving an extra lesson using the multimedia.

10311437 RESEARCH PROJECT

This course is a research project students prepare after choosing a particular theme in coordination with the course instructor in the area of language, literature, linguistics or teaching methods. This project demonstrates students' linguistic and cognitive development, and is an indication that they

are able to deal with the research problems, collecting and analyzing data and finding conclusions. The course instructor supervises this project according to the principles and analysis of scientific research and their requirements. The course is a practical application of the introduction to scientific research, and it follows the objectives of the DELF C1/ C2 examination.

10311438 ARABIC-TO-FRENCH TRANSLATION

This course aims at training students on translating media and technical texts from Arabic-to-French, and it is considered an advanced stage in writing expression, as it gives students the chance to think in their first language in light of the foreign language.

10311439 INTRODUCTION TO INTERPRETING

This course aims at introducing students to interpreting from and to French: reading translation and drafting in both languages.

10311440 READING THE FRENCH TEXT 2

This course is designed to introduce an analytical study of a full literary work or more that students read and discuss with the instructor during the semester such as a novel or a play. The course focuses on the comparative reading of the integration between the contemporary literary texts through the analytical study of the cultural, historical and linguistic aspects. In addition, it focuses on the importance of syntax and meaning in discourse analysis.

10311441 PRACTICAL TRAINING AND GRADUATION PROJECT

The course addresses students' practical training by sending them to local or international institutions for training in the fields of translation, teaching methods, linguistics or literature, and writing a graduation project on the topic they choose and discussing them with the course instructor. This course is linked to the research project course.

10311250 ANALYSIS OF THE FRENCH CULTURE

This course aims at analyzing different aspects of French daily life, civilization and culture, and learning multimedia special expressions such as: cinema and documentary shows, along with analyzing texts related to the French culture and history, as well as the remarkable historical events in the history of France.

10311251 SKILLS FOR TAKING NOTES

The course aims at training students to take notes from audio and visual documents. Students train for quickness in taking notes, understanding and drafting in their own language. This course combines focus, quickness, and linguistic phrasing.

10311252 LEARNING ADVANCED SKILL

This course introduces advanced skills to students. These skills focus on how to think, solve problems and manage time. This course complements to the

Learning Skills course, as students are prepared for independent learning, scientific research and self-evaluation.

10311353 FREE COURSE

This course introduces a special topic in one of the following topics: language, literature, translation, methods of teaching French, and comparative linguistics, that the instructor recommends an important course in meeting with students' needs. The instructor provides a full description of the course, content, objectives, and teaching outcomes so the courses of the same area don't repeat one another. The course aims at fulfilling students' needs and raising their level in the chosen topics.

10311354 GENERAL HISTORY OF FRANCE

This course presents an introduction in the general history of France and the remarkable historical events in the history of France.

10311355 STUDY OF A LITERARY MOVEMENT

This course is designed to introduce a study and analysis of a certain literary movement according to the age, such as: romanticism, naturalism, surrealism, etc.

10301114 SYNTAX 1 (DEPARTMENT OF ARABIC)

This course covers several theoretical topics such as: parts of speech, inflected and non-inflected speech, and it also applies syntactically to high linguistic texts.

10311456 SOCIOLINGUISTICS

This course addresses the emergence of sociolinguistics and the ideological trends and language function trying to determine the identity of these trends through their scientific and epistemological orientations and methods; in addition, it studies the problems of study and perception of the relationship between language and society. The course presents some concepts such as dialects, language duplication, or the use of two forms of the same language in the same community, and others.

10311457 HISTORY OF THE FRENCH LANGUAGE

This course gives an overview of the most important events in the history of French language development in the Medieval Age, the 18th century, and 19th century and until the beginning of the 20th century.

10311458 LINGUISTIC CHANGES IN FRANCOPHONE COUNTRIES

This course shows the multiple aspects of linguistic changes in Francophone countries such as Quebec and countries in Africa, and comparing them with France and the other Francophone countries. The student can conduct a comparative research between Francophone countries assigned under the instructor's supervision.

10311459 SPECIAL TOPIC IN TEACHING THE FRENCH LANGUAGE

This course addresses a specialized topic in modern methods in teaching the French Language for foreigners chosen by the course instructor. The course deals with the most important methods, how to adopt them, and their compatibility with the Palestinian educational environment. Furthermore, it aims at analyzing and comparing the ancient and modern French teaching books, as it also aims at introducing the various class methods and standards of evaluation. At the end of the course, the student gives a lesson on a topic s/he chooses with the instructor.

The Department Staff

Name	Academic Rank	University
Maha Atmeh	Assistant Prof.	University of Franche-Comté- France
Tharwat Hijawai	Assistant Prof.	University of Lille 3
Bilal Shafe'	Assistant Prof.	University of Franche-Comté- France
Laha Sama'neh	Instructor	University of Lyon 2
Yusri Abu Shareefa	Instructor	University of Rhine 2
Mahmoud Sa'adeh	Delegate	
Wasim Bishawi	Delegate	

{ Department of History }

Vision:

The Department of History's ambitious vision is a promising future where it has a distinguished rank among the departments in the world, enhanced with the university's vision and tireless efforts on reflecting excellence, creativity and delivering its message in serving science and knowledge and the progress of civilization.

Mission:

The Department of History mission is to achieve success and to receive respect and appreciation on all aspects (locally, regionally, and internationally), embodying the global philosophy it employs in studying history and scripts.

Objectives:

1. Preparing a generation of historians who are able to study history and script and writing it according to a scientific curriculum.
2. Contributing effectively in laying the foundations of the school subject in studying history and casting aside preconceived thoughts.
3. Preparing young cadres to ensure the development and prosperity of civilization, achieving sustainable development especially in the developing countries, first and foremost in the Arab world, including Palestine.
4. Contributing to the protection of human heritage, which is threatened by distortion, forgery, effacement and corruption.
5. Emphasizing the depth and generality of the spiritual message the Arab world embodies, including Palestine, as well as the objectives in spreading peace and love between among humankind.

Outcomes:

Graduating elite of scientific personnel trained on a great deal of science and knowledge, which qualify them to:

1. Study the past, understand the present, and shape the prospects of the future according to the most updated curricula in history.
2. Analyze, understand, and interpret things in light of the objective perspective.
3. Accept the opposing opinions.
4. Rely on them to confront challenges.
5. Initiate and develop voluntary work.
6. Carry the message of our fathers and grandfathers who provided the world with many of the pioneering achievements on the level of innovating the alphabets, delivering divine religions, the value of justice and the methods of correctness.

Course Outline:

Requirement	Credit hours
Department Compulsory Requirements	84
Department Elective Requirements	18
University Compulsory Requirements	18
Free Courses	6
Total	126

Department Requirements:

Department Compulsory Requirements (84) credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10321120	Introduction to Historiography	3	-
10321121	History of Ancient East	3	-
10321122	Pre- Islamic History of the Arabian Peninsula	3	-
10321123	History of Early Islam(Prophet's and Guided Caliphs' Era)	3	10321122
10321124	History of Umayyad Caliphate	3	10321123
10321125	History of Maghreb in the Islamic Era	3	-
10321126	History of Andalus	3	-
10321227	History of Abbasid Caliphate	3	10321124
10321228	Study in Sources	3	-
10321229	Methodology in Historical Research 1	3	10321228
10321230	History of Ayyubids and Mamlukes	3	-
10321231	Islamic political Thought	3	-
10321232	History of Europe in Medieval Ages	3	-
10321333	History of Crusades	3	-
10321335	History of Ottoman Caliphate	3	10321230
10321336	The European Renaissance Age	3	10321232
10321337	History of Modern World	3	10321336
10321338	Modern and Contemporary History of Arab East	3	10321335
10321339	Modern and Contemporary History of North Africa	3	10321335
10321440	Modern History of Palestine	3	-
10321441	Modern and Contemporary History of Jerusalem	3	-
10321442	History of Modern World	3	10321337
10321443	Contemporary History of Palestine	3	10321440
10321445	Methods of Teaching History	3	-
10321446	Practical Teaching	3	10321445
10321447	Methodology in Historical Research 2(Graduation Project)	3	10321228+10321229
10321155	History of Byzantine Empire	3	-
10321261	History of Fatimid State	3	-

Department Elective Requirements (18) credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10321150	Pre- Islamic Religions in the Arabian Peninsula	3	-
10321151	Special topic in the History of the Islamic Era	3	10321123
10321152	Special Topic in History and Civilization of Andalus	3	10321126
10321153	Islamic Conquest Movement	3	-
10321154	Special Topic in History and Civilization of Abbasid Caliphate	3	10321227
10321256	History of East Arab Countries	3	-
10321257	Seljuk History	3	-
10321258	Special Topic in History of Islamic Civilization	3	-
10321259	Islamic Sects(Parties)	3	-
10321260	History of Islamic Law	3	-
10321262	Special Topic in the Arab World Geography	3	-
10321363	Special Topic in History of Ottoman Empire	3	10321335
10321364	Egypt During Mohammad Ali's Family Era	3	-
10321365	Arab Country During Ottoman Era	3	-
10321366	African Studies	3	-
10321367	Modern and Contemporary History of Iran	3	-
10321368	History of Zionism	3	-
10321369	Geography of Historical Palestine	3	-
10321470	History of Modern Arabic Thought	3	-
10321471	Modern and Contemporary History of Arabian Peninsula	3	-
10321472	History of Modern Turkey	3	10321335
10321473	New World History(the Americans)	3	-
10321474	Modern and Contemporary History of Far East	3	-
10321475	Designing and Producing Teaching Aids	3	-
10321476	Political Parties in the Arab World	3	-
10321477	Liberation Movements in the Arab World	3	-
10321478	Historical Texts	3	-
10321444	Modern Issues	3	-
10321334	History of Islamic Systems	3	-

Course Description:

10321120 INTRODUCTION TO HISTORIOGRAPHY:

This course aims at introducing students to the following aspects:

The development in the concept of history of different nations; the importance and place of historiography among other sciences; the characteristics of the historian; the relationship of history with the other sciences; the knowledge of reading resources, historical references, and understanding and analyzing them, such as: documents, archives, memos, drawings, pictures, writings and antiquities of the human being; sources and references; the study, analysis, validation and criticism of historical resources; the knowledge of historical structures and rules, components, organization as well as the study of its relationship with the themes of: diligence, explanation, clarification, review of history' access to the different perspectives of the schools of thought in reading the historical events, such as: political, economic, social, and religious events' and drawing pictures of laws and trends that organized and activated these events and schools.

1032121 THE HISTORY OF ANCIENT EAST:

This course aims at studying the development of human life in the Ancient Near East region from the Old Stone Age up to late historical eras. The Ancient Near East will be studied from political, cultural, and intellectual aspects: instruments, writing, systems, architecture, arts and religions. This course will focus on the history of Ancient East countries, namely, Iraq, Egypt, and Syria, and will also examine the effects of these civilizations on human history.

10321122 PRE- ISLAMIC HISTORY OF ARABIAN PENINSULA

This course highlights the study of the sources related to Jahili and Arabian Peninsula history before Islam, Arab classes, geography of Arab lands, Yemen's old states, and the remaining states in the Arabian Peninsula before Islam: Qinda, Palmyra, Nabateans, Ghassasans, and Manathiras, and the tribal society in Hijjaz from all aspects.

10321123 THE HISTORY OF EARLY ISLAM(THE PROPHET'S AND THE GUIDED CALIPHS' ERA)

This course examines the call for Islam, its spread in Mecca and Medina, organization of the Muslim's state during the prophet's lifetime, the prophet's policy in spreading the Islamic call inside and outside the Hijjaz, apostasy and self-prophecy claim movements, the issue of the Prophet's succession, conquests during the Guided Caliphs' times, organizations of state governing

administration, financially, religiously, and militarily, as well as disagreements which emerged and their consequences.

10321124 THE HISTORY OF Umayyad CALIPHATE

This course highlights a number of topics: establishment of the Umayyad dynasty, development of the caliphate system during the Umayyad period, the Umayyads' policy in fostering their authority, the Umayyads' position towards the Islamic sects, namely, Al- Khawarij and the Shiites; the Mawali movements, Islamic conquests during the Umayyad caliphs' times, government and administrative systems, the characteristics of civilization during the rule of the Umayyad period.

10321125 THE HISTORY OF THE MAGHREB IN THE ISLAMIC ERA

This course tackles the conditions of the Maghreb in terms of: the geographical location, nature terrain, the political conditions before the Islamic conquest, and then the stages of Islamic conquest during the First Hijri Century (AH), the state of affairs in the Maghreb during the Umayyads' and Abbasids' periods (Caliphs' Era) until the second half of the second hijri century, in addition to the independent states in the Maghreb, such as the Rustamid dynasty, Aghlabids, Fatimid Caliphate, Almoravid dynasty and Almohad Caliphate, and the estates which were established on the Almohad remains until the emergence of the Ottomans in the Meghreb at the beginning of the 10th (AH), along with the most important aspects of the Islamic civilization in the Maghreb.

10321126 THE HISTORY OF ANDALUS

This course covers the conditions of the Iberian Peninsula where it highlights the geographical location, nature and terrain, Gothic political conditions such as Islamic conquest, and then the stages of Islamic conquest during the period between 92-95 (AH), the age of Arab governors and stability in Andalusia (95- 138 AH), the principality and succession of Umayyad Caliphate (138-407AH), the age of the kings of the kingdom of Granada, the Reconquista (reconquest) until the years 897AH, and the most important manifestations of the Andalusian civilization.

10321227 HISTORY OF ABBASID CALIPHATE

The course investigates the organization of Da'wa (call) for the House of the Prophet, and the establishment of the Abbasid caliphate. In addition, the course is a brief study of caliphs in the first Abbasid age, Abbasid caliphs' home policy toward the Alawis, Mawalis, Shu'biyyah, Baramika, the Arabs, etc. The course also looks at the Abbasids' foreign policy towards the Byzantine and Holy Roman Empires, the Maghreb and Andalus, etc. It will also shed light on the emergence of semi-independent Muslim states, the age of the 'Turks' dominance, systems of government, and aspects of civilization during the Abbasid caliphs.

10321228 A STUDY IN SOURCES

This is a study of historical Arab sources of different periods. The course highlights the sources of history of the Arabs before Islam. It also explains the beginning of historical writings and the impact of Islam in their emergence. The course, moreover, investigates historical sources belonging to senior historians from the 3rd – 9th centuries of Hijri. The course also aims at training students on how to read selected texts, extracted from these sources. Students will also learn how to analyze and interpret them from historical, intellectual and methodological perspectives. They will also be introduced to historians' and narrators' methods and their purposes in writing history and the factors surrounding their writing.

10321229 METHODOLOGY IN HISTORICAL SCIENTIFIC RESEARCH 1

This course aims to introduce students to the following topics:

The criteria used in selecting the title and theme of the research, types of sources and references related to the topic of the research paper and types of the reading: reading reconnaissance, intensive reading, and the foundations, criticism and analysis of the historical texts and the steps to configure a research plan. The course also aims at training at using the scientific cards, how to transfer information to these cards and foundations of the scientific research and scientific documentation schools, and the list of resources and references, as well as the arrangement and study of elements of historical research. Finally, the student will present a research paper based on the theoretical criteria studied, and this paper will be discussed with the course instructor.

10321230 THE HISTORY OF AYYUBIDS AND MAMLUKES

This course aims at identifying the sources and references on the history of the Ayyubids and Mamlukes, the conditions of life in the Muslim East before the establishment of the Ayyubid state in Iraq, Greater Syria and Egypt. It also dwells on international policy, Moguls' and Franks' dangers, the Ayyubids' foreign relations with some Muslim countries, economic life (agriculture, industry and trade), feudalism in all its forms, systems of government, and aspects of civilization.

10321231 ISLAMIC POLITICAL THOUGHT

This course introduces sources and references on political Islamic thought. The course is also a preliminary study of all aspects of thought among Arabs before Islam. It is also a brief study of thoughts of peoples neighboring the Arabs such as the Persians. It also addresses a detailed study of some aspects of political, economic, social, military and religious Islamic thought and some contemporary peoples' thoughts at the time. At the end, the course will highlight characteristics of Islamic thought and ways of dealing with religion.

10321232 THE HISTORY OF EUROPE IN THE MEDIEVAL AGES

This course is a study of the history of the Roman Empire, the Barbaric invasions and the establishment of German mini-states, spread of Christianity in Europe, emergence of the church/monastery movement, and the nature of relations that prevailed between the papal institutions ruling the political foundations in Europe. The course also highlights the feudal systems and governance, the emergence of constitutional movement in England and strengthening the properties in various states of Europe, the manifestations of Europe's transition from the Medieval Ages to the Modern Ages since the 13th century and until the beginning of Renaissance.

10321333 THE HISTORY OF THE CRUSADES

This course covers the relations between Muslims and the Western Europe since the emergence of Islam until the declaration of the Crusades against the Islamic countries of the Near East in 1095, and the conditions of the Islamic East and Western Europe countries, before the beginning of the Crusades campaigns, such as: causes and motives, nature and objectives, and proceedings, and the United Arab Emirates that emerged from in the countries of the Near East, and the role of the various Islamic parties in the defeating the crusaders until the year 1291 and the Crusades impact and consequences on Europe and the Islamic World on all aspects.

10321335 THE HISTORY OF THE OTTOMAN CALIPHATE

This course aims at identifying the manner of the establishment of the Ottoman caliphate, and the key institutions: Sultanate, the Sublime Porte, Daftar khana (public records office), Daftar Daryah, Inkishariyya (janissaries), Islamic ulema (Scholars), and the judiciary system. The course also examines Ottoman – Safawi relations, Ottoman- Mamluke relations, and Ottoman – European relations until the end of the Ottoman Empire in 1918, and the beginning of the Tanzimat.

10321336 THE EUROPEAN RENAISSANCE AGE

This course covers the definition of the European Renaissance in terms of its spatial and temporal locality, the manifestations of Europe's transfer from the Middle Ages to the renaissance, the states and entities of Renaissance, the Italian wars from 1494- 1559, the European Portuguese, Spanish, Dutch, French, and English geographical explorations and their results. In addition, the course highlights the manifestations of the intellectual, religious, scientific, and technical renaissance and their impact on Europe and the world.

10321337 THE HISTORY OF THE MODERN WORLD

This course is a study of Western cultural landmarks starting from the European Renaissance Age up to the outbreak of the First World War, the French and American revolutions, the emergence of the Industrial Revolution in Europe and European national movements.

10321338 MODERN AND CONTEMPORARY HISTORY OF THE ARAB EAST

This course addresses the modern and contemporary history of the Asian Wing of the Arab World between 1516 and up to the present time, and focuses on the Ottoman rule between 1516- 1918, the establishment of the nation state after the year 1918, and the economic, social, and political transformations in light of the Colonial Rivalry, the Cold War and New World Order.

10321339 MODERN AND CONTEMPORARY HISTORY OF NORTH AFRICA

The aim of this course is to shed the light on the modern and contemporary history of the Arab World Asian Wing between the year 1492 until the present time, with a special focus on the struggle with the Spanish and Portuguese after the Arabs left Andalus and it joined the Ottoman state, the colonial infiltration in its regions in the 19th century, and national movements and establishment of the nation state and its economic, social and political transformations.

10321440 THE HISTORY OF MODERN PALESTINE

This course is a study of history of modern Palestine since it joined the Ottoman rule in 1516 until its end during the proceedings of First World War 1918, and focuses on the economic, social and political transformations that afflicted it, for example, the emergence of the powerful local leaderships and their relations with the with the ottoman local ruling bodies and their internal and external economic activities, foreign penetration and the official and popular reactions.

10321441 MODERN AND CONTEMPORARY HISTORY OF JERUSALEM

This course aims to shed light on the modern and contemporary economic, social and political history of Jerusalem since it followed the Ottoman rule in 1516 until present time and passing through the British mandate, the Jordanian Occupation and the Israeli Occupation.

10321442 THE HISTORY OF THE MODERN WORLD

This course addresses the 20th century landmarks until the beginning of the Second World War, the proceedings of the Second World War, the emergence of the Western and Eastern colonies, the Non-Aligned Movement, and the international crises following up with the current events internationally.

10321443 THE CONTEMPORARY HISTORY OF PALESTINE

This course covers the developments in the contemporary history of Palestine since the end of the Ottoman rule in Palestine in 1918 up to the present time, and focuses on the policy and opposition of the British Mandate of the issues of: migration, land purchase, the activity of the Palestinian National Movement, the 1948 Nakba, the establishment of the Palestinian Liberation Organization in 1964, the 1967 Setback, the Palestinian peoples' defiance of the policies of Annexation, Judaization of Jerusalem, and settlements, and

the establishment of the Palestinian National Authority and the economic, social and political changes.

10321445 METHODS OF TEACHING HISTORY

This course addresses the definitions of social sciences, the characteristics of the horizontal and categorical good program in social sciences, the educational goals, the content of the social sciences curriculum in terms of: concepts, facts, generalizations, theories, educational expertise, or the activities and linking this all to the upper stage of social sciences curriculum, as well as implementing a lesson on techniques that is integrated with the elements of the lesson, and its implementation steps.

10321446 PRACTICAL TEACHING

This course aims at training students on preparing the history curriculums for the elementary and secondary education, and implementing them locally in one of Nablus' schools, villages and neighboring camps under the supervision of the course instructor and the follow up of the school principality and the co worker.

10321447 METHODOLOGY IN HISTORICAL RESEARCH 2 GRADUATION PROJECT:

Under the supervision of his/ her course instructor, the student prepares scientific research based on the foundations, rules and material s/ he studied in the Bachelor's Degree. The research is presented to a specialized scientific committee that discusses the research steps, content and details.

10321155 HISTORY OF THE BYZANTIUM STATE

This course covers the introduction of the Roman Empire, its strengths and weaknesses, a preliminary study of the emergence of the Byzantium Empire in the beginning of the fourth century AD and the city of Constantinople by Emperor Constantine I, founder of the empire, the interior administrative, social, economic and religious policy, the foreign affairs with various parties, especially the Islamic ones, the vulnerabilities that occurred since the 11th century until its disappearance by the Ottomans in the year 1453, as well as the most important manifestations of the Byzantium civilization.

10321261 HISTORY OF FATIMID STATE

This is a preliminary study of the organization of the Ismailite call, establishment of the caliphate in the Maghreb region, the movement of the Fatimid caliphate to Egypt, political, religious movements, foreign and home policies, the impact of competition on ethnic, tribal, religious and political conditions before the sovereignty of ministers, spread of Fatimid outside Egypt, the disappearance of Fatimid state, and the manifestations of civilization.

10321444 CONTEMPORARY ISSUES

This course examines one or more than one contemporary issues such as Orientalism, Despotism, Terrorism, Intifada, or even the Contemporary Islamic Movements, etc, and it sheds lights on these issues through study, analysis and comparison.

10321334 THE HISTORY OF ISLAMIC SYSTEMS

This course covers the history of systems and in terms of contents and evolutions in the Islamic State and its role in the economic, social and political life such as the system of succession, the ministry, the judiciary, the mail, the army, and Hisbah enjoining (good and forbidding wrong).

10321150 PRE- ISLAMIC RELIGIONS IN THE ARABIAN PENINSULA

This course is a study of the relationships between religions of the Arabian Peninsula, with the religions in other surrounding regions such as South Asia, Greater Syria, Egypt, and Iraq. It also dwells on the idolaters' religions, such as: worship of idols, idols, celestial stars, and Mazdaism, idolaters' rituals and rites. The course also deals with monotheistic religions, Christianity and Judaism and their relationship with Byzantium, and Sasaan's desires to control the lands of the Arabs, Al- Hannifiyy al – Ibrahimiyah, pilgrimage system and emergence of Islam, sources and references on religions before Islam.

10321151 SPECIAL TOPICS IN THE HISTORY OF THE ISLAMIC ERA

This course aims to address a particular topic in the period of creation and evolution, and a detailed study through the old and new references. The addresses should be of importance to Islamic thought, such as the concepts of migration, Jihad, the crisis of the early caliphate, Shura (Consultation), office of tender, and the first Fitna (internal fighting).

10321152 SPECIAL TOPICS IN THE HISTORY AND CIVILIZATION OF ANDALUS

This is a detailed in-depth study of a specific topic related to the history of Andalus or its culture. Topics may include the history of Christian Mamlukes in the Iberian Peninsula during the Islamic rule, or it traces the history of Reconquista Christian movement against the Islamic presence in Andalusia, or the internal or foreign Andalusian policy during a specific historical era, the study of one of the aspects of civilization or the study of one of a specific period of time in a detailed and analytical way that covers all aspects.

10321153 ISLAMIC CONQUESTS

This course investigates the objectives that the Islamic movement came up with and sought to achieve political and religious unification of the Arabian Peninsula, and the introduction of Islam abroad. The course also raises the concept of the holy war movement in Islamic thought, reasons behind conquests, their organizations, their modes of action and their results. The course also considers orientalist's interpretation of these conquests. The course also offers some sources and references on Islamic conquest movement.

10321154 SPECIAL TOPIC IN THE HISTORY OF THE ABBASID STATE

This course investigates a specific topic in the history of the Abbasid state, and studies it in a methodological way, taking into account all that has been addressed in the old and new references. It is preferable that the addressed topic plays the role in creating the Islamic thought after that, such as the plight of Ibn Hanbal, the disappearance of the twelfth Shiite Imam, military feudalism, the Abbasid da'wa (call), and the struggle over power between Al-Ma'mun and Al-Ameen, the intellectual, literature and economic debates, etc.

10321256 HISTORY OF THE ISLAMIC FAR EAST

The aim of this course is to introduce students to the Islamic countries in the Islamic East in Khorasan and Sistan, Transoxiana and the India and the establishment conditions and prosperity, and the relations with the Abbasid caliphate in Baghdad and the factors that led to its fall.

10321257 SELJUK HISTORY

This course addresses the conditions of the Far East Islamic and the Transoxiana countries before the emergence of the Seljuks, and the Seljuke and Ghaznavids struggle and the establishment of the Seljuk state in 492 AH-1037. It also covers the Seljuk's domination over Persia, Iraq and Greater Syria during the dominion of the Sultans, and the Seljuk relations with the different regional and international parties on all aspects until the year 485 AH-1092, in addition, the course studies the aspects of the Seljuki civilization.

10321258 SPECIAL TOPIC IN HISTORY OF ISLAMIC CULTURE

This course focuses on addressing in details one aspect of the history of the Islamic civilization, such as: the intellectual, or scientific, or social or political aspect.

10321259 ISLAMIC SECTS(PARTIES)

This course aims at studying the social, economic, intellectual and political developments that had accompanied the establishment of the state of Islam. The course also focuses on the division of the Umma (nation) among itself in the events of the first Fitna (internal fighting) between 30- 40 Hijra. The course also sheds the light on the crystallization of the notion of state (Ahl al-Jama'a) the emergence of sects or political or religious oppositions of Al-Khwarj, Shiites, Qadariyyah, al-Mu'tazilah, etc.). In this respect, the course will show the opposition parties' opinions towards economic, social, and political issues and the state's position towards these opinions. The student will be introduced to sources and references on Islamic sects.

10321260 HISTORY OF ISLAMIC LAW

This course aims at studying the judiciary institution in the Islamic state, in terms of the emergence, development, role in the public life and relations with

the Caliphate and the executive government and community on the one hand, and the most important departments, such as: the Qadi, and Ombudsman.

10321262 SPECIAL TOPIC IN THE GEOGRAPHY OF THE ISLAMIC WORLD

The human beings activities in geography had since along ago been linked to the human history, and this applies to the Islamic world, where the diversity of nature terrains and climate in the Islamic world can be noticed. The teacher chooses a particular topic such as climate, mountains, desert and countryside, or the sea. Then, it examines this topic integratively, so as to illustrate the relationship between the Islamic history and this subject.

10321363 SPECIAL TOPIC IN THE HISTORY OF THE OTTOMAN

This course focuses on one aspect of the Ottoman economic, political, and social history, such as: army, taxes, handicrafts, agriculture trade, Tanzimat, reformations, the separatists' movements, and the First World War.

10321364 EGYPT DURING MOHAMMAD ALI'S FAMILY ERA

This course is a study of conditions and factors which had led to Ali's takeover of power in Egypt, Mohammad Ali's internal policy, his reformation and revival of state, his relations with the Mamlukes as well as the Azhar ulema (religious scholars), and the Egyptian people. The course also dwells on his foreign policy (expansion), his relations with the Ottoman Empire and with the European countries; Mohammad Ali's successors in Egypt and their internal and external policies, foreign influences in Egypt, British Occupation of Egypt in 1882; Egyptian people's struggle, the palace's policy and the political parties and the events leading to the 1952 revolution of the Free Officers.

10321365 ARAB COUNTRY IN THE OTTOMAN ERA

This is an in-depth and detailed study of an Arab country such as Syria, Palestine, Lebanon, Egypt, or the Arabian Peninsula. The study tackles the characteristics of the Ottoman administration, and its development, the Ottoman's military, security, judiciary and financial apparatuses.

10321366 AFRICAN STUDIES

This course addresses the history of the African continent as one unit in the modern era, and its economic, social and political relationships with the outside world in general and the European continent in particular, especially since the eruption of the geographical discoveries to the present time, passing through the movement of colonialism rebirth, independence and resistance of racial discrimination.

10321367 MODERN AND CONTEMPORARY HISTORY OF IRAN 1500- 1980

Topics covered in this course are the following: establishment of the Safawi state, nature of expansionist and religious struggle between Safawis and the

Ottomans, superpower countries' interests in strategic location of Iran during the 19th century. These countries were mainly France, Russia, and England; Iran during the First and Second World Wars, Iran during the Bahlawi dynasty and the roots of the Iraqi- Iranian border dispute.

10321368 HISTORY OF ZIONISM

The aim of this course is to define the outsourcing and references relating to the Zionism, a preliminary study summary of the history of the old Judaism until modern times, and the history of the Jews in Europe since the Renaissance from all political, economic, social, scientific aspects, and the history and activity of the Jews in America, and the study of the circumstances and factors that produced the Zionist thought, along with a detailed study on the Zionist movement and activity of all aspects of the Western countries, and cooperation with the Jews in the establishment of a national homeland in Palestine, and the Arab and Islamic countries.

10321369 GEOGRAPHY OF HISTORICAL PALESTINE

The aim of this course is to study and analyze the geography of historical Palestine through the ages and its impact on the development of its cultural civilization and focuses on the names of its terrain and the established cities and villages, castles, fortresses and pools, wells and springs, and ports and the succeeding tribes and nations of conquerors and invaders and the administrative divisions and formations which were organized.

10321470 HISTORY OF MODERN ARABIC THOUGHT

The purpose of this course is to study the modern (European) intellectual trends and Arabs' intellectual trends in particular. The course begins with an examination of the factors behind European Renaissance from 16th-19th centuries. The course looks closely at the factors behind the intellectual renaissance in the Arab world, namely, it provides a study of the religious trends and movements, such as Salafiyah (Islamic reform movement), and Modernism, political trends such as Islamic League, the national, regional and pan- Arabism movements, social factors, underdevelopment and its underlying causes, social justices, freedom, and equality.

10321471 MODERN AND CONTEMPORARY HISTORY OF ARABIAN PENINSULA

This course covers the study and analysis of the history of the modern and contemporary Arabian Peninsula since the entry of the Ottoman rule to Hejaz in 1517 and up to the present time, and focuses on the economic, social and political living during the Ottoman rule, the Portuguese colonial and English penetration in its coasts and the establishment of the first, second, and third Saudi Arabia's states, and Independence of Gulf emirates, as well as the prosperity of Oil in the twentieth century.

10321472 HISTORY OF MODERN TURKEY

This course is the study and analysis of the contemporary history of Turkey since the establishment of the Turkish Republic in 1924 to the present time, and focuses on the economic, social and political systems and relations in the world, including the Arab neighboring countries.

10321473 NEW WORLD HISTORY (THE AMERICANS)

The aim of this course is to study the new world history (Northern and Southern American) since the arrival of European explorers until the present time and focuses on the movement of geographical discovery and establishing settlements, and the war of independence, liberation movements in South America, and the role of the United States in the World War.

10321474 MODERN AND CONTEMPORARY HISTORY OF FAR EAST

This course covers the study and analysis of modern and contemporary history of the Far East and focuses on Japan's Revival, European colonialism in Southeast Asia and China, the Russian, Chinese, and Japanese relations, and their role in the two world wars, the revolution of China, resistance in the Vietnam war, industrial progress in Japan, economic boom in China, and the Arab and the Far East.

10321475 DESIGNING AND PRODUCING TEACHING AIDS

The aim of this course to introduce students to the concept of educational aids, their structures, constituents, sources, types and methods of design, preparation of the samples, miniatures, maps, devices, and the foundations of application in the various educational processes.

10321476 POLITICAL PARTIES IN THE ARAB WORLD

The aim of this course is to study the conditions of the Arab state in the late Ottoman era, the rise of political parties: "factors and causes, and the impact of the European Thought, and the principles and objectives, the ways and means, and practices and achievements." It also implements a compared study of the political, religious and military parties, the impact of parties on the Arab peoples from all aspects, and Arab states and regulations of Arab parties.

103211477 LIBERATION MOVEMENTS IN THE ARAB WORLD

The aim of this course is to study and analyze the modern and contemporary Arab liberation movements in facing the invasion and colonial expansion beginning with the Algerian revolution against French colonization in 1931, and ending with the Iraqi resistance against the US occupation and the Palestinian resistance in 2003 against the Israeli occupation. The course also focuses on the role of the political elites, national associations and political parties, factions and leaders, military operations and the support of the peoples and friendly governments and States, the political presence

in international bodies like the United Nations, the Arab League, the Non-Aligned Movement, and the OAU (Organization of African Unity), and the organization of Islamic work.

10321478 HISTORICAL TEXTS

This course is designed to make students master the following subjects: the foundations of reading and understanding various historical texts, analyzing and criticizing them, student training on the processing scientific texts selected from: documents, archives, sources, and reference, and the study on the impact of political, economic, social, religious, and literary schools on the historical texts.

Faculty Members:

Name	Rank	University
Por. Jamal Judeh	Professor	University of Tübingen/ Germany
Dr. Adnan Melhim	Associate Pro.	University of Jordan/ Jordan
Dr. Mohammad Khateeb	Assistant Prof.	Yarmouk University
Dr. Amer Qubbaj	Assistant	Alexandria University/ Egypt
Dr. Wael Obeid	Assistant	University of Jordan/ Jordan
Dr. Ameen Abu Bakir	Assistant	University of Jordan/ Jordan
Mahmoud Ka'abned	Instructor	An Najah University/ Nablus

{ Department of Tourism and Archeology }

Vision:

The program aims at achieving excellence in educating students and spreading awareness in the community at large regarding Palestine's archeology and promoting its importance to Palestinian culture and tourism.

Mission:

The Department is looking forward to playing an effective role in activating tourism locally and internationally through the renovation of archeological sites, establishing museums, providing the local market with qualified graduates in their specialization, and building bridges of cooperation and communication with other departments in local and neighboring universities. All of this work maintains an emphasis on upholding historical roots and the national identity.

Objectives:

Providing the relevant sectors and institutions - such as the Ministry of Higher Education, Ministry of Tourism and Archeology, Tourism Police, and travel and tourism offices - with a qualified scientific cadre that will contribute in meeting the community's needs and developing it to meet the highest standards in Tourism and Archeology.

Introducing distinguished education in the fields of tourism and archeology, enhanced with scientific research in order to serve the needs of the Palestinian community.

Introducing students to the modern scientific aids and techniques manifested in the fields of tourism and archeology in order to keep up with technological development.

Opening prospects for cooperation with the national and international institutions to renovate and develop archeological sites and invest them in the field of tourism.

Student Outcomes:

The student should be able to:

1. Work in Tourism offices, reservations and companies.
2. Enroll and supervise archeological excavations.
3. Contribute effectively as tourist guides to activate the local market on the one hand, and spread awareness in the public on the other.
4. Participate in developing and managing tourist and archeological sites.
5. Embed the national spirit in students' hearts through the courses that address Palestinian cultural heritage.
6. Understand, analyze, conclude and link the past with the present.

Requirement	Credit hours
Department Compulsory Requirements	84
Department Elective Requirements	18
Free Courses	6
University Requirements	18
Total	126

Department Requirements:

Departments Compulsory Requirements: 84 credit hours.

Course No.	Course Title	Credit hrs.	Prerequisites
10316110	Introduction to Archeology	3	-
10316111	*Introduction to Tourism	3	
10316112	Introduction to History of Ancient Civilization	3	-
10316113	Folklore and Palestinian Heritage	3	-
10316114	History of Ancient Palestine and Jordan in the Old Ages	3	-
10316220	Tourism Planning	3	-
10316221	Management of Archeological and Tourist Sites	3	-
10316222	Tourism in Palestine	3	10316111
10316223	*Introduction to Islamic Archeology	3	-
10316224	Islamic Arts	3	-
10316225	*Greek Archaeology	3	-
10316226	Byzantium Antiquities	3	10316225
10316227	Research Methodology	3	-
10316330	Old Pottery	3	-
10316331	Hotel Industry	3	-
10316332	Islamic Architecture	3	10316223
10316333	Museum Art	3	-
10316334	Coins	3	-
10316335	Tourism and Hotel Marketing	3	-
10316336	*Tourism in English	3	-
10316337	Old Language	3	-
10316440	History and Archaeologies of Jerusalem	3	-
10316441	Special Topic in Tourism	3	-
10316442	Tourist Guiding	3	10316336
10316443	*Tourism Offices and Reservations (Theoretical and Practical) in the English Language	3	-
10316444	Field Training in Tourism(60 Practical Hours)	3	10316443
10316445	Special Topic in Palestine Archeology	3	-
10316446	Archeological Field training (100 practical hours)	3	Summer Semester

Department Elective Requirements: 18 credit hours

Course No.	Course Title	Credit hrs.	Prerequisites
10301116	Hebrew 1/ Tourism	3	-
10301160	Hebrew 2/ Tourism	3	-
10311198	French for non-majors/ 1	3	-
10311299	French for non-majors/ 2	3	-
10316250	Laws and Legislation to protect Antiquities	3	-
10316251	Greater Syria's Ancient Antiquities and History	3	-
10316252	Nabateans	3	-
10316253	Tourism Communication Skills	3	-
10316360	History and Antiquities of the Arabian Peninsula	3	-
10316361	Origin and Development of Arabic Calligraphy	3	-
10316362	Hotels' Management	3	-
10316363	Islamic Photography	3	-
10316364	Architecture in the Ancient Near East	3	-
10316365	Tourism Information Systems	3	-
10316470	Maintenance and Renovation of Archeological Sites	3	-
10316471	Ancient Decorations and Inscriptions	3	-
10316472	Technology in the Old Ages	3	-
10316473	Tourism and Hotel Services	3	-

*Prerequisites

Note: the student is allowed to study one language accreditation in the levels (1, 2)

Course Description:

10316110 INTRODUCTION TO ARCHEOLOGY

This course aims at introducing students to archeology, the research on the origins of civilizations, the history of archeology in Palestine, the role of the western archeological schools and institutions in setting the theoretical and practical curricula of study, the relationship of archeology with the other sciences, the manifestation of the importance of pottery in the archeological studies, the types of archeological sites, methods of archeological sites discovery, the recording of archeological ruins, methods of excavation, the methods of interpreting the archeological evidences, and the exploration body. The study includes visiting some archeological sites.

10316111 INTRODUCTION TO TOURISM

This course aims at introducing students to tourism, its relationship with the other sciences, alongside with the introduction to the types of tourism, and its role and importance in moving the economy and the states' national income, especially in the field of tourism.

10316112 INTRODUCTION TO THE HISTORY OF ANCIENT CIVILIZATION

This course covers the study of the Ancient East, concerning the exposure to states and kingdoms established in the Ancient East, and their relationship with each other, politically and culturally. In addition, the course introduces the most important urban centers in the region of the Ancient East, and human beings' contribution in human civilization in the region in general.

10316113 FOLKLORE AND PALESTINIAN HERITAGE

The main goal of this course is to introduce the concept of popular heritage in its multiple forms, where it addresses various world cultures models on dress, housing, industries, adornments, and ornaments, along with the various models of folkloric literature, types of games and the amenities of spending leisure time.

10316114 HISTORY OF ANCIENT PALESTINE AND JORDAN IN THE OLD AGES

This course covers the study of historical ages Palestine and Jordan from the Paleolithic Stone Age until the Iron Age. It also discusses Palestine's relationship with neighboring empires, especially Iraq and Egypt, alongside with the civilization achievements the region has accomplished in the previous times.

10316220 TOURSIM PLANNING

This course studies the concept of tourism planning, its origins and evolution, importance and objectives, national and regional tourism planning, elements of tourism attractions, tourism planning and the environmental, economic and social effects and the elements of tourism planning (employment, legislation, investment, development, marketing, etc).

10316221 MANAGEMENT OF ARCHEOLOGICAL AND TOURIST SITES

This course aims at introducing tourist and archeological resources, indicating the methods of managing cultural and heritage sites for the purposes of tourism, through the discussion of the means of identifying and evaluating cultural and heritage resources, as well as indicating the methods of dealing the planning and legislative site requirements.

10316222 TOURISM IN PALESTINE

This course discusses the development of tourism in Palestine, the most important elements of the Palestinian tourism product, its components, the economic, cultural, and environmental importance of Palestinian tourism, tourist facilities and services, and tourism policies. Then, the course addresses organizational aspects of Palestinian tourism, the legislation and ethics of tourism, antiquities and heritage. It also sheds light on the most important Palestinian tourist sites and places.

10316223 INTRODUCTION TO ISLAMIC ARCHEOLOGY

This course aims at introducing students to the history of archeological research related to the study of the Islamic archeology, and the study of its general characteristics, properties and patterns across different Islamic periods since the beginning of Islam until the end of the Ottoman era.

10316224 ISLAMIC ARTS

The course addresses the introduction of the emergence of the Islamic arts, their relationship with the other arts, styles and types (Applied Arts and Decoration, Pottery and Ceramics, Textiles, wooden, metal, ivory and glass antiques), and the art of writing. The course highlights the impact of Islamic art on the other civilizations.

10316225 GREEK ARCHAEOLOGY

The course aims at providing the students with a historical and geographical overview of the lands ruled by the Greeks, the impact of Greek arts, as well as a study of Greek archaeologies through its internal and external centers, Greek urban planning, with a set of examples. It also addresses the other Greek Arts, such as: Photography, Pottery, Sculpture, and carving money ... etc).

10316226 BYZANTIUM ANTIQUITIES

This course addresses the Byzantine Empire, the emergence of Christianity, Byzantine Architecture (Churches), and Byzantine sculpture, mosaics and coins; the movement of image and icon breaking, and a comparison between the Byzantine and Islamic Arts on architectural and decorative levels.

10316227 RESEARCH METHODOLOGY

This course aims at preparing students for graduate studies and scientific research by studying various theories to research approach and considering them in the social sciences curricula, and employing the following activities: desk research, preparing lists of references to a specific topic, with a brief description of each of these references, review studies, audits and books critical reviews, using graphics to clarify certain information in the area of archeology, and then assigning students to research on one of the archeological topics of various ages.

10316330 OLD POTTERY

This course includes an introduction to pottery, concerning its raw materials and manufacturing methods. It focuses on modern scientific methods and techniques used in the analysis and interpretation of archeological pottery in terms of theory and practice. The course also includes the analysis and study of selected groups of pottery of different ages (Islamic Neolithic Pottery), and discusses the results of analysis. The course will be taught in English.

10316331 HOTEL INDUSTRY

The course deals with the historical development of the hotel industry, the impact of trade, industry, warfare, and traditions on it, in addition to introducing the hotel, its distinct characteristics and types and classifications of hotels.

10316332 ISLAMIC ARCHITECTURE

This course is designed to introduce architecture in the Arabian Peninsula before Islam, the relationship between the Islamic, Byzantine and Sasanian architecture, the impact of religion, climate and raw material in architecture, Mosque of the Prophet (the nucleus of Islamic architecture), Umayyad and Abbasid architecture, and the study of the most important artistic and Islamic architecture forms. The course also addresses the study of Islamic architecture in Palestine from the Fatimid to the Ottoman period, and includes the study of different (religious, civic, military and social) patterns.

10316333 MUSEUM ART

The course addresses the emergence and development of museums, museums' goals and objectives, history of some of the Arab and international museums, the study of a model museum, the choice of museum location, museum design, cabinets; coordinating the exhibits, safes, cards, lightning, museum safety; the

museum administrative body, maintenance and renovation, surveillance, and the role of excavations in supporting the museum collectibles. (The course will be taught theoretically and practically).

10316334 COINS

The course aims at introducing coins, their importance, resources, bartering, the study of coins since the beginning of the emergence of Sassanid dynasty, and then the Byzantine and Sassanid before Islam and in the early Islamic era, the Islamic monetary units (Dinar, Dirham and Penny), and the movement of Arabization in the era of king Abdulla Bin Marwan, alongside with the industry and styles of the Islamic railway.

10316335 TOURISM AND HOTEL MARKETING

The course aims at helping students understand the nature and forms of tourism marketing, which is considered one of the crucial sectors in complementing the national economy. The course helps the students in understanding the inputs and outputs in tourism sectors, in addition to providing students with the additional expertise in marketing and marketing services in the hotel sector in particular.

10316336 TOURISM IN ENGLISH

The fact that English is the international language in the present century, it has become necessary to provide students with the scientific terminology related to tourism. Furthermore, this is a seminar in English on the subject of tourism.

10316337 OLD LANGUAGE

The teacher chooses from the family of inscription or ancient writings (Greek, Latin, Nabataean alphabet, Old Arabic, Aramaic alphabet ... etc), and addresses them with the linguistic analysis and compounding, illustrating the historic value.

10316440 HISTORY AND ARCHEOLOGY OF JERUSALEM

The course covers the history of the city since the beginning up to the present time. The course emphasizes on the Canaanite and Jebusite remnants, as well as the Romanian, Byzantine and Islamic remnants. It also discusses the Zionist claims and their “historical rights” in the holy land. The course includes field visits to the City of Jerusalem and slide show illustrations.

10316441 SPECIAL TOPICS IN TOURISM

The teacher chooses a topic in tourism whether local or international, so as to be a special course dedicated to addressing related topics.

10316442 TOURIST GUIDING

This course introduces the concept of the tourist guiding, wearing the tourist guide badge, work skills, the art of tourist guiding, the art of leading the groups of special needs and concerns, and how to establish guides’ associations.

10316443 TOURISM OFFICES AND RESERVATIONS

This course includes the concept of travel and tourism companies and tour guides, and the importance of tourism and travel agencies and their functions, organizations, management, planning of its work, individual and collective flights and their marketing, and the relationship of tourism and travel agency with other tourist activities and professions. (The course will be implemented theoretically and practically in English).

10316444 FIELD TRAINING IN TOURISM/ PRACTICAL

This course is designed to provide the students in their senior year with field training that introduces them to the nature of working with customers, and the principles of field work in tourism and travel companies by performing 60 hours of training during holidays and leisure time, in a manner that doesn't affect the other courses.

10316445 SPECIAL TOPIC IN PALESTINE ARCHEOLOGY

The instructor chooses a special topic in Palestine archeology in which s/he deals with it in details.

10316446 ARCHEOLOGICAL FIELD TRAINING

The students learn about the various methods of excavation, documentation, survey, photo records, and site records theoretically and practically, through working on the archeological excavation the department organizes during the summer for third and fourth year students only. At the end of the semester, students should write a detailed report on the site they worked in, along with the field visits for some archeological excavations the Ministry of Tourism and Archeology organized to get them identified with the sites that were worked on in the past and the present. (100 hrs. of field work)

10301116 1-HEBREW 1/ TOURISM

This course aims at introducing the bases and principles of Hebrew, so that students can write and talk in Hebrew, as well as providing the students with general information and terminologies related to tourism and discuss them.

1031260 HEBREW 2/ TOURISM

Students can register this course after taking the Hebrew 1 course. This course aims to understand the Hebrew language well, comparing it with the Arabic language. Students are trained to translate from Hebrew to Arabic and vice versa, in addition to broadening students' knowledge in the subject of tourism.

1031198 FRENCH FOR NON- MAJORS 1

This course aims at introducing students to the French alphabet, and the way of writing masculine and feminine words, as well as sentence structures: personal pronouns, verbs, and objects (direct and indirect). It also lists daily

events using assistance tools such as drawings, pictures, and some short answers: acceptance, rejection, thanking, apology, and justifying the answers.

10311299 FRENCH FOR NON-MAJORS 2

This course aims to teach French through applying modern methods in teaching French for beginners and residents in the non- Francophone countries. By the end of this course, students are expected to be able to speak and understand simple sentences through which they can identify themselves, and learn to form simple sentences and arrange short dialogues.

10316250 LAWS AND LEGISLATIONS TO PROTECT ANTIQUITIES

The course is designed to introduce the laws, local and international policies concerned with the protection of heritage and antiquities, and explaining the importance of awareness of laws and their impact in keeping civilization heritage safe from theft, smuggling, trafficking and trespassing over the archeological sites. The course also discusses the most important organizations in this field: UNESCO, ICOM, and others.

10316251 GREATER SYRIA'S ANCIENT ANTIQUITIES AND HISTORY

This course focuses its study on the region from the Southern Taurus Mountains to the city of Damascus, and from the Euphrates to the coast of the Mediterranean, in terms of: the history of the archeological activity in Syria and Lebanon, until the end of the Bronze Age, the archeological excavations, written sources, the transitional period of the Middle Bronze Age, Syria during the Bronze Old Age and the Late Bronze Age, and finally the Iron Age.

10316252 NABATEANS

The course begins with a historical glimpse at the Nabateans, an archaeological survey of the important Nabateans' sites. The course then moves to the study of field work architecture, engraving of rock surfaces by the Nabateans according to historical sequence, victory arch, holy yards, Al-Banat Palace temple, major amphitheaters in Petra, rock surfaces painted with multi-color paint, Nabateans and their coins, in addition to their writings, inscriptions, and pottery in all its types.

10316253 TOURSIM COMMUNICATION SKILLS

The course introduces the means of communication, the oral and written communication skills, the methods of dealing with different nationalities and cultures, the art of communication and speech, and the art of eating and drinking. The course also deals with the development of personal skills between individuals and groups, and building the team and taking care of clients in the tourism industry.

10316360 HISTORY AND ANTIQUITIES OF THE ARABIAN PENINSULA

This course highlights the Arabian Peninsula's antiquity landmarks, their history from the beginning of the Stone Age, Stone-Copper Age, Bronze Age, Iron Age to the Classical Age. The course includes also a comparative study of the Arabian Peninsula's antiquities and the antiquities in neighboring areas.

10316361 ORIGIN AND DEVELOPMENT OF ARABIC CALLIGRAPHY

This course is a study of the basics, origins and development of Arabic calligraphy coupled with a practical presentation of different types of Arabic calligraphy in Arab East, Maghreb and Andalus.

10316362 HOTEL MANAGEMENT

The course is designed to deal with hotel management, the skills of dealing with customers and room service, food preparation and drinks service, organizing the work in the front offices, which includes correspondences, reception, queries, accounting and security. (The course will be taught in theory and practice).

10316363 ISLAMIC PHOTOGRAPHY

This course covers the following topics: Islam's attitude towards photography, types of Islamic photography, wall pictures, manuscripts, copies, mosaics, photography schools and technical production.

10316364 ARCHITECTURE IN THE ANCIENT NEAR EAST

This course is a survey of the engineering work of temples, shrines, palaces, and houses in Iraq, Egypt and Greater Syria in terms of architectural elements, architecture fashion, local origin and external influences.

10316365 TOURIST INFORMATION SYSTEMS

The course addresses the concept of tourist information systems, and information systems used in hotels and restaurants, tourist agencies, geographical information systems and GIS.

10316470 MAINTENANCE AND RENOVATION OF ARCHEOLOGICAL SITES

Students, in this course, learn about the importance of renovation and maintenance of antiquities and the maintenance of antiquity pieces. This study includes how these pieces get damaged and the best techniques to preserve and mend them. The course also covers maintenance of archaeological sites and buildings in terms of human and natural factors affecting them and the best means to preserve them, as well as some necessary maintenance work in the field such as removal of archaeological finds and facilities and taking samples. The students are also introduced to regional and local antiquity laws.

10316471 ANCIENT DECORATIONS AND INSCRIPTIONS

This course introduces students to the Semitic languages and the most important decorations and inscriptions in the region, Islamic decorations and inscriptions, the relationship between languages, types of ancient inscriptions, and the most important means of writing.

10316472 TECHNOLOGY IN THE ANCIENT AGES

This course studies the development of industries through the ages, and the first technology in dealing with the flint, metal, pottery, and glass materials and others.

10316473 TOURISM AND HOTEL SERVICES

This course focuses on the touristic and hotel miscellaneous services that meet the wishes of tourism such as: food, drinks, and other tourist facilities like restaurants, parks and hotels, and others. It also addresses the modern ways and mechanisms in providing these services.

Faculty Members:

Name	Rank	University
Lu'ay Muhammad Abu Al Su'ood	Assistant Prof.	Universidad de Salamanca Spain, Spain
Ja'far Abahira	Assistant Prof.	Malysia University of Science and Technology
Attif Muhammad Khuwairah	Instructor	Yarmouk University
Mazen Abdullatif	Instructor	University of Jordan

Faculty of Educational Sciences and Teachers' Training

{ Upper Basic Teacher (Mathematics) }

Study Plan for Upper Basic Teacher (Mathematics)

University Requirements		18
Free Courses		4
Departments' Requirements	Compulsory	96
	Elective	6
Total		124

English Language (2) 1000322

Course No.	Course Title	Credits	Prerequisites
10211101	Calculus 1	3	-
10211102	Calculus 2	3	10211101
10231107	Calculus 3	3	10211102
10211201	Principles of Partial Differential Equations	3	10231107
10211203	The Principles of Mathematics	3	10211102
10211212	Mathematics and Computer	3	-
10211220	Statistics1	3	-
10211231	Linear Algebra 1	3	-
10211241	Modern Algebra1	3	10211203
10211262	The Principles of Engineering	3	-
10211242	Partial Differential Equations 1	3	10211202 (1 credit hr.) or 10211203
10211321	Numerical Analysis1	3	10211201(1 credit hr.) or 10211202
10211322	Linear Programming	3	10211231
10211334	Probability Theory 1	3	10211201
10211343	Principles of the Theory of Numbers	3	-
10211105	Mathematicsfor Education	3	-
10221101	General Physics 1	3	-
10511322	Principles of Teaching Mathematics 1	3	-
10511332	Principles of Teaching Mathematics 2	3	10511322
10511432	Current Issues and Trends in Teaching Mathematics	3	10511322
10512316	Design and Production of Teaching Aids	3	-
10513411	Statistics and Research Methodology	3	-
10513215	Computer in Education	3	-
10513211	Practical Training 1	1	-
10513311	Practical Training 2	1	10513211
10513312	Practical Training 3	1	10513311
10513313	Practical Training 4	1	10513312
10513410	Practical Training 5	2	10513313
10513420	Practical Training 6	3	10513410or Synchronized
10513430	Action Research in Practical Training	3	10513420or Synchronized
10513111	Introduction to Curriculum	3	-
10513220	Educational Readings in English	3	-
10513221	Educational Psychology	3	-
10513302	Evaluation in Schools	3	-
10513317	Classroom Management	3	-

Department's Electives (6) credit hours

Course No.	Course Title	Credits	Prerequisites
10513455	Educational Planning	3	-
10513162	Introduction to Psychology	3	-
10513368	Educational Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Courses Description

10211101 Calculus (1)

This course covers the concepts of functions, limits and continuity, limit theorem, continuous functions, examples of derivatives, integrals, definite integrals, the First Fundamental Theorem of Calculus, indefinite integrals, area calculation, properties of real numbers, functions, curves, limits of trigonometric functions, logarithmic and exponential functions, limits and continuity, derivatives and high order derivatives, implicit differentiation, related rates, applications of the derivative (extreme values, the Intermediate Value Theorem), integration (properties of the definite and indefinite integral), integration by substitution, inverse functions (inverse trigonometric functions, hyperbolic functions, and L' Hôpital's Rule), real numbers, the line of even and odd functions, functions calculations, trigonometric functions, inverse functions, functions, real numbers, inequalities, drawing inverse trigonometric functions' curves, limits, limits' properties, limits calculations, infinite limits, continuity, continuity properties, differentiation of trigonometric and inverse trigonometric functions, relation between differentiation and continuity, rules of differentiation, chain rule, differentiation, logarithmic and exponential functions and their derivatives, hyperbolic functions and its derivatives, extreme values, Rolle's Theorem, mean value theorems, function space, first derivative test, concavity and the second derivative test, drawing functions, related rates problems, and conic sections).

10211102 Calculus 2

This course includes the calculus of logarithmic functions, the calculus of triangular and trigonometric functions, integration, integral applications in areas and volumes of solid of revolution, arch length and the area of the solid of revolution, indeterminate forms and indefinite integrals.

10231107 Calculus 3

This course focuses mainly on the parametric equations, polar coordinates, and vectors (three dimensions of a vector space, directed functions, applications of partial differentiation, as well as multiple integrals).

10211201 Principles of Integral Equations

This course examines the classification and solving of differential equations, first ordinary differential equation and applications of them, high ordinary differential equations solving and applications, solving differential equations by applying power series, and also by the Laplace Transform: theory and applications, and systems of linear differential equations and their solving.

10211203 Principles of Mathematics

The course discusses the logic and evidence, the set theory, relations, limits, functions, cardinal numbers, countable and uncountable sets, and examples of construction in mathematics.

10211212 Mathematics and Computer

The course studies the principles of programming, algorithms, data type, vocabulary control, functions and subprograms, applications of mathematics, and practice in using mathematical groups.

10211220 Statistics 1

This course deals with classification of statistical data, measurements of central tendency and dispersion, Probabilities in terms of definition and properties, discrete random variables, binominal distribution, normal distribution, sampling distribution, statistical and point estimation in the median sample, as well as testing theories in the median sample.

10211231 Linear Algebra 1

The course covers vectors and matrices, row operations, matrix operations, determinants and multiplication arrows, system of linear equations and their solving, vector spaces, independence and foundations, linear transformations, scopes, Eigen values and Eigenvectors.

10211241 Modern Algebra 1

The course focuses on binary operations, bundles, partial groups, finite groups, cyclic groups, parallel group, quotient group, regular semi group, morphemic Shifts, and Cello Theory.

10211262 Principles in Engineering

This course includes a description of geometry of position: Hilbert axioms, congruence, valence, similarity, circles and geometric transformation. It also describes solid geometry: line to line relationship, line to plane relationship, and plane to plane relationship, as well as projection, the Three Pillars Theory; it also touches on mathematical models, prism, pyramid, cone, sphere, and models' related theories.

10211232 Partial Differential Equations 1

The course studies the formation of partial differential equations orders one and two, linear and nonlinear equations, Fourier Transform and Series, wave equation, Laplace Equation, the Infinite Wire Equation, heat equation.

10211321 Numerical Analysis 1

The course introduces the different number systems: the conversion from one number system to another and addition, subtraction and multiplication operations on it; errors' measurement; comma derivative; computer number

format; resulting errors of the basic mathematical operations; rounding in nonlinear equations, rounding and curves oration ;numerical integration ;solving the linear equations(directly and rounding methods).

10211322 Linear Programming

This course includes the perfect numbers pattern, symbolic theory and double theory, sensitivity analysis for linear programming, and algebra representation, road transport, network, and game theory.

10211334 Probability Theory 1

The course focuses on the main concepts in probability, interval and discrete values, probability distributions binominal, engineering, negative polarity, regular, exponential and gamma and normal, limits of moment generation, and the derivations of different transformations.

10211343 Principles of the Theory of numbers

The course includes the divisibility rule, prime numbers, perfect numbers, congruence, Euler's Formula, Fermat's formula, Wilson's formula, linear congruence and solving, and the Chinese remainder theorem.

10211104 Mathematics for Education

The course includes sketching limits, polynomials, limits of relativity, normal logarithmic exponentials, derivatives (normal, sine, trigonometric Cos), limits by using substitution and indeterminate form by laws' application. It also discusses the derivatives' applications in tangent lines, instantaneous speed formula, increasing and decreasing functions, extreme values, integration as the inverse process of differentiation, integration by substitution and parts, the definition of the definite integral, the counting principle 3×3 and 2×2 , binomial theorem, Pascal's triangle, combinations and permutations, matrices, determinant matrix operations, and solving a system of equations of two or three variables using inverse elements and Cramer's rule.

10221101 General Physics 1

This course covers vectors, motion, motion and force, Newton's Laws of Motion, momentum, mechanical energy, work, power, gravity, and thermodynamics.

10511322 Methods of Teaching Mathematics 1

This course describes the module of teaching mathematics, its dimensions in the mathematical content and the educational objectives and the classroom activities. The course also includes the mathematical structure of concepts, generalizations, algorithms and skills, solving the problem, strategies of teaching as well as the educational applications within the teaching of mathematics.

10511332 Methods of Teaching Mathematics 2

The course studies school mathematics in the subjects of: algebra, engineering, probability and statistics, mathematical logic, binary operations, mathematical systems, planning and assessment; furthermore, the course addresses the issues of teaching mathematics and suggests suitable solutions within the school curriculum.

10511432 Current Issues and Trends in Teaching Mathematics

The course tackles the main current issues and trends in teaching mathematics: building an understanding of mathematics, and national and international tests as entrances to improve teaching mathematics. The course studies justifications for teaching mathematics and learning it, the international standards for the contents of the curriculum; its teaching, assessment, criteria of preparing math teachers, and comparing them with the teachers' status quo in teaching mathematics.

10513316 Design and Production of Teaching Aid

The course covers numbers of topics: the teaching aid, concept and stages, and the educational and psychological operations. It also describes the types and resources of the teaching aids. The course includes designing a teaching aid under the specifications of the model teaching aid, and using the surrounding environment's materials to produce it.

10513411 Statistics and Research Methodology

The course describes the measures of central tendency and dispersion, and employing them in the basics of research methodology, through giving students the opportunity to find out the types, steps and method of the research, as well as helping them in choosing the research problem, collecting the information and analyzing them, and interpreting the results.

10513215 Computer in Education

This course describes the historical evolution of computer use in education, the international experiences of this usage, the computer programming languages in education, the advantages of the computer in education, and the various applications in both the administrative and educational fields. It also focuses on using the internet to support the process of learning and education. Other topics include: assessing the global sources of information, collaborative learning environment on the internet, searching and restoring of the information. Practically, it aims at providing the students with the necessary skills to help them in designing and producing educational multimedia software based on the teaching design principles. The produced software includes patterns of the known software, like exercise and practice, tutorial, simulation, educational games, dialogue using the authorial tools such as PowerPoint, Photo Story 3 for Windows, or Movie Maker

10513211 Practical Training 1

This course covers the theoretical aspects of practical training, which aims at getting the students prepared for every aspect of school work - administrative and educational. The requirements and duties are implemented in a theoretical framework, so that it includes a set of experiences complementary to those theoretical ones the students completed earlier, and prepares them for the requirements and duties of various classroom activities. The course also provides the opportunity for students to become familiar with the philosophy of practical training, its components, rules, principles, ethics, as well as familiarity with duties, rights and regulations applied at schools.

10513311 Practical Training 2

This course covers observations and partial participations all together according to the two main streams: firstly, 16 face-to-face educational meetings in the university and with the course instructor, focusing on the purposeful constructive observation, the mechanisms of monitoring data, and data analysis as an assessment in analytical framework of the classroom activities'. Secondly, there is a practical training stream in which students move to schools to get their practical training(16 hours), through which the students perform their organized programmed observations to study the classroom and school environment, and then the discussion with the co-teacher in front of the students as a prelude to set their objective judgments.

10513312 Practical Training 3

During this course, the student assumes responsibility for implementing the activities of a one session classroom situation in light of the standards required, for the student is expected to implement the teaching tasks under the supervision and responsibility of the instructor, principal of the partner school, and the educational supervisor for 32 days in an average of two servings a day; furthermore, and for 16 weeks, the student also performs a lot of activities and events associated with the curriculum, so that it is set and coordinated by the instructor and the partner school management, in full compliance of regulations, laws and instructions for the school and the practical training applied in the university.

10513313 Practical Training 4

This course figures upon the weekly meetings between the supervisor and the students during the semester and throughout the implementation of the classroom tasks and activities in the partner school, where such activities are required to be carried out in a period of time of not less than three hours for 16 weeks, during which the trainee student becomes accustomed to independence, taking on the responsibility, reflection and criticism, as well as actively making use of the feedback with the supervisor instructor. In addition, all the difficulties and experiences the student faces during his school training

period are discussed in the weekly meeting with the supervisor instructor at the university. This practical training earns up to 32 hours.

10513410 Practical Training 5

With the growing level of practical experience which the student has received as the result of the early stages of practice, his level of engagement in the teaching process and classroom leadership increases as well. However, he still needs the follow-up and supervision of both the supervisor and cooperative teachers; for he still needs to come back to ask them back to make sure of the readiness of his plans and it happens in a 16 face-to-face hours, 64 actual full hours, as well as in the observations he does with his classmates and co teachers.

1053420 Practical Training 6

This course is an extension to the previous one, where the student is required to prepare, organize and implement the lessons he is asked to teach, organize and accomplish independently, ranging between basically partial independence and full independency, based on the input of the co-teacher and the supervisor and the knowledge of the principal as well as assigning the student with preparing, implementing, analyzing testing and setting the treatment plan in light of the process results. 20 hours are taught per week for 5 weeks (continuous or discrete) so as to cover not less than 120 hours under the supervision of the co-teacher, the educational supervisor and the co school principal in the training.

10513430 Action Research in Practical Training

This course covers action research in terms of its concept, objectives, types and applications on the educational didactic difficulties and obstacles faced in the classroom and school environment. Then the student is asked to research one of these issues that he faced during his practical training under the supervision of the one of the department's instructors with full application of the steps of the action research.

10513111 Introduction to Curriculum

This course includes the evolution of the concept of the curriculum, its components, basics, design, planning, sampling, and the educational philosophies and theories discussed in the curriculum.

10513220 Educational Readings in English

The course deals with variant types of modern readings in English in various educational topics. The readings include major educational concepts addressed by the students as they analyze, apply and generalize in an attempt of building a set of meaningful educational vocabulary to enrich the student's English language vocabulary.

10513221 Educational Psychology

This course describes the educational psychology with its relation to the knowledge of general psychology, the method of applying the concepts of behaviorism and cognitivism in the teaching process that facilitates the learning process, the appropriate atmosphere to the teaching process happen, the teaching of children with disabilities and learning disabilities, as well teaching gifted students, how to complete the teaching process, and its measurement and evaluation.

10513302 Evaluation in Schools

This course introduces students to evaluation and its development, objectives and different means of evaluation, the standards of assigning these means; this includes different types of evaluation, methods of their construction and analysis, how to assess students in their academic achievement on the basis of the reached results.

10513317 Classroom Management

This course examines the scientific basics of school management on its various aspects, with a particular focus on the scientific and practical aspects, since the school is the place where efforts accumulate in every educational field, and that the way in which it is managed and its working methods indicate its level of success in delivering the message entrusted to them by education.

10513455 Teaching Design

This course covers the design of daily lessons and identifies the concepts related to them in terms of cognitive, emotional and psychomotor objectives, defines the activities, methods, and evaluation and knowing the general teaching patterns in applied sciences and humanities, and it introduces the students to the tasks carried out by the teacher in teaching design when planning.

10513162 Introduction to Psychology

This course covers the description of the theories of psychology, and its relation to the processes of learning and education, as well as knowing the stages of growth, different characteristics of learners; and it also addresses a number of educational applications relative to the theories of psychology.

10513368 Teaching Skills

This course deals with several skills related to the process of teaching, such as the skills of preparing lessons or lesson planning, the skills of composing the educational goals in the cognitive, emotional and kinesthetic domains and their different levels, the skill of having the students' attention, the skill of posing questions, the skill of classroom interaction, the skill of employing the teaching aids, the skill of managing discipline in the classroom, the skill of group formation, the skill of the debate and the skill of the lesson evaluation.

10513299Active Learning

This course deals with the concept of active learning in terms of the definition, objectives, basics, characteristics, nature, importance and components. It also addresses the suitable classroom environment for active learning and its pontifications in learning, the strategies and models of active learning(oriented lectures, brainstorming, discovery, problem solving, active group discussion, role playing, acting, story, simulation and case study), teacher's role in active learning, active learning outside the classroom, active learning and effective thinking, the challenges of active learning, as well as the field applications on the active learning in different fields of study.

10513366Educational Supervision

This course deals with the concept of educational supervision and its different definitions, the historical evolution of the process of educational supervision, the objectives and principles and of the educational supervision, its importance, the factors affecting the educational supervision, the areas of the educational supervision, the tasks and roles of the educational supervisor, And the role of the principal as a resident supervisor. The course also describes the course types (dictatorial, democratic, clinical, preventive, scientific, structural, purposeful, corrective, creative, evolutionary, classroom, varietal), and educational supervision methods (classroom visits, illustrative lessons, mini-education, meetings, seminars, research, and self- evaluation), and the problems of educational supervision and its future.

{ Physical Education }

Vision:

The philosophy embraced by the Faculty of Physical Education closely corresponds with the philosophy of An-Najah National University itself. The Faculty is concerned with scientifically and professionally preparing its graduates so that they can embark on successful careers in the public and private sectors, organizations, the Ministry of Education and Higher Learning, the Ministry of Youth, health and body building centers, and in military centers. The college will provide these institutions and workplaces with the most competent and qualified candidates who can contribute to and meet the needs of the society and who are able to measure up the standards of scientific progress. The college has made it an imperative that its graduates represent a fundamental principle in the vision for developing Palestinian sports and successfully preparing Palestinian national teams.

Message:

The program carries the Faculty message that aims at preparing students both academically and practically, so as to provide the community with qualified students with the Bachelor of Physical Education who have high educational, practical and research skills; as well as to provide training clubs and fitness centers, military and sports sectors and administrative work in various sports institutions with qualified students. Through personal refinement, students will be able to meet this distinctive role that the Faculty aspires to uphold, and will be able to provide the community with all its sports.

Objectives

The Faculty of Physical Education at An-Najah University brings to light its philosophy and message by achieving the following objectives:

Firstly: General Objectives

Secondly: Specific Objectives (Intended Learning Outcomes - ILOs)

Firstly: The program aims at achieving the following general objectives:

1. To prepare highly qualified and competent sports graduates in various capacities as sport teachers and trainers. The graduates will have received scientific and professional training so as to meet the needs of diverse sports organizations- including schools, clubs, universities, institutes and body-fitness centers- for all people in Palestine, including those with special needs.
2. To develop and improve the sports training in Palestine by selectively recruiting promising sports beginners and nurturing their tenacity and psychology. Students will be able to prepare short-, medium- and long -term training programs for the novice, the elderly and both sexes.
3. To develop the administrative work in various Palestinian sports institutions.
4. To prepare students with the ability to define and use the proper tools, equipment

and modern techniques in teaching school physical education

5. To develop students' abilities of problem-solving, their ability to work in various capacities and to make use of whatever is available to them within the surrounding environment for the teaching process.

Secondly: The Specific Objectives (ILO):

The program's specific objectives are linked to the general objectives and the curriculum. The specific objectives are represented in the ILOs, and so the specific objectives are within the following levels:

Knowledge and Understanding:

1. The student learns the teaching principles of physical education, and the basis and methods for different games and physical activities.
2. The student learns the ways of dealing with modern techniques and creating the appropriate environment to ensure distinctive learning outcomes.
3. The student learns the basics of scientific research and its applications, the steps of setting research plans, assumptions, variables, descriptive statistics, design (concept, objectives and principles), and design types using parametric and nonparametric statistical tests.
4. The student studies the physiology of the human body during the continuous physical exertion. He also studies physiological theory in sports training, genetics and physical performance, the impact of environmental factors on physical performance, and muscle fatigue and its impact on performance.
5. The student understands the integrative education between physical education and other school subjects.
6. The student learns the scientific theories and methods used in the field of training, such as the concept of training and its components, and types of interval, continuous, mixed and circular training.
7. The student learns the basic concepts of measurement and evaluation in physical education, and is able to provide information about the scientific characteristics of the tests used in the evaluation of the various aspects of physical education programs.
8. The student learns the basic concepts of physical education in the curriculum, and looks at local, Arab and international curricula of the various stages of study and work on the analysis and criticism, as well as evaluation of the curricula.
9. The student is introduced to learning theories, stages of motor learning and neurological basics of learning different motor skills.
10. The student is introduced to the psychological theories and their sports applications, the impact of the various psychological factors on the physical performance of the athlete and the methods to take advantage of these factors in the development of the athlete's level of performance.
11. The student is introduced to the relationship between physical fitness, physical activity and modern lifestyle on the one hand, and today's diseases and health problems that individuals suffer on the other.

12. The student is introduced to the concepts related to sports as social phenomena, social theories, sports applications, the study of the role of sports in various social institutions and their impact on the community's culture.
13. The student understands the health, function, and mobility sciences' basics in the field of sports and their applications, and is able to set up rehabilitation programs for some sport injuries.
14. The student understands a lot of modern contemporary issues in physical education.

The mental skills:

1. The student realizes the properties of physical, motor, emotional and mental growth for different levels of education and takes them into account when playing his education and teaching role.
2. The student absorbs the university's mission and future vision and works on achieving its goals.
3. The student understands the concepts related to sports marketing and its role in promoting tournaments.
4. The student understands that the teacher should be a good example for the students whether inside or outside school or university campuses.
5. The student can analyze the physical demands and skills needed for practicing the activities and sports games for different ages and identifying these demands.
6. The student should remember the forms of motor skills and their components and subdivisions and take into account the sequence in teaching them for both novices and students with disabilities.
7. The student should remember the good performance phases of skills and be able to distinguish the proper from the wrong performance and understand the reasons for errors and how to correct them.
8. The student should be able to use the scientific method of thinking to effectively address the teaching learning associated problems from all aspects.
9. The student should remember the educational and scientific concepts associated with motor skill education and exercises.
10. The student should realize safety rules and good dealing with sports injuries and sudden situations.
11. The student should choose the best teaching methods that suit skills teaching for different ages.
12. The student chooses the tests and evaluation methods that suit students' achievement.
13. The student comes up with brand new tests to teach motor skills for different ages for both novices and students with disabilities.

Professional and practical skills:

1. The student should be able to manage the classroom in an appropriate manner.
2. The student should apply the models in exercise and good skills for various activities and sports games.
3. The student should employ the methods and techniques in education.
4. The student should organize sports leagues in the economic dimension, and prepare for promoting sports championships from all aspects.
5. The student employs all that is available in the surrounding environment, such as stadium lines and circles in implementing exercises and education.
6. The student considers using the convenient formations (minus side square, half circle, the free spread, locomotives and circles) in education and the application of exercises and skills.
7. The student chooses the best reward or punishment during physical education class.
8. The student chooses the novices and gets them trained for school and university teams.
9. The student employs the convenient evaluation methods appropriate for the educational process and the amendments according to the developments.
10. The student considers diversity in teaching methods, activities and sports games to satisfy the students in order to avoid boredom.
11. The student considers the individual differences between students in the individual or group work applications.
12. The student manages to lead a group whether in the university, school, the club or any fitness center.
13. The student should be able to check appliances and sports equipment and maintenance before, during and after the educational process.
14. The student should be able to correct skills errors during the physical education class.
15. The student should behave well when implementing the class under exceptional circumstances, such as hot weather and rainy weather inside the classroom.
16. The student should be able to manage scout camps and wayfaring lifestyle.

General Removable Skills:

1. The student employs democratic methods during dialogue and discussion, respecting cultures and beliefs.
2. The student uses modern technologies in the teaching process.
3. The student should have the ability to lead, take responsibility, cooperate during teamwork, and transfer expertise in the teaching process.
4. The student should acquire scientific thinking skills and employ them in solving educational process problems from all aspects.

5. The student should acquire the abilities of sharing, teamwork, and communication with the others using the internet and through special course assignments.
 - 1- The student should be able to cooperate with others and educational institutions to amend the community's sports culture.
 - 2- The student should acquire the ability to take advantage of modern technology in self-learning and transfer expertise to others.
 - 3- The student should acquire the administrative qualities and healthy habits in practicing the educational process and training.
 - 4- The student should have the ability to effectively communicate with others during the educational process and training.
 - 5- The student should be flexible in interacting with global developments without intolerance while maintaining the national, religious and cultural constants of the Palestinian people.

Thirdly: The Study Plan

The study plan for Physical Education

Requirements	Credit hours
University requirements	18
Department requirements - Theoretical	42
Department Elective- Theoretical	6
Department requirements - Practical	58
Department Elective- Practical	6
Total	130

Firstly: Department Requirements - Theoretical (42) credit hours

Course No.	Course Title	Credit hrs.	Prerequisites
7101107	Introduction to Sport Anatomy	3	-
10503102	Introduction and Philosophy of Physical Education	3	-
10503105	Sports Physiology	3	7101107
10503106	Health Education and Sports Activity	3	-
10503211	Organization and Administration in Physical Training	3	-
10503215	Statistics in Physical Education	3	-
10503219	Principles of Sports Psychology	3	-
10503320	Motor Learning	3	10503219
10503321	Principles of Physical Sports Education	3	05031071,10503322
10503324	Kinesiology	3	
10503305	Sports Injuries and Physiotherapy	3	
10503326	Scientific Research in Physical Education	3	10503432
10503431	Curricula in Physical Education	3	10503321
10503432	Measurement and Evaluation in Physical Education	3	10503215
10503436	Sports Training	3	-

Secondly: Department Electives- Theoretical (6 credit hours)

Course No.	Course Title	Credit hrs.	Prerequisites
10503450	Contemporary Issues in Physical Education	2	-
10503251	Sports Media	2	-
10503252	Recreation and Leisure Time	2	-
10503353	Sports Marketing	2	-
10503254	Sports of Special Cases	2	-
10503255	Sports Technology	2	-

Thirdly: Department requirements - Practical (58 credit hours)

Course No.	Course Title	Credit hrs.	Prerequisites
10503103	Physical Fitness	3	-
10503104	Volleyball1	3	-
10503107	Physical Exercises 1	3	-
10503108	Athletics 1	3	-
10503109	Gymnastics 1	3	-
10503212	Basketball 1	3	-
10503213	Football 1	3	-
10503214	Rhythmic Movement 1	3	-
10503216	Swimming 1	3	-
10503217	Handball 1	3	-
10503218	Volleyball 2	3	10503104
10503322	Physical Exercises 2	3	10503107
10503332	Gymnastics 2	3	10503109
10503327	Football 2	3	10503213
10503328	Rhythmic Movement 2	3	10503214
10503329	Athletics 2	3	10503108
10503330	Practical Training 1	3	10503321
10503433	Swimming 2	3	10503216
10503434	Handball 2	3	10503217
10503435	Practical Training 2	2	10503330
10503438	Basketball 2	3	10503212

Fourthly: Department Electives - practical (6 credit hours)

Course No.	Course Title	Credit hrs.	Prerequisites
10503356	Football(Female)	2	-
10503257	Small Games	2	-
10503359	Squash	2	-
10503260	Tennis	2	-
10503361	Badminton	2	-
10503262	Table Tennis	2	-
10503468	Weightlifting	2	-

Course Description

10503321 Teaching Methods in Physical Education

This course aims at introducing students to the necessary knowledge that helps them in building up their own philosophies of education. This includes general concepts on the methods and styles of teaching, the resources, areas, and general principles of physical education, and its relationship with the pedagogical techniques and the instructor, as well as the PE lesson in terms of objectives, goals, parts, methods of application and evaluation.

10503106 Health and Sports Activity

This course is designed to introduce students to the concept of health and health education and its overall importance in the school environment and in the protection of diseases. In addition, this course underscores the relation between physical education and health education and considers it as part and parcel of the public health education. Furthermore, this course emphasizes the importance of nutrition for physical activities and other health concerns. Finally, this course stresses the importance of paying a great deal of care in physical education class and in the school environment to health issues.

10503101 Introduction to Sport Anatomy

This course is designed for students to acquire the necessary knowledge about the anatomical construction and structures for the system of the human body. It also focuses on the application of the principles of anatomy in physical education and sports and focuses on the motor system which includes muscles, bones, joints and nervous system.

10503219 Principles of Sports Psychology

This course is designed to introduce the factors and psychological methods in rehabilitation and preparing athletes for the psychological pressures they are likely to face during their career, and the competitions (motivation, personality and tendencies), as well as how to deal with these cases from the theoretical and practical aspects such as injuries, stimulants and drugs. It also helps teachers, trainers and therapists in diagnosing these cases and treating them through the application of the psychological methods and mental skills.

10503320 Motor Learning

This course is designed to introduce students to Human Learning Theories and the ways of implementing such theories for the sake of teaching students through physical exercise and activities. In addition, this course aims to introduce students to the learning trends, methods and physical movement in addition to the curriculum and planning the stages of growth and the characteristics of each stage in the learning process in basic kinetic skills.

10503431 Curricula in Physical Education

This course is designed to introduce students to the concept and developments of Physical Education Curricula, and the philosophical, psychological and social curriculum principles. Furthermore, this course lays out the curricula used in physical education for various learning stages, including the components and methodologies applied, as well as the evaluation and measurement methods, and organizing vertically and horizontally the curricula for the learning stages.

10503324 Kinesiology

This course includes a display of various forms of physical movements, such as straight and closed movements, in sports. It also includes a display of the influencing power or force on the human body and provides a kinetic analysis of some movements and their types for some sport games. This course then focuses on the physics laws pertaining to power, speed, acceleration, gravity and friction, sites of labor and movement transport.

10503215 Statistics in Physical Education

This course aims to introduce students to the fundamental statistical processes in physical education. Students will become acquainted with the measurement of central tendency, variation, simple correlation, normal distribution and the ways of constructing norms, as well as teaching students the methods of hypothesis testing.

10503102 Introduction and Philosophy in Physical Education

This course aims at introducing students to Physical Education. It points out its goals, objectives, its philosophical foundations and its resources of knowledge. In addition, this course traces the history of physical education, its status and its development in ancient civilizations, in the Middle Ages, during the Renaissance Age, in the Islamic Age and finally, in the Modern Age.

10503105 Sports Physiology

This course studies a number of aspects concerning sports physiology, such as: the responses and adaptation of sports training, the human skeletal muscle structure and its function, the energy systems, physiological training theory, the effect of sports training on different human systems, the factors which have influence on physical performance, nutrition and exercise, weight control and body composition.

10503305 Sports Injuries and Physiotherapy

This course focuses on: common sports sport injuries- or injuries resulting from sports training and exercise-, the causes and symptoms of these injuries, the ways and means for protection and prevention and the proper method of first aid cure or natural treatment. This course provides knowledge and training in first aid and on the resuscitation of one's hearts and lungs.

10503326 Scientific Research in Physical Education

This course focuses on: developing scientific research in physical education, developing the steps and methods of conducting scientific research, the gathering of information and the statistical methods of testing scientific hypotheses.

10503211 Administration and Organization in Physical Education

This course is designed to introduce students to the importance of Administration and Organization in physical education in addition to organizing and managing various sports (indoors and outdoors activities), and games and methods of organizing, records and reports and the preparation of the budget for physical education and sports equipment, as well as the development of students' skills in organizing championships and tournaments for local and foreign sports.

10503432 Measurement and Evaluation in Physical Education

This course aims to identify the fundamental concepts of "Measurements" and "Evaluation" in physical education. It also introduces students to the scientific criteria for testing and evaluating different programs in physical education and providing remedies for common errors in measurement. Furthermore, this course focuses on the anthropometrics, skills, physical fitness, and physiological and psychological measurements in physical education and sports. It also focuses on finding the ways for preparing the standards and levels geared for physical education programs. The course also aims at providing students with a statistical introduction that includes some descriptive statistics and how to build tests and science operations (validity, reliability, objectivity and standards).

10503436 Sports Training

This course is an introduction of the concept of Sports Training in terms of its development and principles. It also introduces students to the principles of developing the physical, technical, tactical and psychological characteristics, as well as introducing the process of planning in training, and the methods of preparing athletes. Furthermore, it introduces students to the various training methods in preparing and developing athletes in the single and multiple player games, and the trainer's role in this.

10503254Sports of Special Cases

This course is designed to define and identify special cases of physical education, particularly students with disabilities or some physical deficiencies. This course is also designed to point out the types of physical activities that are suitable for students with some physical education disability. Furthermore, this course is designed to identify the talented and most gifted in sports and prepare proper and suitable sport exercises for them and set up sport championship tournaments, as well as providing students with knowledge and information that can change their attitudes towards students with special cases, and introduces them to the main causes for each disability and the methods of prevention. In addition, students learn the importance of familiarity with the tools and equipment that people with special needs use in their daily life, and they are encouraged to integrate them in their physical education classes.

10503252Recreation and Leisure Time

This course aims to introduce students to the importance of recreation and leisure time for both individuals and for society. It also looks at the types and forms of recreation and leisure time in terms of its goals and its objectives and the characteristics of each form of recreation and leisure time. Furthermore, this course highlights the educational programs of recreation and leisure time, forms students' cognitional knowledge of recreation and leisure time programs and their importance and implications and identifies with their management and organization.

10503353Sports Marketing

This course is designed to introduce students to the concepts of pertaining to sports marketing in terms of its elements, steps, and its roles in the success of local, regional and international sports tournaments and championships. This course looks at holding and participating in sports tournaments and championships as an economic incentive or source of income, in addition to the right of media coverage at such events. It explores the production of sports needs and the processes of manufacturing them, offers exposure to previous models of marketing plans for the sale of such tournaments and championships events and invests in the field of sport and professionalism.

10503450Contemporary Issues in Physical Education

This course aims at introducing students to contemporary issues concerning physical education sports. In addition, it aims at discussing topics such as: modern physical education, the reality of physical education graduates in term of the development of labor market, modern terms of sport (sport and politics, sport globalization, homogenization and slavery, bribery and manipulation of the results, world mafia, and sports betting), interviews with the professional players and players of the special needs, football violence,

sports professionalism, women and sports, sports marketing, sports and technology, match analysis, management of clubs and institutions, rhythmic gymnastics, stimulants, contemporary diseases, sudden death, sports of special needs, some modern games and other important issues.

10503251 Sports Media

This course is designed to introduce students to the importance of mass media- whether it is visual, readable or audible- and the important role it plays in enhancing the level of sport and its elements. Furthermore, this course aims to illustrate the role of sports media in raising the society's level of understanding of sports.

10503255 Sports Technology

This course aims to introduce students to the modern devices used in the field of sports and tournaments and the methods of measurement and selection, and their use in managing sports' institutions.

10503213 Football 1

This course aims to give an idea of the skill and its importance for the player with the a clear explanation and teaching of the basic principles of football and seizing the available devices with a general idea on the game rule, in addition to the use of the best ways to teach all the basic and complex skills.

10503212 Basketball 1

This course is designed to teach students the fundamental skills. Students will acquire the following skills: passing, dribbling and shooting the ball. Students will learn the skill of maneuvering and being in a stance of readiness.

10503217 Handball 1

The course aims to teach students the fundamental skills in handball. Students will acquire the following fundamental skills: passing and scoring the ball, running, receiving and sneaking with the ball.

10503104 Volleyball 1

This course is designed to teach students the basic skills necessary for playing volleyball, such as: serving, receiving, setting, striking, covering and blocking. In addition, this course acquaints students with the common violations in volleyball and students will develop learning exercises for the acquisition of skills.

10503109 Gymnastics 1

This course is designed to teach students the basic skills necessary for gymnastic exercises. Male and female students must acquire the skills of performing floor exercises and the floating table and male students will also learn how to use the parallel bars.

10503214 Rhythmic Movement

This course is designed to teach female students the fundamental skills for various body parts without using any tools or equipment. The primary focus of these exercises will be on the movement of the hands and the feet.

10503108 Athletics 1

This course is designed to teach students athletic skills such as track activity, sprinting and long- distance running. In addition, students will be introduced to holders, fencing, relaying and walking.

10503216 Swimming 1

The aim of this course is to introduce students to the historical development of swimming. In addition, it teaches students the fundamental principles of swimming in terms of diving and sensing water, floating and swimming on the chest.

10503107 Physical Exercises

This course aims at introducing students to a particular sport where the students write exercises about sports and apply them. In addition, students will have the opportunity to learn a set of simple exercises without using any tools or equipment. The students also will be introduced to the concepts of physical exercises and original and extracted positions and writing exercises.

10503330 Practical Training and field training 1

This course aims at getting the students familiarized with active participation and observation study of physical education and the application of certain parts in internal and external school activities, as well as getting them familiarized with commitment to school attendance from the morning assembly and till they leave the school.

10503103 Physical Preparation

This course is designed to develop the elements of fitness associated with health and skills, as well as the ways of measurement through sports to develop the respiratory and circulatory system so that students acquire integrated fitness and special fitness. The course also aims to give examples of the development of the above-mentioned physical preparation.

10503327 Football 2

This course is designed to help students to acquire the necessary skills for playing football, such as: being able to master the fundamental physical movements on the playground, being able to acquire the defense and offensive strategies and tactics in the football game and being able to comprehend the rules of the football game.

10503438 Basketball 2

This course is designed to teach students the basic skills necessary for the sport of basketball. In addition, this course introduces students to the defensive and offensive strategies in group playing. Finally, this course acquaints students with the rules regulating this sport and its application.

10503434 Handball 2

This course is designed to help students acquire the necessary physical movements for the sport of handball by introducing them to the defensive and offensive plans in handball games and teaching them the rules and regulations governing such a sport and applying them.

10503218 Volleyball 2

This course is designed to teach students the basic skills of defensive and offensive strategies for the sport of volleyball. In addition, this course introduces students to the trainer's duties, the ways of playing, the regulating rules of this sport and its application.

105033323 Gymnastics 2

This course is designed to help students acquire the basic and fundamental skills of gymnastics: pommel horse, horizontal bar and rings for men, and balance beam for female students. In addition, this course acquaints students with the rules of this sport and organizing championships in gymnastics.

10503328 Rhythmic Movement2

This course is a review of the types of skills and exercises which students have learned in the Rhythmic Movement course. In addition, students will acquire some rhythmic skills; accompanied with music, they will use some equipment, such as the ring, to enhance their ability to perform such exercises. Furthermore, students will be introduced to types of dance, particularly the oriental and folkloric types.

10503329 Athletics 2

This course is designed to teach students field racing, the techniques of throwing heavy balls, the techniques of shot put, the discus, and the javelin and the techniques of jumping events(long, triple, and high jump). In addition, students will have the opportunity to learn the rules of this sport.

10503433 Swimming 2

The aim of this course is to teach the fundamental principles of swimming-types, such as free swimming, butterfly-swimming and dolphin-swimming. Alongside this, students will learn the rules of the sport of swimming.

10503322 Physical Exercises2

This course is designed to teach students a group of paired and collective exercises and to display some performances by using different tools and equipment.

10503435 Practical Training2

This course is designed to train students to carry out the tasks of the physical education trainer/ teacher in terms of: teaching and carrying out the designated lesson plans at the school, supervising indoor and outdoor activities and supervising the preparation, application and discussion of plans with a counselor.

10503356 Football(Female)

This course is designed to teach female students the basic and fundamental skills necessary for the sport of football such as: ball control, ball-kicking with the foot and the head, ball-jogging, ball-passing, ball-aiming, ball-tricking, ball-faking, dribbling and border cut.

10503359 Squash

This course is designed to teach students the basic skills of the sport of squash, such as grip-handling, stands, footwork and forehand and backhand. In addition, students will be taught and acquainted with the rules for playing and refereeing this sport.

10503260 Tennis

This course is designed to teach students the necessary skills for the sport of court tennis in terms of acquiring some competence in movement skills, in footwork, in the holding of the racket, in forehand and backhand strokes and other basic stroke techniques. In addition, students will learn the rules of this sport.

10503257 Small Games

This course is designed to introduce students to the types of small games and their application in a variety of sports. In addition, students will learn how to write such types of small games and how to select their names.

10503361 Badminton

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of badminton and the ways of performing it, along with becoming acquainted with the rules of this sport.

10503262 Table Tennis

This course is designed to introduce students to the theories pertaining to the basic skills and application of table tennis. In addition, students will have the opportunity to learn the rules of refereeing individual and double games.

10503468 Weightlifting

This course is designed to introduce students to the sport of weightlifting by using various tools, instruments and exercises. In addition, students will learn different forms of weightlifting and rules of this sport.

Staff member

Name	Academic ranking	University of graduate
Prof. Abdel Nasser Al-Qadoomi	Full Prof.	Romania
Prof. Imad Saleh Abdelhaq	Full Prof.	Russian Academy
Dr. WaleedKhanfer	Associate Prof.	Romania
Dr. Jamal Shakir	Assistant Prof.	University of Jordan
Dr. Bader Refat	Assistant Prof.	University of Sudan
Dr. Muain Hafez	Assistant Prof.	University of Sudan
Dr. RaghidaMufleh	Assistant Prof.	University of Jordan
Dr. Mahmoud Atrash	Assistant Prof.	University of Jordan
SulaimanAlamad	Instructor	Yarmouk University
Mohammad Qadoomi	Instructor	University of Paris 2
Eiman Abu Joub	Instructor	University of Sudan
Irina Abdelhaq	Teaching Assistant	Russian Academy

{ Upper Basic Teacher - Sciences }

University Requirements		18
Free Courses		4
Department Requirements	Compulsory	100
	Elective	6
Total		128

English 2 (1000322)

Department Requirements (100) credit hours

Course No.	Course Title	Credit hrs.	Prerequisite
10221101	General Physics 1	3	-
10221107	General Physics 1 Lab.	1	10221101 or synchronized 10221101
10221102	General Physics 2	3	10221101
10221108	General Physics 2 Lab.	1	10221102 or synchronized 10221102
10221203	General Physics3	3	10221102
10221221	Waves and optics	3	10221102
10221213	Physics Laboratory 1	1	10221203
10221242	Modern Physics 1	3	10221102
10211101	Calculus 1	3	-
10231101	General Chemistry 1	3	-
10231107	General Chemistry 1 Lab.	1	10231101 or synchronized 10231101
10231102	General Chemistry 2	3	10231101
10231108	General Chemistry 2 Lab.	1	10231107 or synchronized 10231102
10231211	Analytical Chemistry	3	10231102/ 10231108
10231215	Analytical Chemistry Lab.	1	10231108/ 10231211
10231231	Organic Chemistry 1	1	10231102
10231235	Organic Chemistry Lab.	1	10231108
10231321	Inorganic Chemistry	3	-
10201101	General Biology 1	3	-
10201107	General Biology 1Lab.	1	10201101
10201102	General Biology 2	3	10201101 or Synchronized 10201102
10201108	General Biology 2Lab.	1	10201102 synchronized
10201232	Principles of Genetics	3	10201108 & 10201102
10201258	Biodiversity	3	-
10201249	Biodiversity Lab.	1	10201258
10512331	Methods of Teaching Sciences (1)	3	-
10512341	Methods of Teaching Sciences (2)	3	10512331
10512481	Modern Issues and Trends in Teaching Sciences	3	10512331
10513316	Design and Production of Teaching Aids	3	-
10513411	Statistics and Research Methodology	3	-
10513215	Computer In Teaching	3	-
10513211	Practical Teaching 1	1	-
10513311	Practical Teaching 2	1	10513211
10513312	Practical Teaching 3	1	10513311

Course No.	Course Title	Credit hrs.	Prerequisite
10513313	Practical Teaching 4	1	10513312
10513410	Practical Teaching 5	2	10513313
10513420	Practical Teaching 6	3	10513410 or Synchronized
10513430	Action Research	3	10513420 or Synchronized
10513111	Introduction to Curriculum	3	-
10513220	Educational Readings in English	3	-
10513221	Educational Psychology	3	-
10513302	Evaluations In Schools	3	-
10513317	Classroom Management	3	-

Departments Elective Requirements (6) credit hours

Course No.	Course Title	Credit hrs.	Prerequisite
10513455	Teaching Design	3	-
10513162	Introduction to Psychology	3	-
10513368	Teaching Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Course Descriptions

10221101 General Physics 1

This course introduces the following topics: linear and two-dimensional motions, Newton's applications, scalar and vector quantities, work and energy, momentum, collisions, and circular motion.

10221107 General Physics Lab. 1

This course includes practical experiments in vectors, acceleration of the body on the slanted surface, viscosity, the speed of sound in the air, Newton's Second Law, friction, Law of Conservation of Energy and Collision, simple harmonic motion and Boyle's law.

10221102 General Physics 2

The course highlights the topics of electric force and charge, magnetic field intensity, capacitors, resistors and electrical connectors. The course additionally includes the topics of electric currents, and direct and alternating currents, along with the topics of magnetism, magnetic fields and magnetic force.

10221108 General Physics Lab. 2

The course includes practical experiments in drawing field lines voltage, cathode ray oscilloscope (CRO), Ohm's Law, Wheatstone bridge (AC and DC), resistance and temperature, capacitance (series, parallel, and RC circuit), Earth's magnetic field, Joule's Constant, and the refractive index of glass.

10221203 General Physics 3

This course includes fluids, simple harmonic motion, sound waves and heat laws, gas laws, electromagnetic laws and optics.

10221221 Waves and Optics

This course studies the duality of light, ray optics (which includes reflection, refraction, lenses and mirrors), the wave nature of light (which includes interference and diffraction), resolution optical instruments (such as the microscope, telescope, and Fabry-Perot interferometer), diffraction grating, polarization and holography.

10221213 Physics Laboratory 1

This course includes 12-14 experiments in the lab: E/M, current balance, oscillation of a bar magnet in a uniform magnetic field, Doppler's Effect, radioactive (β) rays, thermodynamics(Cu-Fe), thermocouple, diffraction

grating, Newton's rings, Quincke's interference tube (path difference), photocell, lenses, DC ammeter and voltmeter construction.

10221242 Modern Physics (1)

This course includes an introduction to relativity, particle properties of waves, wave properties of particles, atomic structure, and introduction to quantum mechanics and quantum theory of the hydrogen atom.

10211101 Calculus 1

This course covers the concepts of functions, limits and continuity, limit theorem, continuous functions, examples of derivatives, integrals, definite integrals, first fundamental theorem of calculus, indefinite integrals, areas' calculation, properties of real numbers, functions, curves, limits of trigonometric functions, logarithmic and exponential functions, limits and continuity, derivatives and high order derivatives, implicit differentiation, related rates, applications on the derivative (extreme values, intermediate value theorem), integration (properties of the definite and indefinite integrals), integration by substitution, inverse functions (inverse trigonometric functions, hyperbolic functions, and L' Hôpital's rule), real numbers, the line of even and odd functions, functions calculations, trigonometric functions, inverse functions, functions, real numbers, inequalities, drawing inverse trigonometric functions' curves, limits, limits' properties, limits calculations, infinite limits, continuity, continuity properties, differentiation of trigonometric and inverse trigonometric functions, relation between differentiation and continuity, rules of differentiation, chain rule, differentiation, logarithmic and exponential functions and their derivatives, hyperbolic functions and their derivatives, extreme values, Rolle's theorem, mean value theorems, function space, first derivative test, concavity and second derivative test, drawing functions, related rates problems, and conic sections).

10231101 General Chemistry 1

In this course, the students study the basic concepts in chemistry: the structure of atoms, periodic table, chemical calculations, chemical bonding, forms of compounds, general laws in aqueous solutions chemistry, general laws for gases, thermochemistry and other theoretical subjects.

10231107 General Chemistry Lab. 1

This course includes experiments in general chemistry for training on using the precise tools such as: electronic scale, absorbents, Burette, and others. It also includes some tests using the available tools such as filtration, calibration, gravimetric analysis by using the crucible, as well as practical applications on the laws of gases, empirical formula, water of crystallization, and performing calculations on these experiments.

10231102 General Chemistry 2

The course introduces basic concepts in the properties of solutions, thermodynamics, mechanical interactions, chemical equilibria, acids and bases, acid-base equilibrium in aqueous solutions, solubility balance and complex ions, electrochemistry, and atomic chemistry. There will also be applications to the course.

10231108 General Chemistry Lab. 2

This is an experimental course that includes experiments in chemistry, such as: filtration, calibration, some cases of equilibrium, reaction rate, knowing the chemical formula of an unknown salt, calculating molecular weight, the depression of the freezing point, heat of chemical reaction and heat of neutralization, as well as other renewable experiments.

10231211 Analytical Chemistry

The course deals with the study of the classic chemical analysis methods, such as volumetric and mass analysis. It also includes the study of statistical methods in chemistry.

10231215 Analytical Chemistry Lab

This course includes practical experiences that fit the Analytical Chemistry 23211 course, and it deals mainly with quantitative classic analytical chemistry (the volumetric and mass), as well as safety rules in the laboratories and chemical analysis instruments.

10231231 Organic Chemistry

The course starts with an introduction on hybridization, hydrogen and covalent bonds, polarity of bonds and molecules. Then it addresses the study of the chemical and physical shapes and properties of the cyclic and noncyclic hydrocarbons: alkanes, alkenes, alkynes, halides, and alcohols. It also includes molecular shapes and stereochemistry, and the methods of preparation and the chemical and physical properties, as well as their reaction mechanism.

10231235 Organic Chemistry Lab 1

This course includes a number of experiments which are designed to cover theoretical principles, training on the basic techniques including preparation, finding out the physical constants such as the melting and boiling degrees, separation techniques, recognizing the organic compounds, and practicing some purification techniques, in addition to the preparations of alcohol dehydration and some addition and replacement reactions.

10231321 Inorganic Chemistry

This course deals with the principle concepts of inorganic chemistry. It is a general introduction on the atomic form by using wave mechanics in a semi quantitative manner, and then the atomic shape and the periodic properties.

It also includes a detailed study of molecular symmetry, shapes of molecules and chemical bonds, focusing on the molecular orbital theory, acid-base chemistry, solid-state chemistry, including the ionic compounds and others.

10201101 General Biology 1

The course discusses topics related to the cell, its chemical components, functions and exchange of materials and food.

10201107 General Biology 1 lab

The course deals with the theoretical and practical approaches of the General Chemistry 1 course, providing students with practical experiences through laboratory work so as to enhance the theoretical concepts of General Chemistry 1 course which deals with the chemistry of the cell, the natural properties of the microbes, and the biological operations in the cell.

10201102 General Biology 2

This course includes plant building, plant growth, and plant mechanism. It also focuses on the animal cell and feeding.

10201108 General Biology 2 Lab

The course deals with the theoretical and practical approaches of the General Chemistry 2 course, providing students with practical experiences through laboratory work so as to enhance the theoretical concepts of General Chemistry 2 course which deals with the chemistry of the cell, the natural properties of the microbes, and the biological operations in the cell, and is a complementary of General Biology 2, practically.

10201232 Principles of Genetics

The course addresses some concepts in genetics, the principle methods in genetics and recent discoveries in genetic molecule.

10201258 Biodiversity

The course includes an overview of the historical introduction on life on earth, and the natural choice and classification in biodiversity.

10512331 Methods of Teaching Sciences 1

This course deals with science and its nature and development, its objectives, and its properties. It also deals with the educational goals in the teaching of science, and its importance, and its classifications, and provides the students with forms of scientific knowledge - relating it all to the curriculum of science for the upper basic stage, building integrated lessons, as well as addressing the most important ways to teach Science (dialogue and discussion, lecture, and presentations).

10512341 Methods of Teaching Sciences 2

This course studies the modern teaching methods and strategies applied in the

field of educational sciences, and implementing these methods and strategies in the sense that makes students the center of the teaching educational process and identifying with the ways of alternative assessment and apply them.

10512481 Current Issues and Trends in Teaching Science

The course tackles the main current issues and trends in teaching science in accordance with the international standards built on the constructive theory: the realistic science teaching model, the Wheatly Model, and the Bybee Model. It addresses the strategies that develop critical thinking skills, multiple intelligence and other related subjects.

10513316 Designing and Producing Visual Aids

The course deals with teaching aids, their concepts and stages, and the educational and psychological processes specialized in teaching aids. The course describes the types of teaching aids, their resources, and also includes designing teaching aids that meet the standards of good teaching aids, and how to produce them from local environment materials.

10513411 Methods of Scientific Research and Statistics

The course introduces the measurements of central tendency and dispersion and their function in the fundamental scientific research. Students have an opportunity to recognize the kinds of scientific research and their methods and procedures, in addition to finding research problems and collecting data, analyzing the data and explaining results.

10513211 Practical Teaching 1

The course introduces theoretical aspects of practical teaching which aims at preparing students for various aspects of school work, on both the administrative and the educational sides. The requirements of the course are carried out in a theoretical framework which includes a group of experiences to complement the theoretical aspects students studied in previous terms. The course also provides students with opportunities to know the philosophy of practical teaching, its elements, rules, systems and ethical issues related to teaching profession, in addition to enabling students to know their duties, and rights that are applied in schools.

10513311 Practical Teaching 2

The course includes observation and practical participation in two tracks. The first is done through face-to-face meetings in the university with the instructor of practical teaching, focusing on intended observation aspects, the methods and procedures of gathering data, and analyzing and evaluating it in class settings. The second track is practical, in which students move to a training school for 16 hours. The students observe regular classes and the school setting and then discuss this with the instructor in front of the students as an interaction for objective evaluation and judgment.

10513312 Practical Teaching 3

Students in this course take the responsibility of giving a complete lesson according to the required standards. The student is expected to teach under the supervision of the course instructor, school principal and the educational supervisor for a period of 32 days, giving two classes daily, for a period of 16 weeks. The student is under the supervision of the instructor and applies different activities related to the curriculum assigned by the course instructor and the administration of the cooperating school. The student has to follow the rules and systems of the school and the practical education applied in the university.

10513410 Practical Teaching 4

The course is based on weekly meetings held between students and the supervisor during the term, and by applying duties and activities in the participant school. The duties should be done in not less than 16 hours weekly, in which the student gets used to being independent and able to take responsibilities, think, and criticize; in addition, the student can give feedback in an active way to and from the instructor or supervisor. What the student goes through is discussed, including difficulties and experiences he/she gets through practical application in school. This can be done in a weekly meeting with the university supervisor. The hours amount to 32 practical hours.

10513410 Practical Teaching 5

With the development of experience student gained through stages of training, the student's involvement in teaching and class management increases. Yet, the student needs further follow-up and supervision from instructor and cooperative teacher. The student needs to refer to them to make sure that the plans prepared for application are effective. This is done through 16 face-to-face meetings and 64 real complete lessons, in addition to observing lessons taught by colleagues and the cooperative teacher.

10513420 Practical Teaching 6

This course is an extension to the previous one. The student is required to prepare, organize and apply lessons and teach them independently. The independence level ranges from partial to complete. This is due to judgment from the supervisor and cooperative teacher and with the knowledge of the school principal. In addition to assigning work, students prepare, apply, and analyze tests, and construct remedial work based on the results obtained from the process. The student must teach 20 hours a week, for five weeks (together or separated), for no fewer than 120 hours under the supervision of the cooperative teacher, educational supervisor and cooperative training school principal.

10513430 Action Research in Practical Teaching

This course deals with action research concepts, aims, types, applications, and difficulties in learning and teaching in the classroom and school environment. The student is asked to submit research on one of the problems or difficulties that he faced during his practical teaching, using all the procedures of action research. This is done under the supervision of one of the teachers from the department.

10513111 Introduction to Curriculum

This course involves the development of curriculum, its elements, foundations, designs, plans and application along with educational philosophy and educational theories discussed in the curriculum.

10513220 Educational Readings in English Language

The course includes different types of current readings in English language related to different educational issues. The readings include basic educational concepts. Students deal with them through analyzing, applying them and generalizing in an attempt to build meaningful educational vocabulary. It aims at enriching students' English language acquisition.

10513221 Educational Psychology

The course describes educational psychology and its relation to general psychology; how to apply concepts of behavioral and cognitive schools to the learning process in order to facilitate the learning process; suitable classroom environments to stimulate learning; slow learners, handicapped students, and gifted students; and required abilities to complete the learning process, measure it and evaluate learning and teaching.

10513302 Evaluation in schools

The course aims at introducing students to evaluation; its development, aims, and various evaluative methods of selection standards. It also includes different types of tests -constructing them and analyzing them, and how to evaluate students' educational achievement based on the results obtained.

10513302 Classroom Management

The course deals with the foundation of school management from its different aspects, focusing particularly on scientific and practical aspects. The school is considered to be the place for cooperative efforts from various educational fields. The methods and techniques used show the level of the school's success in fulfilling its mission.

10513455 Teaching Design

The course includes designing daily lessons and identifying related concepts, including cognitive, emotional and psychomotor; and determining activities and methods; evaluation and acknowledging teaching design in applied and social sciences. It also introduces students to tasks in designing and planning.

10513162 Introduction to Psychology

The course introduces a description of theories of psychology and their relation with learning and teaching processes, in addition to introducing students to stages of development and the characteristics of learners. The course also includes a number of educational applications related to theories of psychology.

10513368 Teaching Skills

The course deals with different skills related to teaching process, such as lesson planning skill, and writing educational aims to reflect cognitive and psychological sides---and their different levels. It also includes attracting students' attention, giving lessons, asking questions, class interaction, using teaching aids, classroom management, designing groups, and discussion and evaluation skills.

10513299 Active Learning

The course includes the active learning concept, including its definitions, goals, foundation, characteristics, features, significance and elements. It also includes a suitable classroom environment for active learning, general elements in learning, and strategies of active learning, types (directed lecture, brainstorming, discovery, problem solving, group discussion, role playing, acting, story miming and case study). It includes the role of teacher in active learning, active learning outside the class, critical thinking, and challenges in active learning, in addition to practical applications of active learning in various disciplines.

10513366 Educational Supervision

The course discusses the concept of educational supervision, its different definitions, and the historical development of educational supervision process, the aim for educational supervision, its foundation and importance, the factors affecting educational supervision, the role of the educational supervisor, and the role of the principal as a local supervisor. The course also describes the different types of educational supervision (the authoritative, democratic, clinical, protective, scientific, constructive, purposeful, corrective, creative, developmental, class and variety). Finally, students learn the techniques of educational supervision (classroom visits, illustrative lessons, microteaching, meetings, study sessions, self-evaluation) and problem of educational supervision and its future.

{ Department of Teacher's Training }

In harmony with the University vision for Palestinian community development, and providing it with the professional cadres to build the educational institution and the country, the Curriculum and Instruction Department is trying to apply its visions through:

Vision:

Achieving quality assurance through academic educational programs, cognitive activities and skills that have their applications.

Message:

Excellence in the area of educational sciences and teacher preparation through a research learning environment which helps improve the Palestinian community and protect its identity.

Aims:

The Curriculum and Instruction Department aspires to achieve a number of aims that match its clear educational policy and focuses on the following:

- Teachers' Training, which provides the community with a highly qualified staff and matches the national strategic ambition and standards for training and enhancing teachers.
- Developing students' ability to understand theories and introductions related to curriculum and methods of teaching including: foundations, planning and designing missions, and methods of evaluation and development.
- Introducing students to the foundations and rules of teaching, and providing the opportunities that serve the critical study of methods of teaching, applications and practices.
- Developing students' ability to practice teaching and training through practical education programs which help in facilitating skills of teaching and help students to receive sufficient amounts of guidance and supervision.
- Providing student teachers with the opportunity to practice methods of school life in its various aspects -- the social, cultural, and all other aspects required for him/her to become a successful teacher.

Intended Learning Outcomes (ILOs):

The Curriculum and Instruction Department aims through its programs (Upper Basic Teacher in the following majors: Arabic Language, English Language, Social Studies, Science, Mathematics, and Technology) to prepare well-equipped graduates who can tackle the teaching profession and apply these disciplines, and these future teachers are expected to:

- Be aware of the educational foundations, including the philosophy of teaching, the educational system, Palestinian curriculum, and the rules and ethics of the teaching profession.

- Apply active research to improve the quality of learning and achieve professional development.
- Be able to apply the theories of learning and their educational applications in every field.
- Be able to employ modern educational technology in the learning process in its proper specializations.
- Be able to develop his/her students' thinking skills.

Course Descriptions

10513316 Designing and producing Teaching Aids

The course deals with teaching aids and their concepts, stages, and the educational and psychological processes. The course also describes the types of teaching aids and their resources, and it includes the teaching aids design that meet the standards of the good teaching aids, and their production from local environment materials.

10513411 Methods of Scientific Research and Statistics

The course introduces the measurements of Central Tendency and Dispersion and its function in the fundamental scientific research through providing students with the opportunity to study the kinds of scientific research and its methods, procedures, in addition to helping students to find and identify the research problems, collect the data, and analyze and explain the results.

10513211 Practical Teaching 1

The course introduces the theoretical aspects of practical teaching which aim at preparing students for various aspects of school work, the administrative and educational sides. The requirements of the course are implemented in a theoretical framework which includes a group of experiences to complete the theoretical aspects students study at different stages. The course also provides students with the opportunities to acknowledge the philosophy of practical teaching, its elements, rules, systems and ethical issues related to teaching profession, in addition to enabling students to become to know their duties, and rights.

10513311 Practical Teaching 2

The course includes observations and practical participation in two tracks: the first is accomplished through face-to-face meetings in the university with the instructor of practical teaching focusing on the aspired observational aspects, the methods and procedures of collecting data, analyzing and evaluating it in class settings. The second track is practical, in which students move to school training for (16) hours, where the students attend regular class in school settings and then discuss these observations with the instructor in front of the students as an interaction for objective evaluations and judgments.

10513312 Practical Teaching 3

Students in this course take the responsibility of applying the activity of giving a complete lesson according to the standards. The student is expected to teach under the supervision of the course instructor, school principal and the educational supervisor for a period of (32) days during which s/he gives two classes daily; and for a period of 16 weeks, the student, under the supervision of the instructor, applies different activities related to the curriculum which is assigned by the course instructor and the administration of the cooperative participant school. The student has to follow the rules and systems of the school and practical education applied in the university.

10513410 Practical Teaching 4

The course is based on weekly meetings held between students and the supervisor during the term, through applying duties and activities in the participant school. The duties should be done in not less than (16) hours weekly in which the student gets used to being independent and can take responsibilities, think, criticize, in addition, the student can give feedback in an active way to and from instructor, and supervisor. All that the student goes through is discussed including the difficulties and experiences s/he gets through school practical teaching. This can be done in a weekly meeting with the university supervisor. The hours total 32 practical hours.

10513410 Practical Teaching 5

With the development of experiences students gain through stages of training, the students' involvement in teaching and class management increases. But the student needs further follow up and supervision from the instructor and cooperative teacher. The students need to consult them to make sure that the plans prepared for application are applicable and effective, and this can be accomplished through 16 face to face meetings and 64 real complete lessons in addition to observing lessons applied by colleagues and cooperative teacher.

10513420 Practical Teaching 6

This course is an extension to the previous one. The student is required to prepare, organize and apply lessons assigned to teach independently. The independent level ranges from partial to complete independence, and this is due to role of the cooperative teacher and supervisor judgments and with the knowledge of the cooperative school principal. In addition to assigning students to prepare, apply, and analyze tests and construct remedial work based on the results concluded from the process. Teaching 20 hours is required weekly for five weeks being implemented together or separately; it should not be less than 120 hours under the supervision of the cooperative teacher and educational supervisor and cooperative training school principal.

10513430 Action Research in Practical Teaching

This course deals with action research concept, aims, types, application on problems and difficulties in learning and teaching in the class and school environment. The student is asked to submit a research project on one of the problems or difficulties faced him/her during practical teaching using all procedures of the action research, and this is done under the supervision of one of his/ her instructors.

10513111 Introduction to Curriculum

This course involves the development of curriculum concept, its elements, foundations, designs, plans and application along with the educational philosophy and educational theories addressed in the curriculum.

10513220 Educational Readings in English Language

The course includes different types of current readings in the English language related to different educational issues; the readings include basic educational concepts, and students are expected to deal with them through analysis, application and generalization in an attempt to build meaningful educational vocabulary, and aims at enriching students' English language acquisition.

10513221 Educational Psychology

The course describes the educational psychology and its relation to general psychology, how to apply concepts of behaviorism and cognitivism in the learning process in order to facilitate the learning process, the suitable classroom environment for learning and slow child learners, handicapped, gifted and the required abilities to complete the learning process, measure it and evaluate learning and teaching.

10513302 Evaluation in schools

The course aims at introducing students to evaluation, its development, aims, and various evaluative methods of selection standards. It also includes different types of tests, and test construction, analysis and how to evaluate students' educational achievements based on the results obtained.

10513302 Classroom Management

The course deals with the foundations of school management from its different aspects focusing particularly on giving attention to scientific and practical aspects. The school is considered the place where efforts cooperate for those working in various educational fields. The methods and techniques used show the level of its success in fulfilling the mission placed on the school for learning and teaching.

10513455 Teaching Design

The course includes designing daily lessons and identifying related cognitive, emotional and psychomotor concepts and determining activities, methods, evaluation and acknowledging teaching design in applied and social sciences. It also includes introducing students to tasks that the teacher implements in designing and planning.

10513162 Introduction to Psychology

The course introduces a description of psychological theories and their relation to learning and teaching processes, in addition to introducing students to the stages of development and the characteristics of learners. The course also includes a number of educational applications related to theories of psychology.

10513368 Teaching Skills

The course deals with different skills related to the teaching process, such as lesson planning skills, writing educational aims from the motto, and cognitive and psychological perspectives and their different levels, it also includes attracting students; attention, giving lessons, asking questions, as well as class interaction, using teaching aids, classroom management, designing groups, discussion and evaluation skills.

10513299 Active learning

The course includes active learning concept including its definitions, goals, foundation, characteristics, features, significance and elements. It also includes the suitable classroom environment for active learning, general elements in learning, and strategies of active learning, types (directed lecture, brainstorming, discovery, problem solving, group discussion, role playing, acting, story miming and case study). It also includes the teacher's role in active learning, active learning outside the class, critical thinking, challenges in active learning, in addition to practical application of active learning in various disciplines.

10513366 Educational Supervision

The course discusses the concept of educational supervision, its different definitions, and the historical development for educational supervision process, the aim for educational supervision, its foundation and importance, the factors affecting educational supervision, the role of educational supervisor, and the role of the principal as a local supervisor. The course also describes the different types of educational supervision, the authoritative, democratic, clinical, protective, scientific, constructive, purposeful, corrective, creative, developmental, class and variety. The techniques of educational supervision (classroom visits, illustrative lessons, micro-teaching, meetings, study sessions, self-evaluation) and the problems of educational supervision and its future.

10513215 Computer in Education

As the title suggests, the course focuses on acquainting students with computer hardware and software, areas of application, basic operations of computer system, data processing, introduction to programming languages and computer applications, files, matrices, their significance, and their digital and letter types, information storage and retrieval.

{ Upper Basic Teacher
(Teaching English Language) }

University Requirements

Free Courses		4
Department Requirements	Compulsory	93
	Elective	6
Total Credit Hours		121

Course No.	Course Title
1000323	English Language 2

Compulsory Requirements (93 credit hours)

Students must take all of the following courses:

Course No.	Course Title	Credits	Prerequisites
10306001	Methods of Teaching English Grammar	3	-
10306002	Oral Communication 1	3	-
10306003	Oral Communication 2	3	10306002
10306004	Phonetics and Phonology	3	10306116
10306005	Writing 1	3	-
10306006	Writing 2	3	10306005
10306007	Literature in Education	3	-
10306008	Introduction to Translation	3	10306006, 10306001
10306009	Reading 1	3	-
10306010	Advanced Reading	3	10306009
10514318	Methods of the English Language	3	-
10306116	Introduction to Linguistics	3	-
10306011	Novel and Short Story	3	10306007
10306012	Drama in Education	3	10306007
10306131	Semantics	3	10306116
10306013	Poetry	3	10306007
10514314	Principle Methods in Teaching the English Language	3	-
10514315	Principles and Methods in Teaching English as a Foreign Language	3	10514314
10514413	Current Issues in Teaching the English Language	3	10514314
10513316	Design and Production of Educational Aids	3	-
10513411	Statistics and Research Methodology	3	-
10513215	Computer in Education	3	-
10513211	Practical Training 1	1	-
10513311	Practical Training 2	1	10513211
10513312	Practical Training 3	1	10513311
10513313	Practical Training 4	1	10513312
10513410	Practical Training 5	2	10513313
10513420	Practical Training 6	3	10513410 or synchronized
10513430	Active Research in Practical Training	3	10513420 or synchronized
10513111	Introduction to Curriculum	3	-
10513220	Educational Readings in English	3	-
10513221	Educational Sociology	3	-
10513302	Evaluation in Schools	3	-
10513317	Classroom Management	3	-

Department Electives (6 credit hours)

Students must take two of the following courses:

Course No.	Course Title	Credits	Prerequisites
10513455	Educational Planning	3	-
10513162	Introduction to Psychology	3	-
10513368	Teaching Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Course Descriptions

10306001 Methods of Teaching English Grammar

This course deals with English language grammar. Areas of focus include proper sentence structure and grammatical mistakes found in both written and oral communication. The course also teaches students to critically analyze English grammar.

10306002 Oral Communication 1

The course seeks to develop grammatical precision in oral communication. Students practice sound grammatical structures and suitable vocabulary with various oral activities, such as oral assessments, role playing, and storytelling. The course focuses on interaction between individuals and groups, developing critical thinking skills, and using classroom debates to produce dialectic and active discussions.

10306003 Oral Communication 2

This course focuses on oral communication and effective listening. Students will use the language in planned and unplanned discussions, expressing basic needs, and interacting with academic texts. In addition, the course concentrates on oral presentations after the students master the required language skills.

10306004 Phonetics and Phonology

This course deals with different concepts of phonology. Students will learn about the acoustic system and the dynamism of phonetic production. They will also learn to distinguish between silent and spoken letters with particular emphasis on the phonetic difficulties Arab students face. The course also addresses the rhyme, melody, and tone of spoken English. Additionally, the relationship between phonetics and phonology is addressed.

10306005 Writing 1

The course focuses on the students' writing skills at the level of sentence writing. The course introduces them to the various types and models of sentence structure in English, along with the process of linking sentences together and writing complex sentences. It focuses as well on using outlines and preparing students to distinguish between complete, incomplete, and vague sentences.

10306006 Writing 2

This course covers the skills of writing paragraphs and other short compositions. Students learn how to write texts in an acceptable style that focuses on the reader and objective. The course also deals with different purposes of writing, such as comparison, description, and narration. The course trains students to use clear and correct sentences, distinguish between main and secondary (subordinate) ideas, and brainstorm in order to write coherent, flawless, and well-written texts. Students are also trained to evaluate their work as well as their colleagues' work.

10306007 Literature in Education

The course displays various patterns of literature, and the student is asked to study texts representative of various literary genres, such as fiction, drama, poetry, and autobiographies. The purpose is to develop their skills in savoring literature by a broad selection of literary readings. The course focuses on using active learning activities, such as classroom group discussions, to improve students' abilities in evaluating literary works and to make clear the importance of classroom participation in savoring literature.

10306008 Introduction to Translation

The course deals with the basic rules of translation in Arabic and English, and it provides practical methods to preserve the meaning of the original text. The course also focuses as on classroom translation attitudes, especially concerning individual differences among learners in speech structure. Furthermore, the course evaluates the impact of the cultural differences in translation and presents an overview of different theories in translation.

10306009 Reading 1

This course focuses on developing comprehension skills, vocabulary, and understanding of themes in the text. Students will also learn the distinction between literal and non-literal interpretation, how to summarize the main idea of a text, and the most important reading techniques.

10306010 Advanced Reading

This course builds upon the Reading 1 course. It focuses on advanced reading techniques and strategies to help students become better readers and thinkers. The course also studies the principles of critical reading and critical thinking, using text analysis to learn about facts, fallacies, allegations, and arguments. The course also works on the discourse, addressing higher level cognitive and interpretative skills such as analysis, synthesis, and evaluation. Rhetorical patterns are analyzed using a variety of texts, including poetry, short stories, novels, and selections from magazines and newspapers.

10514318 Palestinian English Language Curriculum

This course studies the new Palestinian English curriculum for grades 1-12. It focuses on the appropriateness of the curriculum for each grade and the suitability for real life situations. Areas of analysis include the linguistic activities and skills highlighted in the curriculum, the effectiveness of the assessment methods, the expectations of the Ministry of Education, and the appropriateness of content culturally and socially for the Palestinian community.

10306116 Introduction to Linguistics

This course deals with the main concepts in linguistics, the study of language. Key aspects of linguistics include acoustics, phonology, semantics, and syntax.

10306011 Novel and Short Story

This course deals with different genres of fiction. Students learn how to critically analyze and write critical assessments of the stories studied. Narration techniques are discussed throughout the course. Discussion focuses on what techniques the author uses in his story telling, how narration is being employed to represent the story, the effect of the tone of voice, and how the protagonist and other characters of the story are developed.

10306012 Drama in Education

This course provides an introduction to the principles and methods of drama writing through an accurate reading of selected plays representing most literary periods. The course also teaches students how to savor drama and how to use drama to enrich students' cultural, mental, and spiritual lives.

10306131 Semantics

This course introduces students to the basic concepts in semantics, such as, reference and sense, sense relations, word meaning, sentence meaning and utterance, and propositions. Students will also be introduced to the nature of logic and interpersonal meaning.

10306013 Poetry

This course introduces the basics of poetry. Students read a wide-ranging selection of poetry representing the different historical eras. Students learn how to savor poetic texts and link them to life.

10514314 Principle Methods in Teaching the English Language

This course is considered a training course in the teaching of English. Students practice and develop educational skills for teaching listening, conversation, reading, and writing. The course also looks at research in applied linguistics, the problems of education, and language teaching.

10514315 Principles and Methods in Teaching English as a Foreign Language

This course covers the basic strategies of teaching the English language in order to develop the ability to teach writing skills, vocabulary, grammar, and pronunciation. The course also looks at modern theoretical principles in teaching the English language.

10514413 Current Issues in Teaching the English Language

The course deals with the current issues related to teaching English. The course looks at the concept, objectives, contents, steps, models, strategies, and methods of cooperative learning and compares it to competitive learning and individual learning. The teacher's role in cooperative learning, cooperative skills, the uses of cooperative learning, and its applications in teaching English are also discussed.

10513316 Design and Production of Educational Aids

The course deals with the use of teaching aids. In particular, the course addresses the concept, the educational and psychological operations involved, and the types of the teaching aids. The course includes designing a teaching aid and using everyday materials to produce it.

10513411 Statistics and Research Methodology

The course teaches students how to employ statistical methods in the basics of research methodology. Students will study the types, steps, and methods of research. Moreover students will choose a research problem, collect and analyze data, and then interpret the results.

10513215 Computer in Education

This course describes the historical evolution of technology in education. In particular, the course addresses international experiences using computers, computer programming languages in education, advantages of computers in education, and various administrative and educational applications. It also focuses on using the internet to support education. Additionally, this course discusses assessing global sources of information, collaborative learning environments on the internet, and conducting research on the internet. Practically, it aims at providing students with the necessary skills to help them in designing and producing educational multimedia software, such as practice exercises, tutorials, simulations, educational games, and dialogues using PowerPoint, Photo Story 3 for Windows, or Movie Maker.

10513211 Practical Training 1

This course covers the theoretical aspects of practical training to prepare students for administrative and educational positions. This course complements the theoretical training of earlier courses and prepares students for various classroom activities. The course also provides the opportunity for students

to become familiar with the philosophy of practical training, its components, rules, principles, ethics, as well as to become familiar with duties, rights, and regulations applied at schools.

10513311 Practical Training 2

This course covers observations and limited teaching experiences. Firstly, students will meet with the course instructor at the university 16 times, focusing on purposeful constructive observation, collecting data, and data analysis. Secondly, students move to schools to receive practical training (16 hours). Students observe the classroom and school environment and then discuss their observations with the classroom teacher.

10513312 Practical Training 3

During this course, the student teaches in a classroom setting in accordance with the standards required. The student is expected to work under the supervision and responsibility of the instructor, principal of the partner school, and the educational supervisor for 32 days, teaching an average of two periods per day. Furthermore, for 16 weeks the student also studies the curriculum with the instructor and the partner school management.

10513313 Practical Training 4

Students will meet weekly with the supervisor during the semester. Students are required to teach in a classroom setting at least three hours for 16 weeks in the partner school. The student becomes accustomed to independence, taking on responsibility, reflection and criticism. Students learn to actively make use of feedback from the supervising instructor. In addition, students discuss their difficulties and experiences in the weekly meeting with the supervising instructor at the university. Students are to teach for a total of 32 hours.

10513410 Practical Training 5

Building upon their experiences from earlier stages of practical training, students are more engaged in the teaching process and classroom leadership. Students continue to teach under the supervision of both the supervisor and cooperative teachers. Students receive feedback upon their lesson plans from them. Throughout the semester, students meet with their supervisor for 16 hours, teach 64 full hours, and observe his classmates and co-teachers.

10513420 Practical Training 6

This course is an extension of Practical Training 5. Students are required to independently prepare, organize, and implement the lessons he is asked to teach. The level of independence varies from student to student, based upon the judgment of the co-teacher, supervisor, and principal. Students received an individualized plan of improvement in accordance with their teaching abilities. Students teach 20 hours per week for 5 weeks (either consecutive or non-consecutive). They must teach at least 120 hours under supervision.

10513430 Action Research in Practical Training

This course covers the concept, objectives, types, and applications of Action Research in a school environment. Then students apply the steps of Action Research to one of the issues they faced during their practical training under the supervision of one of the department's instructors.

10513111 Introduction to Curriculum

This course includes the evolution of the concept of the curriculum, its components, design, planning, examples, and educational philosophies and theories discussed in curriculum development.

10513220 Educational Readings in English

The course deals with modern texts in English on various educational topics. Students read about major educational concepts and analyze, apply, and generalize what they read in order to develop a set of meaningful educational vocabulary to enrich their English language vocabulary.

10513221 Educational Psychology

This course describes educational psychology and its relation to general psychology. Students study methods for applying the concepts of behaviorism and cognitivism in education to facilitate the learning process. Also, the course discusses how to create a classroom atmosphere conducive for learning, teach children with physical and learning disabilities, and teach gifted and talented students.

10513302 Evaluation in Schools

This course introduces students to evaluation in schools. In particular, students study the development, objectives, and different means of evaluation. Also, students learn different types of evaluation, methods of their construction and analysis, and assessing academic achievement.

10513317 Classroom Management

This course examines classroom management focusing on both the scientific and practical aspects. Classroom management plays a large part in determining teacher success.

10513455 Lesson Design

This course covers the design of daily lessons and discusses related concepts. Students learn about cognitive, emotional, and psychomotor objectives. The course also studies activities, methods, evaluation, and general teaching patterns in applied sciences and humanities. The course introduces students to the tasks of lesson planning.

10513162 Introduction to Psychology

This course covers theories of psychology and their relation to the processes of learning and education. The course also studies the stages of childhood development and how these stages affect learning. Finally the course focuses on educational applications of theories of psychology.

10513368 Teaching Skills

This course deals with several teaching skills, such as lesson preparation; setting cognitive, emotional, and kinesthetic educational goals; maintaining students' attention; posing questions; classroom interaction; employing teaching aids; classroom discipline; group formation; debate; and lesson evaluation.

10513299 Active Learning

This course deals with the concept of active learning in terms of its definition, objectives, characteristics, nature, importance, and components. It also discusses the suitable classroom environment for active learning; the strategies and models of active learning (oriented lectures, brainstorming, discovery, problem solving, active group discussion, role playing, acting, story, simulation, and case study); the teacher's role in active learning; active learning outside the classroom; active learning and effective thinking; the challenges of active learning; and applications of active learning principles in different fields of study.

10513366 Educational Supervision

This course studies the concept and practice of educational supervision. In particular, the course addresses the different definitions, historical evolution, objectives and principles, importance, components, tasks, and roles of educational supervision. The course also describes teaching styles, methods of educational supervision (classroom observations, demonstration lessons, meetings, seminars, research, and self-evaluation), and the problems of educational supervision and its future.

{Upper Basic Teacher - Technology}

University Requirements		18
Free Courses		4
Department Requirements	Compulsory	98
	Electives	6
Total		126

English 2 (1000322)

Department Requirements (Compulsory) (98) credit hours

Course No.	Course Title	Credit hrs.	Prerequisites
10211262	Principles of Engineering	3	-
10221105	General Physics1 (Social Sciences Dep.)	3	-
10221106	General Physics 2(Social Sciences Dep.)	3	10221105
10221107	General Physics (1) -Lab	1	10221105 or Synchronized
10221108	General Physics (2) -Lab	1	10221107,10221106 or Syn.
106211001	Engineering Workshop	1	-
106211011	Engineering Workshop- Practical	0	-
106061021	Engineering Drawing	3	-
106412071	Electrical Engineering	3	-
106313661	Engineering Metrology and Standards	3	-
106562341	Environmental and Energy Engineering	3	-
106414881	Engineering Installations and Safety Systems	3	-
106711111	Introduction to Programming and Problem Solving 1	3	-
106711121	Introduction to Programming and Problem Solving 2	3	106711111
106712111	Data Structures	3	106711121
106712121	Introduction to Algorithms	3	106712111
106812711	Application Software	3	106711121
106713011	Database	3	106712111
106812721	Web Design	3	106711121
106713031	Computer Graphics	3	106712111
10516209	Science, Technology and Society	3	-
10516309	Methods of Teaching Technology	3	10516209
10516409	Current Issues and Trends in Teaching Technology	3	10516309
10516204	Educational Methods	3	-
10513316	Design and Production of Teaching Aids	3	-
10513411	Methods of Scientific Research and Statistics	3	-
10513215	Computer in Education	3	-
10513211	Practical Teaching 1	1	-
10513311	Practical Teaching 2	1	10513211
10513312	Practical Teaching 3	1	10513311
10513313	Practical Teaching 4	1	10513312
10513410	Practical Teaching 5	2	10513313
10513420	Practical Teaching 6	3	10513410 or Sync.
10513430	Action Research in Practical Teaching	3	10513420 or Sync.
10513111	Introduction to Curriculum	3	- Or Sync.
10513220	Educational Readings in English Language	3	-
10513221	Educational Psychology	3	-
10513302	Evaluation in Schools	3	-
10513317	Classroom Management	3	-

Department Electives: (6) credit hours

Course No.	Course Title	Credit hrs.	prerequisites
10513455	Teaching Design	3	-
10513162	Introduction to Psychology	3	-
10513368	Teaching Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Course Descriptions:

10211262 Principles of Engineering

This course includes a description of plane geometry: Hilbert Axioms, congruence, equivalence, similarity, circles, and geometric transformations. It also describes solid geometry: the relationship of a straight line to another and the relationship of the line to the plane, and to another plane, projection, and the three pillars. In addition, the course studies the following models: prism, pyramid, cylinder, cone, ball, and theories related to models.

10221105 General Physics 1 (for the Social Sciences Faculty)

This course studies vectors, movement, force, Newton's laws, momentum, mechanical energy, work, power, gravity and thermodynamics.

10221106 General Physics 2 (for the Social Sciences Faculty)

This course includes the concepts of electrical charge, electric power and electric field, Gauss's law, voltage, capacitance, current and electrical resistance, circuits and resistance, alternating current, sources of the magnetic field, magnetic induction, induction and light radiation.

10221107 General Physics 1 (lab)

This involves a number of selected experiments in mechanics.

10221108 General Physics 2(Lab)

This includes a number of selected experiments in electricity and magnetism.

10621100 Engineering Workshops

This course is designed to focus on the various types of handicrafts such as: manual sheet metal fabrication, electrical wiring, plumbing, central heating and welding, wooden handicrafts, and iron processing machines such as lathes, milling machines, and wood trimming machines. In addition, the course introduces information about the theory of materials, its properties, uses and production methods, hardening, industrial safety, the various ways of welding, cutting tools, cooling tools, and the types of wood, and their maintenance methods and properties.

10621101 Engineering Workshop- Practical

This course is designed to develop basic skills in fields of manual sheet metal fabrication, welding processes, and household electrical circuits. Students will perform in individual and practical exercises. In addition, the course

introduces information about the theory of materials and its property uses and production methods. This also includes the hardening, industrial safety, various types of welding, cutting and cooling tools and their maintenance methods and properties. The student is also expected to complete practical training of the above mentioned.

10606102 Engineering Drawing

This course covers several topics: basic drawing techniques and materials for orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

10641207 Electrical Engineering

This course is designed to focus on the principles of electrical engineering, Ohm's law, electric circuits, direct current and alternative current, an introduction in electronics, semiconductors, phases, transistors, electronic circuits, logic gates, and lightening and electrical wiring.

10631366 Engineering Metrology and Standards

This course is designed to cover the following topics: error analysis, calibration of measuring devices, tolerances, measurements of pressure, temperature, force flow, and power. The course also covers the process of industrial specification and standardization, national and international standards, and coding systems.

10656234 Environmental and Energy Engineering

This course is designed to describe the different sources of non-renewable energy such as petroleum, and renewable energy such as hydropower, wind power and solar energy. In addition, the course introduces the methods of energy conservation, the environment and its problems, the environmental protection, air pollution, the greenhouse effect, the increase in the temperature of the globe, and the erosion of the ozone layer, as well as the various environmental pollutants.

10641488 Engineering Installation and Safety Systems

This course is designed to describe the basic principles and design of each of the following systems: power protection systems, domestic and industrial wiring, solving the speed of light and brightness, lamps and power management systems, electrical grounding, the dangers of electricity, and the preventions and safety rules to avoid electric shock and electric fire.

10671111 Introduction to Programming and Problem Solving I

This course is designed to introduce the principles of programming, data representation and problem solving by using sophisticated programming language such as: input and output, expressions and calculations, condition statements (If-) and repeat command, one dimensional array, name-processing, functions, variables use, recursion, and two dimensional arrays.

10671112 Introduction to Programming and Problem Solving 2

This course is considered an extension to the Introduction to Programming and Problem Solving 1(10671111 course) and it covers advanced topics such as: indexes/ indicators, records, files, groups and entities in order to prepare students for the programming aspects of many courses within the field of technology.

10671211 Data Structure

This course is an introduction to various data structure including lists, stacks, queues, and trees, binary trees, and recursion. In addition, the course introduces an analysis and implementation of data structures recursion, sorting, searching, and hashing.

10671212 Introduction to Algorithms

This course is designed to introduce students to the analytical methods of algorithms complexity and some methods of design and use.

10681271 Application Software

This course introduces students to modern software packages which apply to different fields of interactive educational programs.

10671301 Databases

This course is designed to introduce students to database concepts, and the use of the relational model in constructing database systems as well as the application in the educational database and taking advantage of them.

10681272 Web Design

This course is designed to introduce students to the basics of networking concepts and internet services, the principles of creating influential web pages and organizing site content, and how to create interactive and customized web pages. In addition, the course introduces the types of constituent elements of the web pages, as well as learning some programming languages and popular programs which are used in web design and development which cover how to insert charts, models, frames, images, multimedia and dynamic effects within the web page.

10671303 Computer Graphics

This course begins with an introduction to the principles, algorithms and devices for construction and display of computer-generated images, interactive graphic techniques, vector, chart, and curve generations, applications and transformations in 2D and 3D.

10516209 Science, Technology and Society

This course focuses not only on the role of technology as an organized and intellectually comprehensive and integrated process of social change and

development, but also on the role of science and technology in societal growth and development. The course also addresses some contemporary issues relating to the impact of science, technology and society on one another, and their implications on the educational system.

10516309 Methods of Teaching Technology

This course addresses ancient and modern teaching methods at different stages: lecturing, in terms of the areas of use and preparation, application, strengths and weaknesses; their areas of development; the way of discussion in computer teaching, in terms of their importance and types; and their preparation, implementation, judgment, in addition to the methods of dialogue, in terms of the types and their advantages and applications. The course also introduces the methods of discovery in terms of nature, characteristics and types and their application, the application constraints, and the methods in solving problems, in terms of definition, importance and steps.

10516409 Contemporary Issues and Trends in Teaching Technology

This course is designed to address many of the issues and topics related to information and communication technology and its applications in education, alongside with its ethics and intellectual property law, the visual culture and its laws, artificial intelligence and the virtual reality and other innovations. It also includes topics such as the implications of information and communication technology employment in the sectors of society, the implications of on education, as well as E- learning schools, communities without schools, and mobile- learning, besides the use of social programs on the Web in education.

10516204 Application Software

This course deals with the concept of education technology in the curriculum of education in the Information Age. In addition to multimedia technology being a novel technology, it addresses a number of topics related to the educational technologies in the field of special education, and it contributes to these techniques in the treatment of individual differences. Additionally, the course addresses design software of educational and instructional computerized materials that use texts, graphics, images, audio and video from the perspective of some of the theories of learning and production of such software materials. Also, the search in the methods of educational multimedia programs evaluation, and the design of educational software using a number of programs for editing texts, audio and video.

10513316 Designing and Producing Teaching Aids

The course deals with teaching aids, its concepts, stages and the educational psychological processes specialized in teaching aids. The course describes the types of teaching aids, and its resources; and the course includes designing teaching aids that meets the standards of the good teaching aids, and producing it from local environment materials.

10513411 Methods of scientific research and statistics

The course introduces the measurements of central tendency and dispersion and its function in fundamental scientific research through providing students with opportunity to know the kinds of scientific research and its methods, procedures, in addition to helping students find research problems and identifying them, collecting data, analyzing it and explaining results.

10513215 Computer in Education

This course describes the historical evolution in the computer use in education, the international experiences of its usage, the computer programming languages in education, the advantages of the computer in education, and the various applications in both the administrative and educational fields. It also focuses on using the internet to support the process of learning and education. Also among the topics this course discusses: assessing global sources of information, the collaborative learning environment on the internet, and searching and restoring of information. Practically, it aims at providing the students with the necessary skills to help them in designing and producing the educational multimedia software based on the teaching design principles. The produced software includes patterns of known software, like exercise and practice, tutorial, simulation, educational games, dialogue using the authorial tools such as PowerPoint, Photo Story 3 for Windows, or Movie Maker.

10513211 Practical Teaching 1

The course introduces theoretical aspects of practical teaching which aims at preparing students for various aspects of school work, the administrative and educational sides. The requirements of the course are done in a theoretical framework in which it includes a group of experiences that complete the theoretical aspects students studied in different terms. The course also provides students with opportunities to know the philosophy of practical teaching, its elements, rules, systems and ethical issues related to teaching profession, in addition to enabling students to know their duties, rights that are applied in schools.

10513311 Practical Teaching 2

The course includes observation and practical participation in two tracks. The first is done through face-to-face meetings in the university with the instructor of practical teaching focusing on the intended observation aspects, the methods and procedures of gathering data, and analyzing and evaluating it in a class setting. The second track is the practical part, in which students move to school training for 16 hours; the students observe regular classes and the school setting and then discuss these observations with the instructor in front of the students as an interaction for objective evaluations and judgments.

10513312 Practical Teaching 3

Students in this course take the responsibility of applying the activity of giving a complete lesson according to the standards requires. The student is expected to teach under the supervision of the course instructor, school principal and the educational supervisor for a period of 32 days giving two classes daily; and for a period of 16 weeks, the student is under the supervision of the instructor and applies different activities related to the curriculum assigned by the course instructor and the administration of the cooperative participating school. The student has to follow the rules sand systems of the school and the practical education learned in the university.

10513410 Practical Teaching 4

The course is based on weekly meetings held between students and the supervisor during the term, by applying duties and activities in the participant school. The duties should be done in not less than 16 hours weekly, in which the student gets used to being independent and able to take responsibility, think, criticize, and give feedback in an active way to and from the instructor/supervisor. The student's experiences in the practical training, positive and negative are discussed. This is done in a weekly meeting with the university supervisor. The hours count for 32 practical hours.

10513410 Practical Teaching 5

With the development of experience student gained through stages of training, the student's involvement in teaching and class management increases. Yet, the student needs further follow-up and supervision from the instructor and cooperative teacher. The student needs to refer to them to make sure that his intended lesson plans are effective, and this is done through 16 face-to-face meetings and 64 complete lessons, in addition to observing lessons applied by colleagues and the cooperative teacher.

10513420 Practical Teaching 6

This course is an extension to the previous one. The student is required to prepare, organize and apply lessons and is required to teach them independently. The level of independence ranges from partial to complete. This depends on the judgments of the cooperative teacher and the supervisor; and is done in conjunction with the school principal. In addition to assigning work, students prepare, apply, and analyze tests and construct remedial work based on the results obtained from the process. The student must teach 20 hours a week for five weeks, together or separated; there should be no fewer than 120 total hours under the supervision of the cooperative teacher, educational supervisor and cooperative training school principal.

10513430 Action Research in Practical Teaching

This course deals with the action research concept, and the aims, types,

application of problems and difficulties in learning and teaching in the class and school environment. The student is asked to submit research on one of the problems or difficulties s/he faces during the practical teaching using all procedures of the action research, and this is done under the supervision of one of the teachers from the department.

10513111 Introduction to Curriculum

This course involves the development of curriculum, its elements, foundations, designs, plans and applications, along with educational philosophy and educational theories discussed in the curriculum.

10513220 Educational Readings in English Language

The course includes different types of current readings in English language related to different educational issues. The readings include basic educational concepts. Students deal with them through analysis, application and generalization in an attempt to build meaningful educational vocabulary, and it aims at enriching students' English language acquisition.

10513221 Educational Psychology

The course describes educational psychology and its relation to general psychology, how to apply the concepts of behavioral and cognitive schools in learning process to facilitate the learning process, the suitable classroom environment for learning and especially for slow learners, handicapped students, and gifted students; and the required abilities to complete the learning process, measure it and evaluate learning and teaching.

10513302 Evaluation in Schools

The course aims at introducing students to evaluation, its development, aims, and various evaluative methods of selection standards. It also includes different types of tests, constructing tests, analyzing them and how to evaluate students' educational achievement based on the result achieved.

10513302 Classroom Management

The course deals with the principles of school management from its different aspects, focusing particularly scientific and practical aspects. The school is considered to be the place where multidisciplinary efforts take root. The methods and techniques used show the level of the school's success in fulfilling the mission placed on schools for learning and teaching.

10513455 Teaching Design

The course includes designing daily lessons and identifying related concepts - including cognitive, emotional and psychomotor, and determining activities, methods, evaluation and acknowledging teaching design in applied and social sciences. It also includes introducing students to tasks teachers implement in designing and planning.

10513162 Introduction to Psychology

The course provides a description of theories of psychology and its relation with learning and teaching processes, in addition to introducing students to the stages of development and the characteristics of learners. The course also includes a number of educational applications related to theories of psychology.

10513368 Teaching Skills

The course deals with different skills related to the teaching process, such as lesson planning skills, writing educational aims in the cognitive, motto and psychological sides and their different levels. It also includes attracting students' attention, giving lessons, asking questions, class interaction, using teaching aids, classroom management, designing groups, and discussion and evaluation skills.

10513299 Active Learning

The course introduces the active learning concept, including its definitions, goals, foundations, characteristics, features, significance and elements. It also includes a suitable classroom environment for active learning, general elements in learning, strategies of active learning, and its types (directed lecture, brainstorming, discovery, problem solving, group discussion, role playing, acting, story miming and case study). It also includes the role of the teacher in active learning, active learning outside the class, critical thinking, and challenges in active learning, in addition to practical application of active learning in various disciplines.

10513366 Educational Supervision

The course discusses the concept of educational supervision, its different definitions, and the historical development for educational supervision process, the aim for educational supervision, its foundation and importance, the factors affecting educational supervision, the role of educational supervisor, and the role of the principal as a local supervisor. The course also describes the different types of educational supervision (the authoritative, democratic, clinical, protective, scientific, constructive, purposeful, corrective, creative, developmental, class and variety), the techniques of educational supervision (classroom visits, illustrative lessons, microteaching, meetings, study sessions, self-evaluation), and the problem of educational supervision and its future.

{ Elementary Education }

Vision:

Preparing an academically- professionally- and scientifically-equipped teacher who will uphold the national and international standards of the teaching profession.

Mission:

Providing the Palestinian and regional society with professionally- and educationally-equipped teachers who can prepare the future generation to face today's challenges.

Curriculum Outline:

Hours	Requirements
90	Department Compulsory Requirements
12	Department Elective Requirements
18	University Compulsory Requirements
4	Free Courses
124	Total

A- Compulsory Requirements (90) credit hours:

Course #	Course Title	Credit hrs.	prerequisites
10501111	Methods of Elementary Education in Palestine	3	-
10501112	Psychological and Educational Foundations	3	-
10501113	General Elementary Education Teaching Methods	3	-
10501114	Ethics	3	-
10501110	Civic Education	3	-
10501217	Classroom Management and Organization	3	10501113
10501218	Methods of Teaching Arabic Language 1	3	10501111,10501112,10501113
10501219	Methods of Teaching Islamic Education 1	3	10501111,10501112,10501113
10501220	Methods of Teaching Mathematics 1	3	10501111,10501112,10501113
10501211	Practical Teaching 1	1	-
10501225	Methods of Teaching Science and Health 1	3	10501111,10501112, 10501113
10501227	Methods of Teaching Social Sciences 1	3	10501111,10501112, 10501113
10501212	Practical Teaching 2	1	10501211
10501244	Educational Psychology in Elementary Education	3	10501112,10501113
10501311	Practical Teaching 3	1	10501212
10501332	Children's Problems and Behavior Adjustment	3	10501111,10501112
10501329	Methods of Teaching Arts	3	10501111,10501112, 10501113
10501330	Education Technology for Elementary Education	3	-
10501318	Methods of Teaching Arabic Language 2	3	10501218
10501325	Methods of Teaching Science and Health 2	3	10501225
10501320	Methods of Teaching Mathematics 2	3	10501220
10501312	Practical Teaching 4	1	10501311
10501313	Computer Educational Applications	3	-
10501410	Current Issues and Trends in Elementary Education	3	10501325,10501320,1050318
10501411	Practical Teaching 5	2	10501312
10501441	Scientific Research and Statistics	3	-

Course #	Course Title	Credit hrs.	prerequisites
10501421	Drama in Education	3	10501112,10501111
10501424	Methods of Teaching Physical Education	3	10501112,10501111
10501245	Educational Readings in the English Language for the Elementary Stage	3	-
10501440	Educational Evaluation in the Elementary Stage	3	10501318,10501325,10501320
10501421	Teaching Design	3	10501111
10501412	Practical Teaching 6	3	10501411
10501413	Action Research	3	10501412

B- Elective Courses (12) credit hours

Course No.	Course Title	Credit hrs.	Prerequisites
10501250	Environment Education in Palestine	3	-
10501351	Integrated Curriculum in Teaching	3	
1 0501352	Collective Education	3	
10501253	Guidance and Psychology Counseling	3	10501112
10501454	Thinking Skills	3	10501111
10501455	Learning Difficulties	3	10501112
10501456	Civics Education	3	10501112
10501357	Methods of Teaching Social Education 2	3	10501219
10501358	Psychology of Play	3	-

Course Description:

10501111 Methods of Elementary Education in Palestine

This course is designed to introduce the educational system in Palestine, in terms of: nature, importance, philosophy, problems, and the factors influencing it. It also introduces a description of the elementary stage curriculum in terms of fundamentals, contents and aspects of organization.

10501112 Psychological and Educational Foundations

This course includes a description of the psychological and educational foundations and their applications in the elementary stage, including the relevant concepts, such as: Psychology and its fields, Growth, learning, Motivation, Intelligence, Education, Functions and Objectives, types and their relationships to culture and society. The course as well includes methods of employment the first elementary stage

10501113 General Elementary Education Teaching Methods

This course introduces students to different teaching strategies and methods emanated from them, and the factors that determine teachers' selection of these methods and strategies. The course also includes introducing students to teaching planning and training them on preparing the study plans.

10501114 Ethics

This course covers the rules and ethical principles and values that the student teacher should adopt, and their implementation in the professional field. The course as well includes the teacher's relationships to the educational learning parties from the moral and behavioral aspects with the focus on the professional standards and competencies of the teacher.

10501110 Civic Education

This focuses covers the concept of Civic Education, and the concept of Civil Society and its components, importance and role. The course also addresses the concept of human rights, citizenship and freedoms of all types as contained in the international, local and regional compacts, and highlights the role of the elementary stage instructor in teaching these concepts.

10501217 Classroom Management and Organization

This course is designed to introduce students to classroom concept, its types, foundations, and the teacher's methods of possession. It also introduces the teacher's role with his/her skills and administrative competencies in dealing with the classroom problems.

10501218 Methods of Teaching Arabic Language 1

This course include some language and spelling issues, which are contained in the first and second grades curriculum and the learner- centered curriculum. It also includes the description of the objectives and methods of teaching Arabic for the first elementary stage (preparation, speaking, and reading, abstraction, writing and spelling), as well as analyzing units from the first and second grade courses.

10501219 Methods of Teaching Islamic Education 1

This course deals with the cognitive domain which is included in the content of the books of Islamic Education for the elementary stage with its focus on the emotional domain, and the course as well introduces the appropriate teaching methods according to the integrated aspect.

10501220 methods of Teaching Mathematics 1

The aim of this course is to develop students' ability to understand the scientific and behavioral material to be able to teach it in the elementary stage. This includes numbers, simple mathematical operations: addition, subtraction, and division. The course also covers the methods of teaching percentages, ratios and planning for the teaching of the elementary stage. In addition, it addresses contemporary trends in teaching mathematics, and focuses on the methods of active learning, group work and reciprocal teaching.

10501211 Practical Teaching 1

The course introduces the theoretical aspects of practical teaching which aims at preparing students for the various aspects of school work, the administrative and educational sides. The requirements of the course are implemented in a theoretical framework in which they include a group of experiences that complete the theoretical aspects students studied at different stages. And the course is implemented through 16 face-to-face meetings.

10501225 Methods of Teaching Science and Health 1

This course deals with the cognitive domain included in the content of the Health and Science books for the elementary stage dealing with, where the concepts address the subjects of Energy, Astronomy, and the Layers of The Earth. The course also deals with the concept of science and nature and its components, and is also subjected to the appropriate methods of teaching.

10501227 Methods of Teaching Social Sciences 1

This course is designed to introduce the cognitive domain in the Social Sciences book, with a special focus on the emotional and national dimensions as well as addressing the methods and strategies of the appropriate learner-centered teaching.

10501212 Practical Teaching 2

This course is implemented in two main streams: the first stream is implemented in 16 face-to-face meetings in the university. These meetings address the observation and partial participation along with the focus on the organized meaningful feedback. The second stream is the practical one, in which the student accomplishes 32 hours, in which s/he participates partially, observes and identifies the school and class environment.

10501244 Educational Psychology in Elementary Education

This course is designed to introduce students to the educational psychology and its relationship to general psychology and the methods of applying the concepts of behaviorism, cognitivism and constructivism in the teaching process. It also addresses the appropriate environment that facilitates the learning process and the required skills for the educational process and its evaluation and measurement.

10501311 Practical Teaching 3

This course addresses the skills of practical teaching in terms of responsibility, the full employment of the classroom activities in light of the required standards. Also the trainee students are committed during this period to the school's principles and instructions, where s/he spends 48 hours of practical training.

10501332 Children's Problems and Behavior Adjustment

This course is designed to introduce students to the Intermediate School stage, and the most important developmental characteristics related to this stage with a review of a number of developmental problems of this stage (hyperactivity, poor attention, special needs, fear, etc.). It also includes a presentation of the causes and preventions, in addition to the most important behavior adjustment strategies and mechanism applied in the behavior modification and construction that the elementary teacher should possess.

10501329 Methods of Teaching Arts

This course is designed to introduce students to the music arts education and its role in employing hearing education and in developing IQ skills in children. The course also employs school hymns in teaching other subjects which the elementary students learn, and the educational implementation of arts through students' artistic skills in learning other topics.

10501330 Education Technology for Elementary Education

This course is designed to introduce students to the various Education Technology applied in the teaching process, as it also addresses the methods of using and integrating these technologies in the elementary stage strategies so that it covers the most important technologies, conditions, methods of design and the role of both the learner and teacher.

10501318 Methods of Teaching Arabic Language 2

This course is designed to introduce students to some linguistic and spelling mistakes that are mentioned in the third and fourth levels' curriculums, and their methods of application. It also includes the objectives of teaching the Arabic language, as well as its methods (reading, songs, chants, dictation, handwriting, writing, language patterns), alongside with the analysis of a unit of the third and fourth grades, and it ends with preparing an Arabic language achievement test.

10501325 Methods of Teaching Science and Health 2

This course is designed to introduce students to the cognitive domain included in the content of health and science books for the elementary stage so that it covers the concepts of: classification, cell, living creatures, in addition to the human body systems and health. The course also deals with the curriculum teaching methods and strategies, and ends with an achievement test in health and science.

10501320 Methods of Teaching Mathematics 2

This course covers the strategies of solving the mathematical problems, their types, geometry, distance measurement units, area, volume, mass and time. It also includes the concepts approximation and evaluation, the concept of planning and evaluation in Mathematics, and it ends with a preparation of an achievement test in Mathematics.

10501312 Practical Teaching 4

This course focuses on the student implementation of the classroom tasks and duties in the partner school, during which the trainee gets used to autonomy, taking the responsibility, observation and feedback, alongside with discussing his/ her feedback with the supervisor and the expected difficulties. The student spends 48 hours of Practical Teaching.

10501313 Computer Educational Applications

This course covers the training of students on computer software that enriches the educational learning process for the elementary stage, employing the appropriate software to facilitate administrative and professional duties.

10501410 Current Issues and Trends in Elementary Education

This course covers a number of issues and highlights the modern educational experiences related to the needs, abilities and appropriate educational methods of the elementary students. It also highlights on a number of studies and scientific research related to the educational problems of this stage.

10501411 Practical Teaching 5

Students at this stage bear the responsibility of preparing, organizing, and implementing the lessons they are tasked to teach under the supervision,

responsibility and monitoring of the supervisor teacher and the co-teacher. The trainee student enrolls in 77 classes implemented during the semester alongside with observing the classes his/ her colleagues and co teachers carry out.

10501441 Scientific Research and Statistics

This course introduces an introduction to the concepts of the scientific research related to the requisites of the elementary stage such as the variables, and their levels, and the formulation of hypotheses, and it also deals with data collection, with an emphasis on coding and analysis using the descriptive and inferential statistics with the computerized application. The course defines the students with the appropriate report writing methods in light of the results.

10501421 Drama in Education

This course deals with the concepts of Drama and Theatre in their educational, theoretical and aesthetic frameworks, as well as their impact on the educational process for the elementary stage. It also includes the preparation of programs and activities that helps in training the trainee student on employing drama in education, such as: puppets theatre, role paly, stories, body language, stimulation, and the methods of applying these strategies in teaching this stage different curriculum.

10501424 Methods of Teaching Physical Education

The course aims at introducing the teacher student to the scientific and educational foundations in teaching the modern physical education for the elementary stage. The course includes as well introducing the different teaching methods through the physical skills, physical exercises, movement education, small games and the motor story.

10501245 Educational Readings in the English Language for the Elementary Stage

This course deals with the training of the teacher student on reading a number English text that deal with various educational topics, which helps the teacher student in enriching the English vocabulary dictionary and aesthetic structures.

10501440 Educational Evaluation in the Elementary Stage

This course introduces the main concepts of evaluation: their types, and structures that fit with the first elementary stage. It also focuses on teaching students building the different tools of educational evaluation, including the tests and evaluation, and training the student on evaluating the results of measurement tools, and proposing the appropriate treatment plans.

10501421 Teaching Design

This course introduces the concepts of classroom lessons design for the different elementary curriculums in terms of: fields, activities, methods and principles, and the appropriate evaluation tools. It also addresses teaching models in this stage.

10501412 Practical Teaching 6

This course is a continuation of the Practical Teaching 5, for it requires the trainee student to prepare, organize, and implement the lessons s/he is tasked to teach independently, ranging between a basic partial independence, and full independence, based on the estimates of the supervising teacher, and the co-teacher. The intern student is required to teach no less than 135 class periods during the semester under the supervision and monitoring of the supervisor teacher, co-teacher and in cooperation with the partner school principal.

10501413 Action Research

The course addresses the Action Research in terms of concept, objectives, types, and applications on the learning problems and difficulties in the school and classroom environment, and then the student is asked to present a research on one of problems and difficulties encountered during the practical teaching under the supervision of one of the instructors, using the action research steps.

10501250 Environment Education in Palestine

This course deals with Ecology and the most important concepts stemming from it, the factors which affect the environment and causes pollution and the role of the human being in this pollution. The course also covers a number of local and global environmental problems and the human role in addressing them, and the appropriate strategies for teaching the environment for the elementary stage students.

10501302 Integrated Curriculum in Teaching

This course addresses the integrated curriculum: its concept, characteristics, and importance in the elementary stage education. It also includes practical applications from different curriculums, and highlights the teacher's role in employing this curriculum in the educational learning process.

10501352 Collective Education

This course introduces students to the categories of collective education (marginalized and people with special needs) characteristics and diverse needs. The course also deals with the skills the teachers should own so that they help them in selecting and employing the learning strategies that help them in merging the students in the classroom, which takes into account the different needs.

10501253 Guidance and Counseling Psychology

This course aims at introducing the teacher student to the concept of guidance and counseling in the elementary stage, its objectives, theories, fields, methods, problems and needs, guidelines that appear in children in the first elementary stage, as well as the possible indicative, preventive, developmental,

and therapeutic interventions, furthermore, the course includes the methods and guidelines which can be used to improve the learning process.

10501454 Thinking Skills

This course addresses the mechanisms of developing students' thinking skills through their exposure to scientific and humanitarian situations that lead to using the scientific thinking skills of observing and formulating theories, problem solving and types of inference.

10501455 Learning Difficulties

This course includes a description of the difficulties children face in the elementary stage through the presentation of the basic information contained in the subject of learning difficulties, the causes leading to them and their classification(developmental or cognitive). It also addresses the most important manifestations, diagnosis strategies and the educational applications that every teacher should own.

10501456 National Education

This course covers the concept and values of national education as mentioned in the curriculum of national education for the foundation phase (the homeland, the people, the nation, the affiliation system, the state and its institutions). The course also introduces students to the appropriate methods of teaching.

10501357 Methods of Teaching Social Sciences 2

This course introduces students to the facts, concepts, principles, and generalizations contained in the social sciences elementary education curriculums, such as: the concept maps and Physical and Human Geography, alongside the implementation of the modern methods of education.

10501358 Psychology of Play

This course explains the nature of playing, its historical development and the educators' interest in its educational significance. Of these educators, the course will introduce Froebel and Pestalozzi. The course also dwells on the behavior of playing from a psychological perspective as interpreted by Freud, Piaget, Erickson, and Brunner. Emphasis is also given to the importance of playing in Kindergartens and its considerations as the center of child's early education before school.

{ Kindergarten Teacher }

Course Type	Credit hours
Department Compulsory Requirements	84
Department Elective Requirements	18
University Compulsory Requirements	18
Free courses	6
Total	126

Vision:

Preparing professionally, educationally and scientifically qualified kindergarten teachers in light of the national and international standards of teaching.

Message:

Providing the Palestinian and regional community with professionally and educationally equipped teachers who are capable of preparing the future generation to confront today's challenges

Intended Learning Outcomes (ILOs) for program graduates

The graduate students are expected to be able to:

1. Adopt an ideology that upholds the modern trends in education.
2. Represent the values of his society and be proud of his culture.
3. Apply the strategies and methods of modern teaching.
4. Employ technology in education.
5. Take the responsibilities required by his profession.
6. Develop his professional performance constantly.
7. Employ various strategies and methods for translation.

Firstly: Required Courses (84) credit hours

Secondly: Elective Courses (18) credit hours

Course no.	Course title	Credit.	Prerequisites
10506110	Introduction to Kindergartens	3	-
10506111	Psychological and Educational Principles for Kindergartens		
10506112	Psychology of Play in Early Childhood	3	-
10506113	Child Nutrition, Health and Safety	3	-
10506114	Basic Skills of Physical and Sport Education	3	-
10506115	Mental and Linguistic Development of Children	3	-
10506116	Basic Education in Palestine and its Methods	3	-
10506211	Kindergarten Integrative Approach	3	10506110/10506111
10506212	Literacy for Children	3	10506110/ 10506111
10506213	Drama and Theatre in Children's Education	3	10506110/10506111/10506115
10506214	The Mental Health of Preschool Children	3	10506111
10506215	Environmental Education for Children	3	-
10506216	Modern Educational Methods for Kindergarten	3	10506110/10506111
10506217	Childhood Problems and Behavior Modification Techniques for Kindergarten	3	10506116
10506311	Kindergarten Curriculum Design and Application	3	10506110/10506111
10506312	The Development of Social and Moral Concepts	3	10506110/10506111
10506313	Creativity in Childhood	3	10506110/10506115
10506314	Latest Trends in Childrearing	3	10506211/057212
10506316	Managing Child Learning Environment	3	10506110
10506411	Measurement and Evaluation of Children Education	3	10506115/10506212
10506412	Children with Special Needs Care	3	10506214
10506413	Thinking Development in Preschool Children	3	10506115
10506414	Theoretical Principles in Practical Training	3	10506311/1050622
10506415	Field Practical Training	3	10506414
10506416	Educational Readings in English in Kindergarten	3	10506210
10506417	Kindergarten Action Research	3	10506415
10506251	Guidance and Counseling for Kindergarten	3	10506110/10506111
10506252	Global Experiences in Kindergarten Programs	3	10506110/10506111
10506253	Design and Production of Sources Learning	3	-
10506254	Rights of Child and Family	3	10506110
10506255	Raising Children in Islam	3	10506110
10506256	Thinking Skills	3	10506115
10506257	Learning Difficulties for Kindergarten	3	10506110/10506111
10506258	Art Education and Jingles in Kindergarten	3	10506110/10506111

University Compulsory Requirements

Course no.	Course Title	Credit hrs.
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English Language1	3
11000323	English Language2	3
11000105	Palestinian Studies	3
11000117	Leadership and Communication Skills	3
11000108	Community Service	3
11000127	Introduction to Computer	3

Courses Description

10506110 Introduction to Kindergarten

This course covers a brief history of the development of child-rearing in the Arab world and the West, including the most important philosophies and schools focused on child-rearing. The course is an opportunity for students to explore children's preschool world; to recognize the objectives of early childhood; to identify the children, teachers and the methods used; to know the layout of multiple types of children's activities and directing; and to understand the characteristics of preschool programs, quality, and characteristics of teachers, and the development of the profession in the past, present and future.

10506111 Psychological and Educational Principles for Kindergartens

This course includes a description of the psychological and educational principles and applications for kindergarten, including the concepts relevant to them, such as: psychology and its fields, growth, learning, motivation, and intelligence, characteristics and objectives of rearing, and its relationship with culture and society. The course also includes how to apply the skills of the kindergarten teacher to those concepts.

10506112 Psychology of Play in Early Childhood

This course discusses the concept of play, the most important theories and psychological principles, the objectives and development of play in the development stages of growth in early childhood in particular, and various popular gaming software.

10506113 Child Nutrition, Health and Care

This course covers the basics of health for infants and children at the preschool age, the most prevalent diseases in the stages of childhood and how to prevent them. It also covers the fundamentals of proper nutrition in childhood and their nutritional needs, and diseases resulting from malnutrition and how to prevent them.

10506114 Basic Skills of Physical and Sport Education

This course covers the disabled and their abilities, the importance of exercise for physical health activities, the methods of tools and activities modification, the playgrounds and conditions commensurate with the capabilities of this group of students to meet their needs, and the principles of designing the individual's healthy sport program.

10506115 Mental and Linguistic Development of Children

This course covers the concepts of children's language and cognitive development, such as children's mental capacities, intelligence, cognition, thinking and processing information, problem-solving skills, brain's functions with focus on theoretical knowledge in the use of IQ tests and applications, language development, communication skills for young children from birth until the age of eight, the factors that affect language development and learning methods and principles, and the basic language skills that every child needs.

10506115 Basic Education in Palestine and its Methods

This course includes a description of the nature of the pedagogical and educational system in Palestine: its history and importance, philosophy, problems, and the factors influencing it. The course also includes a description of the kindergarten curriculum in terms of its elements, and its fundamental and organizational aspects.

10506211 Kindergarten Integrative Approach

This course aims at introducing students to the integrative approach and how to link between different subjects when instructing children, so that subjects are coherent and structured. This approach contributes in overcoming the barriers between different subjects. The course also aims at reviewing the different educational experiences in the field of integrative approach to be utilized in the application of the curriculum.

10506212 Literacy for Children

This course aims at identifying an integrated teaching of the Arabic curriculum for the elementary stage, its components, and fields of research: writing, conversation, reading, and their methods of integrative application.

10506213 Drama and Theatre in Children Education

This course deals with the concept of drama and theater in the educational, practical and aesthetic frameworks and their impact on children's educational process. The course also includes the preparation of programs and activities to help in the training of the student teacher on the employment of drama in education, such as puppet theatre, role-playing, stories, body language, simulation, and how to apply these strategies in the teaching of different subjects for this phase.

10506214 The Mental Health of Preschool Children

This course covers the concepts of mental health and healthy behavior stimulation with a focus on mental disorders in childhood: such as depression, motor skills disorder, learning disorders, disruptive disorders, attention deficit hyperactivity disorder, and other disorders in childhood, with a focus on therapeutic strategies and theories of psychotherapy.

10506215 Environmental Education for Children

This course covers the definition of scientific and environmental concepts, different viewpoints, the types of concepts, components of the concept, concept formation, growth of the concept, Piaget's theory of cognitive development, theory of Pandora, patterns of concepts, and concepts classification.

10506216 Modern Educational Methods for Kindergarten

This course introduces students to the various educational techniques used in the teaching process, it also deals with methods of using these techniques and integrating them into the various teaching strategies of kindergarten teacher, so that the course covers the importance of technology, its conditions, how to design, and teacher's and learner's role.

10506217 Childhood Problems and Behavior Modification Techniques for Kindergarten

This course deals with introducing the student to kindergartens and the most important developmental properties, reviewing a number of special problems in this stage (hyperactivity, attention deficit, special needs, and fear, etc). It also includes a presentation of the causes and preventive actions, and also the most important behavior modification techniques that kindergarten teachers should have, and the mechanism for their application in behavior modification and construction.

10506311 Kindergarten Curriculum Design and Application

This course deals with the definition of student teacher concepts relating to the design of classroom lessons and hours for different kindergarten subjects, in terms of its scopes, objectives, activities, methods and techniques, and assessment appropriate tools. The course also deals with teaching models in the design of this phase.

10506312 The Development of Social and Moral Concepts

This course covers three aspects of the manifestation of the child's development: social, emotional, and moral growth, the distinct psychological and educational theories which deal with these aspects, educational applications in the areas of a child's learning and upbringing, preparation of the child learning environment, the development in the context of the family, the kindergarten and the local community, the positive factors influencing the progress and extent of growth, the problems associated with manifestations of growth, and ways of diagnosis, treatment and therapy (both addressed directly to the child, or oriented to the learning environment, or the family environment or local community institutions).

105063 13 Creativity in Childhood

This course deals with the concept of creativity, its components and relationship to intelligence and other personal capabilities, and creativity in various stages of growth and kindergartens, its role in the development of creativity and detection methods for children's creations and how to deal with them, and the characteristics of creative students.

105063 14 Latest Trends in Childrearing

This course identifies the most important family problem in the modern time, the reasons behind them with the interest in child problems in the Palestinian family, as well as identifying some of the applied studies conducted on the psychological and social effects on children, concurrent with the multiple roles of the working mother and their impact on both child and family, in addition to the extent of awareness and interest in childrearing, and the contemporary concerns in studying the psychology of women and children.

105063 16 Managing the Child's Learning Environment

This course deals with the focus on the organization and development of the curriculum and application of standards that ensure quality care for children, and to provide the necessary planning and management for the success of children's programs and families, such as health, nutrition, safety, regulations, instructions staff, budget, and the natural environment.

105064 11 Measurement and Evaluation of Children Education

This course covers the applications of measurement and evaluation methods on children, with the focus on the applying evaluation and its means and usages, the development of tests related to the field of early childhood education, qualitative and quantitative rationing in the aspects of child's development, learning and trends, and methods of measurement and evaluation of children with special needs.

105064 12 Children with Special Needs Care

This course deals with children suffering from developmental problems such as physical and sensory problems, speaking disorders, learning difficulties, emotional disorders, tactics and tools in defining children with special needs in the cognitive, linguistic, social, perceptual, and kinesthetic aspects.

105064 13 Thinking Development in Preschool children

This material discusses the concept of thinking, perception, attention, and critical and creative thinking and innovation, and how to develop these all through the kindergarten, as well as playing the role in developing thinking in children, and the obstacles that hinder thinking and its methods.

10506414 Theoretical Principles in Practical Training

This course aims at providing students with the theoretical foundations and principles relating to the practical training process for preparing the students to deal with the school and the environment in the kindergarten classroom.

10506415 Practical Field Training

This course is designed to train students in the field of the actual teaching process through the distribution of students in kindergarten and first grade in schools, so that students can apply the concepts, principles and theories learned in the real world. All of this takes place under the supervision of one of the department instructors.

10506416 Educational Readings in English in Kindergarten

This course covers the training of the student teacher to read a number of English-language texts, which deals with different educational topics related to the teaching-learning process, so as to assist the student teacher in enriching the educational vocabulary outcomes in English and their expressive structures.

10506417 Kindergarten Action Research

This course covers the action research in terms of concept, objectives, types, and applications of the problems and learning difficulties in the school environment and the classroom. The student is asked to do research in one of these problems encountered during the application of practical education under the supervision of one of the department instructors, applying all the steps of the action research.

10506251 Guidance and Counseling in Kindergarten

This course aims at introducing the student teacher to the concept of guidance and counseling in kindergarten - the objectives, principles, theories, fields, and methods, problems and guidance needs that appear in children in the primary first stage, and the protective, developmental guidance interventions and therapeutic potential. The course includes the techniques and possible guiding principles that can improve the teaching process, such as methods, the technical, cognitive and behavioral principles, and the cognitive and behavioral principles together.

10506252 Global Experiences in Kindergarten Program

This course deals with a review of the global, regional and local experiences in kindergartens and standards and discusses the roles and philosophies and the role of the teacher at this very stage.

10506253 Design and Production of Learning Sources

This course deals with the educational audio-visual and interactive materials in terms of definitions and their relationship to technology and education, their ratings, their sources, and their importance to the process of learning and

teaching, and the impact of cognition and communication in the design of educational materials of all kinds, from fiches, slides, audio and video tapes and computer discs, and so on, and the foundations of design production and use according to the regular curve. It concludes with a practical application in the design and production of educational materials in various school courses for kindergarten.

10506254 Rights of Child and Family

This course covers the rights of the child compared to some of the laws and legislation in some foreign countries in the light of the International Convention on the Rights of the Child, and employment of all legislative issues and laws within the framework of the International Rights of the Child. The course looks at the application of all legislative issues and laws in the context of educational methods through legal regulation of social care assessments for the rights of the child and legal protection; social and educational assessments for the rights of the child (especially provisions governing the kindergartens and the legal regulation of personal and civil status assessments for the rights of the child); foundlings care; legal regulation of care global assessments for the rights of working children and working mothers; legal regulation of health care; cultural, legal, and financial assessments for children's rights and the international society's respect of children's constitutional rights.

10506255 Raising Children in Islam

This course aims at reviewing the educational principles from the Islamic point of view, with the focus on the role of fathers and mothers in instilling Islamic morals and values in children.

10506256 Thinking Skills

This course deals with the mechanism of developing the different thinking skills in children through exposing children to multiple scientific and humanitarian positions that lead to using scientific thinking skills, formulating the scientific hypothesis, solving problems, and types of reasoning.

10506257 Learning Difficulties for Kindergarten

This course covers the challenges facing children in kindergarten in the learning process, through the presentation of basic information on the subject of learning difficulties, the reasons that lead to it, and how to classify it (developmental or cognitive). It also addresses the most important manifestations and strategies for diagnosis, and the educational applications that kindergarten teachers must possess.

10506258 Arts Education and Jingles in Kindergarten

The course aims at introducing the student to the art education and jingles and their role in education, their methods of teaching as well as teaching art education through drawing, art and handicrafts.

{ Upper Basic Teacher }
{ (Teaching Social Studies) }

University Requirements		18
Free Courses		4
Department Requirements	Compulsory	96
	Elective	6
Total		124

English Language2 (1000323)

Departments Compulsory Requirements(96) credit hours

Course No.	Course Title	Credits	Prerequisite
10811111	Geography of Palestine	3	-
10811112	Introduction to Human Geography	3	-
10811113	Introduction to Physical Geography	3	-
10811222	Arab World Geography	3	-
10811115	Principles of Maps and Methods of Cartographical Representation	3	-
10811220	Principles of Economical Geography	3	-
10811225	Principles of Demography	3	-
10811216	Principles of Climate	3	-
10811329	Settlement Geography	3	-
10321122	Pre- Islamic History of Arabian Peninsula	3	-
10321123	History of Early Islam(Prophet's and Guided Caliphs' Era)	3	-
10321227	History of the Abbasid Caliphate	3	-
10321335	History of the Ottoman Empire	3	-
10321337	Modern World History	3	-
10321338	History of Modern and Contemporary Arab Orient	3	-
10321440	Modern History of Palestine	3	-
10321441	Al Quds Modern and Contemporary History	3	-
10515223	Methods of Teaching Social Studies(1)	3	-
10515224	Methods of Teaching Social Studies(2)	3	10515223
10515424	Current Issues and Trends in Teaching Social Sciences	3	10515223
10513316	Design and Production of Teaching Aids	3	-
10513411	Statistics and Research Methodology	3	-
10513215	Computer in Education	3	-
10513211	Practical Training(1)	1	-
10513311	Practical Training(2)	1	10513211
10513312	Practical Training(3)	1	10513311
10513313	Practical Training(4)	1	10513312
10513410	Practical Training(5)	2	10513313
10513420	Practical Training(6)	3	10513410 or synchronized
10513430	Action Research in Practical Training	3	10513420 or synchronized
10513111	Introduction to Curriculum	3	-
10513220	Educational Readings in English	3	-
10513221	Educational Psychology	3	-
10513302	Evaluation in Schools	3	-
10513317	Classroom Management	3	-

Departments Elective Requirements (6) credit hours

Course No.	Course Title	Credits	Prerequisite
10513455	Teaching Design	3	-
10513162	Introduction to Psychology	3	-
10513368	Teaching Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Course Description

10811111 Geography of Palestine

This course covers abundant information and geographical data about historical Palestine. After the completion of the study, the student will become familiar with a lot of historical and human resources as well as be able to address the issue of demographic shifts in Palestine during the previous time periods, for this issue has a great importance to the Israeli- Palestinian conflict. Furthermore, along with studying several natural subjects comes the study of the earth's topography and water resources in Palestine and its climate and environmental regions.

10811112 Introduction to Human Geography

This course covers topics in human geography such as the population distribution in the world, the human race, human growth, population densities and migration.

10811113 Introduction to Physical Geography

This course introduces the sections of geography and many of the topics in physical geography, such as the origin of this planet, earth's atmospheres, the elements of the climate and the regional climates, and the natural factors of tectonics and erosion and weathering operations that contribute to the earth's demography formations. The course also touches on other topics in physical geography like the population distribution in the world, human races, human growth, population densities and migration.

10811222 Arab World Geography

This course goes through the Arab World in a regionally and geographically integrated study. This course deals with many physical topics such as the geological times that the Arab land has gone through, the topography and the climate and environmental regions as well as a number of human matters, for example, the population and economical activities.

10811115 Principles of Maps and Methods of Cartographical Representation

This course includes the study of the different types of (topographic and thematic) maps, along with map reading and symbols analysis, and performing calculations on the map such as calculating distances, areas and trends. The course also includes the students' practical training on drawing topographical-geological sections of maps, and analyzing them, as they are inseparable to

the other parts of the map; and practicing the analysis of some other maps and cartographic drawing.

10811220 Principles of Economical Geography

This course describes the principles of economical geography and its rules, sections, and research methodologies, for this has a great importance in raising students' awareness and understanding of all the natural and human productivity circumstances, and what results in deciding the largest centers of economic power in the world and prevailing patterns in different countries.

10811225 Principles of Demography

This is a study of different population theories and policies, sources of demographic and urban data, mortality, migration and its rates, and factors influencing them.

10811216 Principles of Climate

This course takes in the principles of climate, the relationship between climatology and meteorology, atmosphere in terms of structure and its effect on controlling earth environment, study of climate elements (sun rays, heat, winds, air pressure, precipitation, rain, clouds, mist) and general foundations on which international climate classifications are based.

10811329 Settlement Geography

This course deals with the study of the patterns and characteristics of urban and rural housing, the urban communities principles of classification, the theories that dealt with the cities relationship with its environment, cities interaction with one another, urban planning, land-use patterns, and some problems with the cities.

10321122 Pre-Islamic History of Arabian Peninsula

This course highlights the study of the sources related to Jahili and Arabian Peninsula history before Islam, Arab classes, geography of Arab Lands, Yemen's old states, and the remaining states in the Arabian Peninsula before Islam: Qinda, Palmyra, Nabateans, Ghassasans, and Manathiras, and the tribal society in Hijjaz from all aspects.

10321123 History of Early Islam (the Prophet's and Guided Caliphs' Era)

The course examines the call for Islam, its spread in Mecca and Medina, organization of the Muslims' state during the Prophet's lifetime, the Prophet's policy in spreading the Islamic call inside and outside the Hijjaz, apostasy and self-prophecy claim movements, the issue of the Prophet's succession, conquests during the Guided Caliphs' times, organizations of state governing administration, financially, religiously, and militarily, as well as disagreements which emerged and their consequences.

10321227History of the Abbasid Caliphate

This course investigates the organization of da'wa(call) for the House of the Prophet, establishment of the Abbasid Caliphate. In addition, the course is a brief study of the caliphs in the first Abbasid Age, the Abbasid caliphs' home policy toward the Alwais, Mawalis, Shu'biyyah, Baramika, the Arabs, etc. The course also looks at Abbassids' foreign policy towards the Byzantine and Holy Roman empires, the Maghreb and Andalus, etc. It will also shed the light on the emergence of semi-independent Muslim states, the age of 'Turks' dominance, systems of government, and aspects of civilization during the Abbasid Caliphate.

10321335History of the Ottoman Empire

This course focuses on the establishment of the Ottoman Empire and its key institutions (the Sultanate, Grand Vizier, Dafttrkhana (Archives and Record Office), Dafttrdaria (Record Office), Janissaries, the Senate of Islam, the Judiciary), Safavid Ottoman relations, the Ottoman Mamluk, and the Ottoman European until the end of the Ottoman Empire in 1918 and the starting of the Ottoman Tanzimat after 1826.

10321337Modern World History

This course studies the western civilization's landmarks after the Renaissance until the outbreak of the First World War, the American and French revolutions, the Industrial revolution in Europe and the European nationalist movements.

10321338History of Modern and Contemporary Arab East

This course addresses the modern and contemporary history of the Asian section of the Arab World between 1516 until the present time, and focuses on the Ottoman rule from 1516 to 1918, the establishment of the state of Qatar after the year 1918 and its economic, social, and political transformations in light of the colonial competing, the Cold War and the New World Order.

10321440Modern History of Palestine

This is a study of modern Palestinian history beginning from its congregation under the Ottoman rule in 1916 until its end during the actions of First World War in 1918. It also focuses on the economic, social and political transformations and particularly the emergence of the local influential leaders and its relationship with the ruling Ottoman bodies and the internal and external economic activities, the foreign penetration, and official and popular reactions to it.

10321441Jerusalem Modern and Contemporary History

This course highlights the economic, social and political modern and contemporary history Jerusalem since Ottoman rule in 1516 till present time and all through the British Mandate for Palestine, the Jordanian Occupation, and finally the Israeli Occupation.

10515223 Methods of Teaching Social Studies (1)

The course covers the definitions of sociology and its relationship to the social sciences, the characteristics of the new horizontal and parallel social sciences program, the general objectives of the social sciences, the content of the curriculum in terms of: facts, concepts, generalizations, theories, practical experiences, or the activities and implementation of all this to the social sciences curriculum of various classrooms, and setting an integrated course plan that includes the lesson memorandum and the implementation stages.

10515224 Methods of Teaching Social Studies (2)

This course examines the strategies of teaching the social sciences and its areas of use, their preparation and application, weaknesses and strengths, areas of development, their importance and the various types, preparation and implementation as well as their evaluation, and their characteristics, types and applications.

10515424 Current Issues and Trends in Teaching Social Sciences

This course discusses current issues related to the teaching process of the social sciences such as technology, teaching social sciences, the environment, and the national and international social sciences teaching concerns.

10513316 Design and Production of Teaching Aids

This course covers the teaching aids in terms of concept and stages, the educational and psychological processes involved in the teaching methods, describes the types of the educational aids and the sources obtained. The course embodies the teaching aid design according to the model teaching aid specifications and production from the local environment materials.

10513411 Statistics and Research Methodology

The course describes the measures of central tendency and dispersion, and their employment in the basics of scientific research throughout the students' opportunities in understanding the procedures in conducting it and to know the concepts, foundations and methods that the research carries and help the students to choose a problem for the research and gather the data and analysis methods and explain the data to solve the problem.

10513215 Computer in Education

This course describes the historical evolution in the computer use in education, the international experiences of this usage, the computer programming languages in education, the advantages of the computer in education, the various applications in both the administrative and educational fields. It also focuses on using the internet in supporting the process of learning and education. And of the topics this course discusses: assessing the global sources of information, collaborative learning environment on the internet,

searching and restoring of the information. Practically, it aims at providing the students with the necessary skills to help them in designing and producing the educational multimedia software based on teaching design principles. The produced software includes patterns of the known software, such as exercise and practice, tutorial, simulation, educational games, dialogue using authorial tools such as PowerPoint, Photo Story 3 for windows, or Movie Maker.

10513211 Practical Training (1)

This course deals with the theoretical side of practical training which is designed to prepare the students for the different aspects of school work, including the administrative and educational ones. The course requirements and duties are implemented in the theoretical framework, so that it includes a set of complementary expertise studied by the students in early classrooms, and seeks to prepare the students for the requirements of different classroom situations. In addition, the course provides the chance for students to get to know well the philosophy of practical training, and its components, rules, regulations, the teaching ethics, as well as the familiarity with tasks, rights, duties and regulations of the schools.

10513311 Practical Training (2)

This course covers both the partial participation and observance according to the two main courses: the first, is in the form of 16 face-to-face seminar meetings in the university and with the practical training instructor, focusing on the organized constructive observation, the mechanisms and methods in data monitoring, analysis and evaluation in the context of analysis of attitudes in the classroom. The second is the practical course where the student goes to an assigned school training for (16 hrs.) during which he does well-organized and programmed viewing of the classroom and school environment, then he gets to discuss the results with the co-teacher in front of the students as a prelude to making objective judgments concerning these views.

10513312 Practical Training (3)

During this course, the student assumes the responsibility for implementing the activities of a one session classroom situation in light of the standards required, for the student is expected to implement the teaching tasks under the supervision and responsibility of the instructor, principal of the partner school, and the educational supervisor for 32 days in an average of two servings a day; furthermore, and for 16 weeks, the student also performs a lot of activities and events associated with the curriculum, so that it is set and coordinated by the instructor and the partner school management, in full compliance of regulations, laws and instructions for the school and the practical training applied in the university.

10513313 Practical Training (4)

This course figures upon the weekly meetings between the supervisor and the students during the semester and throughout the implementation of the classroom tasks and activities in the partner school, where such activities are required to be carried out in a period of time of not less than three hours for 16 weeks, during which the trainee student becomes accustomed to independence, taking on the responsibility, reflection and criticism, as well as actively making use of the feedback with the supervisor instructor. In addition, all the difficulties and experiences the student faces during his school training period are discussed in the weekly meeting with the supervisor instructor at the university. This practical training earns up to 32 hours.

10513410 Practical Training (5)

With the growing level of practical experience which the student has received as the result of the early stages of practice, his level of engagement in the teaching process and classroom leadership increases as well. But he still needs the follow-up and supervision of both the supervisor and cooperative teachers; for he still needs to come back to ask them back to make sure of the readiness of his plans and this happens in 16 face- to- face hours, 64 actual full hours, as well as the observations he does with his classmates and co-teachers.

10513420 Practical Training (6)

This course is an extension to the previous one, where the student is required to prepare, organize and implement the lessons he is asked to teach, organize and accomplish independently, ranging between basically partial independence and full independency, based on the estimates of the co-teacher and the supervisor and under the knowledge of the principal as well as assigning the student of preparing, implementing, analyzing, testing and setting the treatment plan in light of the process results. 20 hours are taught per week for 5 weeks (continuous or discrete) so as to cover not less than 120 hours under the supervision of the co-teacher, the educational supervisor and the co school principal in the training.

10513430 Action Research in Practical Training

This course covers the Action Research in terms of its concept, objectives, types and applications on the educational didactic difficulties and obstacles faced in the classroom and school environment. Then the student is asked to research one of these issues that faced him during his practical training under the supervision of one of the department's instructors with the full application of the steps of the action research.

10513111 Introduction to Curriculum

This course includes the evolution of the concept of curriculum, its components, basics, design, planning, sampling, and the educational philosophies and theories discussed in the curriculum.

10513220 Educational Readings in English

The course deals with variant types of modern readings in English in various educational topics. The readings include major educational concepts addressed by the students as they analyze, apply and generalize in an attempt of building a set of meaningful educational vocabulary to enrich the student's English language vocabulary.

10513221 Educational Psychology

This course describes the educational psychology with its relation to the knowledge of general psychology, the method of applying the concepts of behaviorism and cognitivism in the teaching process that facilitates the learning process, the appropriate atmosphere to make the teaching process happen, the teaching of children with disabilities and learning disabilities, as well as gifted students, how to complete the teaching process, its measurement and evaluation.

10513302 Evaluation in Schools

This course introduces students to evaluation and its development, objectives and different means of evaluation, the standards of assigning these means and this includes different types of evaluation, methods of their construction and analysis, then how to assess the students' academic achievements on the basis of the attained results.

10513317 Classroom Management

This course examines the scientific basics of the school management on its various aspects, with a particular focus on the scientific and practical aspects, since the school is the place right where efforts accumulate in every educational field, and that the way in which it is managed and its working methods indicate its level of success in delivering the message entrusted to them in education.

10513455 Teaching Design

This course covers the design of daily lessons and identifies the concepts related to them in terms of cognitive, emotional and psychomotor objectives. It also defines the activities, methods, and evaluations, the general teaching patterns in applied sciences and humanities, and introduction to the tasks carried out by the teacher in teaching design when planning.

10513162 Introduction to Psychology

This course covers the description of the theories of psychology, and its relation to the processes of learning and education, as well as knowing the stages of growth and its learners' respective characteristics, and it also addresses a number of educational applications relative to the theories of psychology.

10513368 Teaching Skills

This course deals with several skills related to the process of teaching, such as the skills of preparing lessons or lesson preparation, the skills of composing the educational goals in the cognitive, emotional and kinesthetic domains and their different levels, the skill of having the students' attention, the skill of posing questions, the skill of classroom interaction, the skill of employing the teaching aids, the skill of managing discipline in the classroom, the skill of group formation, the skill of the debate and finally the skill of the lesson evaluation.

10513299 Active Learning

This course deals with the concept of active learning in terms of definition, objectives, basics, characteristics, nature, importance and components. It also addresses the suitable classroom environment for active learning and its pontifications in learning, the strategies and models of active learning(oriented lectures, brainstorming, discovery, problem solving, active group discussion, role playing, acting, story, simulation and case study), the teacher's role in active learning, active learning outside the classroom, active learning and effective thinking, challenges of active learning, as well as field applications on the active learning in different fields of study.

10513366 Educational Supervision

This course deals with the concept of educational supervision and its different definitions, the historical evolution of the process of educational supervision, the objectives and principles of the educational supervision, its importance, the factors affecting the educational supervision, the areas of the educational supervision, the tasks and roles of the educational supervisor, and the role of the principal as a resident supervisor. The course also describes the course types (dictatorial, democratic, clinical, preventive, scientific, structural, purposeful, corrective, creative, evolutionary, classroom related, varietal), and educational supervision methods(classroom visits, illustrative lessons, mini-education, meetings, seminars, research, and self- evaluation), and the problems of educational supervision and its future.

{Upper Basic Teacher- Arabic Language}

University Requirements		18
Free Courses		4
Department Requirements	Compulsory	96
	Elective	6
Total		124

English Language2 (1000323)

Department Compulsory 96 credit hours

Course No.	Course Title	Credit hrs.	Prerequisites
10301110	Arabic Rhetoric	3	-
10301111	Introduction to Literary Appreciation	3	-
10301112	Morphology	3	-
10301114	Syntax 1	3	-
10301157	Arabic Dictionaries	3	-
10301218	Islamic and Umayyad Literature	3	-
10301219	Prosody and Rhyme	3	-
10301221	Arabic Philology	3	-
10301222	Palestinian Popular Literature	3	-
10301223	Syntax 2	3	10301114
10301262	Arabic Language and Media	3	-
10301327	Arabic Language Phonetics	3	-
10301329	Modern Palestinian Literature	3	-
10301331	Abbasid Literature Poetry	3	10301218
10301333	Syntax 3	3	10301223
10301363	Sociolinguistics	3	-
10301440	Methods of Literary Criticism	3	-
10513225	Principles of Teaching Arabic Language 1	3	-
10513325	Principles of Teaching Arabic Language 2	3	10513225
10513425	Contemporary Issues and Trends in Teaching Arabic Language	3	10513225
10513316	Designing and Producing Teaching Aids	3	-
10513411	Methods of Scientific Research and Statistics	3	-
10513215	Computer in Education	3	-
10513211	Practical Teaching 1	1	-
10513311	Practical Teaching 2	1	10513211
10513312	Practical Teaching 3	1	10513311
10513313	Practical Teaching 4	1	10513312
10513410	Practical Teaching 5	2	10513313
10513420	Practical Teaching 6	3	10513410 or sync.
10513430	Action Research in Practical Teaching	3	10513420 or sync.
10513111	Introduction to Curriculum	3	-
10513220	Educational Readings in English Language	3	-
10513221	Educational Psychology	3	-
10513302	Evaluation in Schools	3	-
10513317	Classroom Management	3	-

Department Electives: (6) credit hours

Course No.	Course Title	Credit hrs.	prerequisites
10513455	Teaching Design	3	-
10513162	Introduction to Psychology	3	-
10513368	Teaching Skills	3	-
10513299	Active Learning	3	-
10513366	Educational Supervision	3	-

Course Description

1031110 Arabic Rhetoric

This course is designed to introduce students to Rhetoric and Semantics, Simile and its types, Linguistic and Intellectual Tropes, and Metonymy and Exposure. Students as well study Literary Devices, and a selected application study of literary texts. The course addresses the topics of Semantics: Rhetoric, Discourse (predicate and composition), Verbal and Nonverbal Composition and their types, Sentence and Sentence Type, subject and object, Elision Trope, Imperative Style, Anastrophe, Portraying and its devices, Polysyndeton and Asyndeton, brevity and verbosity. This will be applied with criticism and modern rhetorical studies.

1030111 Introduction to Literary Appreciation

This course is designed to introduce students to creativity process: the creative, text, and receiver and seeks to determine the dimensions of artistic, intellectual, psychological aspects of the literary text, and raise the students' ability to receive the literary text. The course establishes a bonding between the students and the texts on one hand, and between the texts and the social environment on the other hand and this is through literary texts of the literary genres.

1030112 Morphology

This course is designed to introduce the language Levels and the morphologist level status. After this, the course moves to cover a number of morphological topics: morphological derivatives, dualism, I'la (defectiveness), Ibdal (appositional substantive), Reduction, Relation, and Assimilation. This is coupled with an application of the topics in the form of exercises.

1030114 Syntax I

This course covers the following subjects: parts of speech and the functional classification, the verb and verb classifications, inflected and uninflected words, and the inflected and uninflected verbs and their classifications, Syntactics: the grammatical cases (Nominative, Accusative and Genitive), the declension (Fully Declined Nouns-Triptote), Diptotes, Sound Masculine Plural, Sound Feminine Plural, the Definite- Indefinite and their types (pronoun, noun, Demonstrative Pronouns, Relative Pronouns, Definite Article, Nominative Nouns- Subject and agent, Subject and Predicate- Sisters of Inna, and Sisters of kana. This is coupled with a syntactic application on literary texts.

10301157 Arabic Dictionaries

This course begins with a historical study of invention of the dictionary by ancient peoples, including the Arabs. Then the course will move to study the first beginnings of an Arabic dictionary, early endeavors in this respect, major Arabic dictionary schools: phonetics schools pioneered by Al Khalil Ben Ahmad in his book Al- 'Ayn, Al- Qafiyaa School by Al- Zamakhshari in Asass Al- Balagha Dictionary, Raedat Al- Jawhari in Al sihah Dictionary, Alphabetic and Abjad writing systems. The course sheds the light on the modern dictionaries: Al- Waseet, A-l Muheet and Al Munjed, and illustrates the hard efforts in the industry of the history dictionary, and the endeavors made by the linguistic conclaves in the electronic and computerized dictionaries, alongside with training the students to look into the lexical items in all dictionaries.

10301218 Islamic and Umayyad Literature

This course is designed to introduce students to the Islamic perspective on Poetry, the Media Warfare the Ansar poets had to go through against the ethnic poets of Mecca, and monitors the traditional and new purposes that accompanied the triumph poetry. It also studies the magnificent masterpieces of contemporary poets, and indicates the Islamic and Jahili penetrations. The course includes the environments of poetry at the Umayyad time: Hijaz, Dedouin, Greater Syria, Iraq, and Khrassan. The student studies this era's important poets and their works, as well as analyzing selected poetic works and indicating their distinct properties and the relationship of this all with the previous and subsequent eras. The course finally touches on the poetic subjects in this era: politics, Satire and love, and shows the most important poets and characteristics.

10301219 Prosody and Rhyme

This course is designed to introduce Prosody in terms of: resources, terms, role in music poetry, and the poetic verses and the different anapests, and then highlight the divisions of poetry schemes: syllables, rhythms, divisions, and defects. In addition, the course addresses the modernization movement in Arabic poetry music: Muwashshah, Free Verse, and Rhythm.

10301221 Arabic Philology

Topics covered in this course include development of the Arabic language, its phonemes, structures, morphemes; study of Ancient Arabic dialects and their features; historical relationship between Arabic and other languages, the Semitic languages in particular. There will also be a study of some linguistic phenomena such as synonyms, antonyms, homonyms, Syntax, Portmanteau, Derivation, and Polysemy, as well as discussing the linguists' points of views in the previous cases.

10301222 Palestinian Popular Literature

This course is designed to introduce the Palestinian Popular Literature as a means of defending the Palestinian Identity through the renewal of many rituals, customs and traditions expressed by this genre of literature. Thus, it defines the Folk Literature, its themes, features, length in time and place, and examines certain models from this literature.

10301223 Syntax 2

Following up with the topics discussed earlier on in (Syntax 1), this course is designed to address the following syntactic and grammatical topics: nouns, in the accusative case, objectives and their types, alongside with their methods, for instance, temptation, warning, competence, and engaging), Adverbs (If, whereas, whenever, since, for, ...etc.), Idioms, (Haal) Condition, Exception, and the Genitive Nouns. There will be grammatical applications to reinforce these topics.

10301262 Arabic Language and Media

Language is a means of communication and networking, and Media basically relies on language. Hence, this course seeks enhancing students' linguistic acquisition, and developing their abilities to flexibly use the language to express their thoughts in a proper and error-free style. The course addresses the linguistic errors in the press and other media, and aims at correcting them. It also covers the terms of media, mass media, communication, networking and Deliberations, as well as some syntactic and grammatical structures, with a focus on numbers, duals, plurals, copier action (An-Nawasikh), and the monitoring of the errors contained in these subjects, in addition to focusing on spelling, and dealing with the different materials in media, where the errors occurred and were corrected.

10301327 Arabic Language Phonetics

This course is designed to introduce students to phonology, and sheds the light on the works of the classical Arabic scholars in his field, and casts the development of the Western linguists, and moves on to study the Articulatory System, the manner and rules of sound production. There is also a comprehensive study of compositional and non-compositional phonemes, Phonetics, and some phonological phoneme and laws.

10301329 Modern Palestinian Literature

This course is designed to address the Palestinian Literature in its different times and places; the Palestinian literature before 1948, Exile Literature as well as Poetry of the Nakba (disaster 1948), Resistance Literature in occupied Palestine in the years 1948 and 1967, Prose Poetry and Free Verse, and a study of the Palestinian writers Ibrahim Touqan, Abd- Al Karim Al Karmi(Abu Salma), TawfiqSayegh, TawfiqZiad, and Mahmoud Darwish. The course

also studies the Palestinian novel, in terms of origins, evolution, the most prominent symbols in Exile and Palestine such as: Ghassan Kanafani, Emil Habibi, and considers the short story in different in different environments and at different times, so as to cover the short story map since its very beginning until Al Aqsa Intifada, and chooses the models of Najati Sodqi, Sameera Azzam, Mahmoud Shuqair, Tawfiq Fayyad, Liana Bader, Akram Haneyya, furthermore, it represents the distinct Autobiographies such as: Fadwa Touqan Autobiography, and Jabra. I. Jabra Autobiography.

10301331 Abbasid Literature Poetry

This course is designed to introduce students to the literary and intellectual life in the Abbasid era (132-656), and identify the impact of amusement, lechery, heresy, populism and asceticism in poetry, the process of modernizing and the most prominent trends in poetry, alongside with the identifying the masters of poetry (Bashar, Abu Nawwas, Abu Al- Atahya, Abu Tammam, Al Buhturi, Ibn Al Rumi, Al Mutanabbi, Abu Firas Al Hamadani, and Al Ma'arri). Finally, the course examines literary texts and shows the artistic characteristics of this poetry.

10301333 Syntax 3

Following up with the topics discussed above in (Syntax 1 and 2), this course studies: the present tense in the accusative and subjunctive cases, appositives, the indeclinable, the assertive and non-assertive conditionals, and acting nouns as verbs (Gerund, Participle, Imagery, and Superlative). There will be grammatical applications to reinforce these topics.

10301363 Sociolinguistics

This course is designed to study the language and its role in society, and track language changes related to duplicity, the language of the sexes, the masculinity of language, Language of Craftsmen, Al Taghlib (Subjugating one phrase with the attributes of another). The course explains the impact of the environment on the tongue, and illustrates the language of discourse, deliberation and pragmatics, and demonstrates the social theories and their relation to the interpretation of the language.

10301440 Methods of Literary Criticism

This course describes criticism, in terms of the concept, beginning, and evolution since the Pre-Islamic era until the beginning of the modern era. The course highlights the eras' prominent scholars, sources, writings, issues and terms, such as: pronunciation and meaning, printed and made, and ancient and modern. Students are introduced to the most important methods of literary criticism from the 19th curricula (Sainte Beuve, Hippolyte Taine, and Prontera), and addresses Impressionism, the non-structural curriculum scripts (psychological and social), and reaches out to the structural curriculum

scripts, and those that address the Receiver (Semiotics and Deconstruction), and the modern Arab literary criticism masters' interaction with these curriculum approaches as well as the most important doctrines of classic, romantic and realistic literature.

10513225 Method of Teaching Arabic Language 1

This course deals with the Arabic language definitions concerning the properties of the integrated tutorial program of the Arabic language skills/ the curriculum content in terms of: facts, general, generalizations, theories, and the educational experiences or activities and link them all to the Arabic language curriculum. The course addresses setting up the methodology of teaching the Arabic language with the integration and implementation of its elements, steps, and evaluation, with the implementation of technology and teaching aids in teaching the Arabic language.

10513325 Methods of Teaching Arabic language 2

This course is designed to introduce the strategies for teaching the Arabic language in its various branches for different school grades, and compares the applied educational strategies in their areas of use, preparation, application, strengths and weaknesses and the areas of development.

10513425 Contemporary Issues and Trends in teaching the Arabic Language

This course is designed to deal with the contemporary issues and trends in teaching the Arabic language, the new language skills, as well as the employment of technology in teaching the Arabic language, the challenges facing the teaching of Arabic in the light of globalization, and the advocate of the vernacular Arabic approach, and decrease of the Arabic language functionalism.

10513316 Designing and Producing Teaching Aids

The course deals with teaching aids, its concepts, stages and the educational psychological processes specialized in teaching aids. The course describes the types of teaching aids, its resources, and the course includes designing teaching aids that meets the standards of the good teaching aids, and producing it from local environment materials.

10513411 Methods of scientific research and statistics

The course introduces the measurements of Central Tendency and Dispersion and its function in the fundamental scientific research through providing students with opportunity to know the kinds of scientific research and its methods, procedures, in addition to helping students find research problems and identifying them, collecting data, analyzing it and explaining results.

10513215 Computer in Education

This course describes the historical evolution in the computer use in education, the international experiences of this usage, the computer programming languages in education, the advantages of the computer in education, the various applications in both the administrative and educational fields. It also focuses on using the internet in supporting the process of learning and education. And of the topics this course discusses: assessing the global sources of information, collaborative learning environment on the internet, searching and restoring of the information. Practically, it aims at providing the students with the necessary skills to help them in designing and producing the educational multimedia software based on the teaching design principles. The produced software includes patterns of the known software, like exercise and practice, Tutorial, Simulation, Educational Games, Dialogue using the authorial tools such as PowerPoint, Photo story 3 for windows, or Movie Maker.

10513211 Practical Teaching 1

The course introduces theoretical aspects of practical teaching which aims at preparing students for various aspects of school work, the administrative and educational sides. The requirements of the course are done in a theoretical framework in which it includes a group of experiences that complete the theoretical aspects student studied in different terms. The course also provides students with opportunities to know the philosophy of practical teaching, its elements, rules, systems and ethical issues related to teaching profession, in addition to enabling students to know their duties, rights that are applied in schools.

10513311 Practical Teaching 2

The course includes observation and practical participation in two tracks. The first is done through face to face meetings in the university with the instructor of practical teaching focusing on aimed observation aspects, the methods and procedures of gathering data, analyzing and evaluating it in a class setting. The second track is the practical in which students move to school training for (16) hours, the students observe regular class and school setting and then discuss these observations with the instructor in front of the students as an interaction for objective evaluations and judgments.

10513312 Practical Teaching 3

Students in this course take the responsibility of applying the activity of giving a complete lesson according to the standards requires. The student is expected to teach under the supervision of the course instructor, school principal and the educational supervisor for a period of (32) days giving two classes daily, and for a period of 16 weeks, the student under the supervision of the instructor apply different activities related to the curriculum which is

assigned by the course instructor and the administration of the cooperative participant school. The student has to follow rules and systems of the school and practical education applied in the university.

10513410 Practical Teaching 4

The course is based on weekly meetings held between students and the supervisor during the term, through applying duties and activities in the participant school. The duties should be done in not less than (16) hours weekly in which the student gets used to being independent and can take responsibilities, think, criticize, in addition, the student can give feedback in an active way to and from instructor, supervisor. What the student goes through is discussed including difficulties, experiences he/she gets through practical application in school. This can be done in a weekly meeting with the university supervisor. The hours reach up to 32 practical hours.

10513410 Practical Teaching 5

With the development of experience student gained through stages of training, the student's involvements in teaching and class management increases. But the student needs further follow up and supervision from instructor and cooperative teacher. The student need to refer to them to make sure that the plans prepared for application are effective and this can be done through 16 face to face meetings and 64 real complete lessons in addition to observing lessons applied by colleagues and cooperative teacher.

10513420 Practical Teaching 6

This course is an extension to the previous one. The student is required to prepare, organize and apply lessons assigned to teach independently, the independent level range from partial independency to the complete one. And this is due to cooperative teacher and supervisor judgments and with the knowledge of the school principal. In addition to assigning students prepare, apply, and analyze tests and construct remedial work based on the results appeared from the process. Teaching 20 hours is required weekly for five weeks together or separated, it should not be less than 120 hour under the supervision of the cooperative teacher and educational supervisor and cooperative training school principal.

10513430 Action Research in Practical Teaching

This course deals with action research concept, aims, types, application on problems and difficulties in learning and teaching in the class and school environment. The student is asked to submit a research on one of the problems or difficulties s/he faces during the practical teaching using all procedures of the action research, and this is done under the supervision of one of the teachers from the department.

10513111 Introduction to Curriculum

This course involves the development of curriculum concept, its elements, foundations, designs, plans and applications along with educational philosophy and educational theories discussed in the curriculum.

10513220 Educational Readings in English Language

The course includes different types of current readings in English related to different educational issues. The readings include basic educational concepts, students deal with them through analysis, application and generalization in an attempt to build meaningful educational vocabulary, and it aims at enriching students' English language Acquisition.

10513221 Educational Psychology

The course describes educational psychology and its relation to general psychology, how to apply the concepts of behaviorism and cognitivism in the learning process to facilitate the learning process, the suitable classroom environment for learning and slow child learner, handicapped, gifted and the required abilities to complete the learning process, measure it and evaluate learning and teaching.

10513302 Evaluation in schools

The course aims at introducing students to evaluation, its development, aims, and various evaluative methods of selection standards. It also includes different types of tests, and tests' construction, analysis and how to evaluate students' educational achievements based on the results achieved.

10513302 Classroom Management

The course deals with the principles of school management from its different aspects focusing particularly on giving attention to scientific and practical aspects. The school is considered to be the place where efforts cooperate for those working on various educational fields. The methods and techniques used show the level of its success in fulfilling the mission placed on schools for learning and teaching.

10513455 Teaching Design

The course includes designing daily lessons and identifying related cognitive, emotional and psychomotor concepts, and determining activities, methods, evaluation and acknowledging teaching design in applied and social sciences. It also includes introducing students to tasks teachers implement in designing and planning.

10513162 Introduction to psychology

The course introduces description of theories of psychology and its relation with learning and teaching processes, in addition to introducing students to the stages of development and the characteristics of learners. The course also includes a number of educational applications related to theories of psychology.

10513368 Teaching skills

The course deals with different skills related to teaching process such as lesson planning skills, writing educational aims from the cognitive, motto and psychological perspectives and their different levels, it also includes attracting students attention, giving lesson, asking questions, as well as class interaction, using teaching aids, classroom management, designing groups, discussion and evaluation skills.

10513299 Active learning

The course introduces active learning concept including its definitions, goals, foundations, characteristics, features, significance and elements. It also includes suitable classroom environment for active learning, general elements in learning, and strategies of active learning, types (Directed Lecture, Brain Storming, discovery, problem solving, group discussion, role playing, acting, Story Miming and Case Study). It also includes the teacher's role in active learning, active learning outside the class, critical thinking, challenges in active learning, in addition to practical application of active learning in various disciplines.

10513366 Educational Supervision

The course discusses the concept of educational supervision, its different definitions, and the historical development for educational supervision process, the aims of educational supervision, its foundations and importance, the factors affecting educational supervision, the role of educational supervisor, and the role of the principal as a local supervisor. The course also describes the different types of educational supervision, the authoritative, democratic, clinical, protective, scientific, constructive, purposeful, corrective, creative, developmental, class and variety. Furthermore, the course addresses the techniques of educational supervision (classroom visits, illustrative lessons, micro-teaching, meetings, study sessions, self-evaluation) and the problems of educational supervision and its future.

{ Physical Education Programme
Athletic Training Programme }

Vision:

The Programme vision stems from the University vision and philosophy, which stresses on building and preparing a cadre of academic and qualified professionals for relevant institutions, such as the Ministry of Education and Higher Education, Higher Council for Youth and Sports-Palestine, health and fitness centres, sports and military sectors, and the disabled athletic sector. This is to meet the needs of society and its development needs.

Mission:

This programme aligns with the Faculty of Physical Education mission, which aims at preparing students both academically and professionally in order to provide the community with distinct students with BA Degrees in athletic training. A cadre that can secure internships and demonstrate research skills, in order to succeed in training sports clubs in Palestine, health and fitness centres, and physical, military and administrative work in different sports foundations.

General and specific programme objectives:

The Programme aims at achieving the following general objectives:

1. Providing different sectors and relative institutions, such as Ministry of Education and Higher Education, Ministry of Youth, fitness and health clubs, military and sports sectors, and sports sector for people with special needs with a qualified professional cadre; which contributes to meet the needs of society and its development to best advance it in the field of Physical Education and Athletic Training Sciences.
2. Developing students' training abilities, for all ages and sexes.
3. Realisation of the importance of physical and athletic education for the individual, community and different institutions.
4. Preparing students who have the abilities to identify, plan, implement and evaluate attitudes, educational and training units of physical activities and sports in school clubs, youth centres and universities.
5. Providing students with the skills in training and rehabilitating athletes to the required motor and health level to avoid injuries as much as possible.
6. Providing students with the skills to rehabilitate and treat injured players so that they get back to playing.
7. Contributing to the preparation of awareness and educational programmes to introduce the community to the importance of physical education, sports and athletic training.
8. Providing consulting and services related to physical education and local community sport science.
9. Contributing to the development of administrative work, supervision and training in various sports institutions.

10. Developing social relationships and addressing misconceptions about physical education, sports and training to emphasise the importance of physical education for all ages and sexes, including those with special needs.
11. Raising awareness and health education, aiming at achieving a higher quality of life and sports development amongst the community.
12. Employing technology in the development of physical education and sports science.
13. Preparing students who have the ability to identify and utilise the most appropriate tools and modern techniques in training both healthy and handicapped individuals.
14. Preparing students who have the ability to implement related physical education sciences, such as physiology, anatomy, biomechanics, chemistry, measurement, etc. and taking advantage of the various theories in practice.
15. Developing a strategy for problem solving particularly when working on sites that vary in their suitability by utilising the surrounding environment and training.
16. Preparing students who have the ability to spot adolescents with athletic talent according to sound scientific basis, and training them with reference to the modern athletic training techniques.
17. Giving students the necessary leadership skills to lead and train sport teams.

Specific objectives: Intended Learning Outcomes (ILOs)

The Programme's general objectives and courses are represented in the specific objectives and ILOs, thus, they are distributed as follows:

1. Knowledge and Understanding:
 - Students recognise concepts and terminology of physical education and sports sciences.
 - Learning about the history and evolution of sports sciences.
 - Describing the scientific fundamentals of physical education and athletic training.
 - Learning about the basics, fundamentals and methods of athletic training.
 - Learning about the methods of managing and supervising of sports centres.
 - Learning about the methods of rehabilitation and physical therapy for athletes.
 - Learning about the principles and applications of scientific research in the field of athletic training.
 - Understanding and discussing the laws of games and various sporting events.
 - Recognising the technical points of training skills and ways of application and development.
 - Recognising ways of dealing with modern technologies and creating the appropriate environment in the field of sports.
 - Providing students with the skills that can be used in everyday life situations.

- Understanding the student-oriented integrated approaches between various sciences and linking physical education and athletic training with them.
- Understanding the principles and foundations of health, functional, kinaesthetic and psychological aspects of sciences in the field of sports.
- Understanding the foundations and principles of success and skills to be able to work in the field of athletic training.
- Learning about the principles of health in the field of sports.
- Understanding the ways of athletic training.
- Recognising sports injuries, rates of their occurrence and methods of therapy and treatment by using appropriate rehabilitation exercises.
- Knowledge of physical, physiological and psychological measurements and skills in the field of sports.
- Understanding the relationship between nutrition and exercise and obesity and health.
- Awareness of the threats to the health of individuals and society.
- Learning about the chronic diseases such as diabetes, blood pressure and the role of exercise in their treatment.
- Learning about sports laws and events.
- Learning about the basic skills of sports and sports events, and their teaching and training methods.
- Learning the different divisions of sports and sporting events.
- Familiarity with the training loads, components and applications.
- Learning about the body anatomy/ different parts of the body.
- Familiarity with the psychological principles and their importance in education and training.
- Considering students' mechanical principles when teaching sports skills.
- Familiarity with the principles of dynamic analysis of sports skills and events.
- Learning about the scouts and its levels.
- Learning about the principles of athletic selection and its phases.
- Familiarity with the methods of training adults and children.
- Understanding the compound training and its applications for the different age stages.
- Familiarity with the structural construction of sports training.
- Being able to prepare programmes for relaxation and cognitive preparation for athletes.
- Understanding the importance of balancing nutrition and exercise for athletes.
- Distinguishing between nutritional supplements and steroids for athletes.
- Awareness of the importance of exercise for the prevention of skeletal changes.
- Preparing a daily, weekly, monthly, seasonal and annual plan in the field of

athletic training.

- Learning about the methods of developing social relations between players and collective team cohesion.

Graduates expectations:

The programme aspires to prepare specialised cadres who have the experience and capacity to work in all related Palestinian institutions, such as the Ministry of Education and Higher Education, Ministry of Youth, Centres of Health and Fitness, clubs, military sector sports, and sports sector for people with special needs. In addition, the Programme aims at preparing graduates who have the ability to tackle issues in an organised and sophisticated scientific manner, while empowering them to develop; furthermore, ensuring they are capable of being selective in identifying talent and preparing training programmes in Palestine in accordance with scientific methodology, and hence, achieving advancement and development in sports in Palestine and its related institutions.

Total of Credit Hours

Courses	Credit Hours
University Compulsory Courses	18
Compulsory Theoretical Courses	41
Elective Theoretical Courses	6
Compulsory Practical Courses	60
Elective Practical Courses	6
Total	131

Compulsory Theoretical Courses (41 CH)

Course No.	Course Title	CH	Prerequisite
7101107	Introduction to Sport Anatomy	3	-
10536101	Introduction to Sports Education	3	-
10531104	Physiology of Physical Effort	3	7101107
10536102	First Aid and Sports Activity	3	10531104
10536103	Sociology of Sports	2	-
10536204	Sports Management	3	-
10536205	Scientific Methodology and Statistics in Athletic Training	3	-
10531217	Principles of Sports Psychology	2	-
10536206	Motor Learning and Strength	3	-
10531323	Kinesiology	3	7101107
10536307	Sports Injuries and Physiotherapy	3	7101107
10536308	Psychology of Athletic Training	3	10531434
10536409	Training Structure	2	10531434
10536410	Measurement and Evaluation in Physical Education	3	10536205
10531434	Science of Athletic Training	3	-

Theoretical Elective Courses (6 CH)

Course No.	Course Title	CH	Prerequisite
10536211	Contemporary Issues in Physical Education	2	-
10536212	Sports Media	2	-
10531250	Recreation and Leisure Time	2	-
10531356	Sports Marketing	2	-
10536313	Sports of Special Cases	2	-
10536214	Applications of Physiotherapy and Therapeutic Massage	2	10536102
10536215	Leadership Theories	2	-
10536316	Sports Supervision	2	-
10531352	Sport Technology	2	-
10536317	Health and Fitness	2	-

Practical Compulsory Courses (60 CH)

Excluding Football I + II (Females) and Rhythmic Movement I+II (Males)

Course No.	Course Title	CH	Prerequisite
10531102	Conditioning/ Physical Fitness	3	-
10531103	Volleyball I	3	-
10536118	Polymetric and Ballistic Resistance Training	3	10531102
10531107	Athletics I	3	-
10531108	Gymnastics I	3	-
10531210	Basketball I	3	-
10531211	Football I (Males)	3	-
10531212	Rhythmic Movement I (Females)	3	-
10531214	Swimming I	3	-
10531215	Handball I	3	-
10531216	Volleyball II	3	10531103
10536219	Physical Exercise	2	10536118
10531322	Gymnastics II	3	10531108
10531325	Football II (Males)	3	10531211
10531326	Rhythmic Movement II (Females)	3	10531212
10531327	Athletics II	3	10531107
10531328	Field Training I	2	10536219
10531431	Swimming II	3	10531214
10531432	Handball II	3	10531215
10531433	Field Training II	2	10531328
10531435	Basketball II	3	10531210
Students choose 6 CH from the following courses (3 CH- multiplayer sport and 3 CH- singleplayer sport)			
10536420	Football Specialisation + multiplayer	3	10531325
10536421	Volleyball Specialisation + multiplayer	3	10531216
10536422	Basketball Specialisation + multiplayer	3	10531435
10536423	Handball Specialisation +multiplayer	3	10531432
10536424	Gymnastics Specialisation ++ singleplayer	3	10531322
10536425	Athletics Specialisation ++ singleplayer	3	10531327
10536426	Tennis Games Specialisation ++ singleplayer	3	-
10536427	Self Defense Sports ++ Singleplayer	3	-
10536428	Swimming ++ singleplayer	3	10531431

Fifth: Practical Compulsory Courses (6 CH)

Course No.	Course Title	CH	Prerequisite
10531357	Football (Females)	2	-
10531353	Small Games	2	-
10536228	Scouting and Outdoors Life	2	-
10536229	Squash	2	-
10536330	Tennis	2	-
10536231	Badminton	2	-
10536232	Table Tennis	2	-
10536233	Boxing	2	-
10536234	Wrestling	2	-
10536335	Foil (Fencing)	2	-
10536336	Judo	2	-
10536237	Taekwondo	2	-
10531461	Weightlifting	2	-

Course Description

7101107 Introduction to Sport Anatomy

This course is designed for students to acquire the necessary knowledge about the anatomical construction and structures of the human body. It also focuses on the application of the principles of anatomy in physical education and sports and on the motor system which includes muscles, bones, joints and nervous system.

10536101 Introduction to Sports Education

This course aims at introducing students to Physical Education. It highlights its goals, objectives, philosophical foundations, resources of knowledge in the different human and natural sciences and applications in the field of sports. In addition, the course addresses achieving a commendable sports personality, taking into account sports training ethics', promoting ethical practices, which should be reflected positively in the training process. It also looks at the pedagogical ties between the various components of the sports and students' commitment towards sports training awareness to promote the message borne by the individual and society.

10531104 Physiology of Physical Effort

This course studies a number of aspects concerning sports physiology, such as: the responses and adaptation of sports training, the human muscle structure and its function, the energy systems, physiological training theory, the effect of sports training on different human systems, the factors which have influence on physical performance, nutrition and exercise, weight control and body composition.

10536102 First Aid and Sports Activity

The course aims at introducing students to the principles of first aid, different injuries and their first aid requirements, importance of first aid for a sports trainer, in addition to the practical applications of first aid and methods of prevention before and during the exercise of sports activity.

10536103 Sociology of Sports

The course deals with sports being a phenomenon of a social institution, and introduces students to the relationship between sport as a practice and social institutions, such as the family, the school, the company, the union and the media, etc. Also the role of social factors in influencing the activity and physical performance, social theory and its application in the field of sports.

10536204 Sports Management

This course deals with sports management in terms of definition, importance, components, organising and managing different sport related fields, competitions and their methods of organisation and management, records and reports and methods of preparing budgets of physical education and sports, in addition to the ways and means of developing capacities of students to arrange for championships for various local and international sports tournaments.

10536205 Scientific Methodology and Statistics in Athletic Training

This course aims at introducing students to the methodologies of scientific research, its steps, elements, data collection methods, in addition to the primary statistical operations, in terms of basic statistical terms of measures of central tendency, dispersion and simple correlation, standards and methods of construction, as well as ways of examining assumptions and computer based statistical applications.

10531217 Principles of Sports Psychology

This course is designed to introduce the factors and psychological methods in rehabilitation and preparing athletes for the psychological pressures they are likely to face during their career, and the competitions (motivation, personality and tendencies), as well as how to deal with these cases from the theoretical and practical aspects such as injuries, stimulants and drugs. It also helps teachers, trainers and therapists in diagnosing cases and treating them through the application of the psychological methods and mental skills.

10536206 Motor Learning and Strength

This course is designed to introduce students to Motor Learning Theories and the ways of implementing such theories through teaching physical exercise and activities. In addition, this course aims to introduce students to the learning trends, methods and physical movement in addition to the curriculum and planning the stages of growth and the characteristics of each stage in the learning process in basic kinetic skills.

10531323 Kinesiology

This course includes a display of various forms of physical movements, such as straight and closed movements, in sports. It also includes a display of the influencing power or force on the human body and provides a kinetic analysis of some movements and their types for some sport games. This course then focuses on the physics laws pertaining to power, speed, acceleration, gravity and friction, sites of labour and movement transport.

10536307 Sports Injuries and Physiotherapy

This course focuses on: common sports sport injuries, or injuries resulting from sports training and exercise, the causes and symptoms of these injuries, the ways and means for protection and prevention and the proper method of first aid or natural treatments. This course provides knowledge and training in first aid and on the resuscitation of a patient's heart and lungs.

10536308 Psychology of Athletic Training

The course aims at introducing students to the role and impact of the trainer on the players and their performance, importance of sports and training in meeting the challenges and various competitions, various kinds of psychological characteristics for players, trainer, coaches and managers; in addition to preparing special programmes for mental training that addresses stress management symptoms in players and trainers may face during competition, and how to build trust, concentration and information skills toward the achievement of objectives.

10536409 Training Structure

This course aims at introducing students to sports' planning and training structures, preparing suitable training programmes, preparing daily, weekly, monthly, seasonal, annual, four years and long term plans.

10536410 Measurement and Evaluation in Physical Education

This course aims to identify the fundamental concepts of "Measurements" and "Evaluation" in physical education. It also introduces students to the scientific criteria for testing and evaluating different programmes in physical education and providing remedies for common errors in measurement. Furthermore, this course focuses on the anthropometrics, skills, physical fitness, and physiological and psychological measurements in physical education and sports. It also focuses on finding ways to prepare standards and levels geared towards physical education programmes. The course also aims at providing students with a statistical introduction that includes some descriptive statistics and how to build tests and science operations (validity, reliability, objectivity and standards).

10531434 Science of Athletic Training

The course aims to introduce students to the concept of the science of sports training, its development and principles, the principles, foundations and means of developing physical attributes, capabilities and planning skills. It also focuses on theoretical, psychological and administrative preparation of players; ways to prepare training modules and planning for the sports season, the means and methods of players' selection on sound scientific bases in different sports, as well as identifying multiple training methods in the preparation and development of sports in the collective and individual games and the coach's role in that.

10536211 Contemporary Issues in Physical Education

This course aims at introducing students to contemporary issues concerning physical education. In addition, it aims at discussing topics such as: modern physical education, the reality of physical education graduates in term of the development of labour market, modern terms of sport (sport and politics, sport globalization, homogenization and slavery, bribery and manipulation of the results, world mafia, and sports betting), interviews with professional players and players with special needs, football violence, sports professionalism, women and sports, sports marketing, sports and technology, match analysis, management of clubs and institutions, rhythmic gymnastics, stimulants, contemporary diseases, sudden death, sports for special needs, some modern games and other important issues.

10536212 Sports Media

This course is designed to introduce students to the importance of mass media, whether it is visual, written or audible, and the important role it plays in enhancing the level of sport and its elements. Furthermore, this course aims to illustrate the role of sports media in raising the society's level of understanding of sports.

10531250 Recreation and Leisure Time

This course aims to introduce students to the importance of recreation and leisure time for both individuals and society. It also looks at the types and forms of recreation and leisure time in terms of its goals, objectives and the characteristics of each form of recreation and leisure time. Furthermore, this course highlights the educational programmes of recreation and leisure time, forms students' cognitional knowledge of recreation and leisure time programmes and their importance and implications and identifies with their management and organisation.

10531356 Sports Marketing

This course is designed to introduce students to concepts pertaining to sports marketing in terms of its elements, steps, and its roles in the success of local, regional and international sports tournaments and championships. This course looks at holding and participating in sports tournaments and championships as an economic incentive or source of income, in addition to the right of media coverage at such events. It explores the production of sports needs and the processes of manufacturing them, offers exposure to previous models of marketing plans for the sale of such tournaments and championships events and investment in the field of sport and professionalism.

10536313 Sports of Special Cases

The course aims to provide students with the knowledge on how to set up special training programmes for children and adults with disabilities, in terms

of taking into account the training components, appropriate training tools, training and principles, and assessment of training programmes.

10536214 Applications of Physiotherapy and Therapeutic Massage

The course aims to highlight the use of massage, and its types and methods. It also introduces students to athletic rehabilitation and exercise rehabilitation for some injuries, as well as to exercise as a countervailing duty to prevent skeletal distortions; in addition to the aims to exercise, applied in the treatment of certain infections and natural skeletal distortions and the practical applications of different types of massages.

10536215 leadership Theories

The course aims at introducing students to leadership in terms of its concept, theories and applications in the field of sports. It also focuses on its different styles and their applications in sports training for all ages, and in sports institutions.

10536316 Sports Supervision

This course deals with the concept of educational supervision and its definitions, its historical evolution, objectives and foundations. The course also addresses the importance of educational supervision and factors affecting it, duties and roles of the educational supervisor- and trainer, areas of educational supervision, roles of the educational supervisor and trainer and supervisory role, and theories of supervision, and the types of Educational Supervision and applications among trainers (dictatorship, democratic, clinical, participatory, preventive, scientific, structural, purposeful, corrective, creative, evolutionary, classroom and quantitative).

10531352 Sports Technology

This course aims to introduce students to the modern devices used in the field of sports and tournaments and the methods of measurement and selection, and their use in managing sports' institutions.

10536317 Health and Fitness

The course aims to introduce students to the concept of fitness, its components in general and health-related elements, in particular. It also identifies the sports programmes of health, nutrition and human health linkage to exercise and sport.

10531102 Conditioning/ Physical Fitness

The course aims to introduce fitness components associated with health, as well as ways to measure through sports activities the development of the respiratory system until students acquire the overall fitness. It also displays models of training modules special for physical preparation for the development of the aforementioned components.

10531103 Volleyball I

This course is designed to teach students the basic skills necessary for playing volleyball, such as: serving, receiving, setting, striking, covering and blocking. In addition, this course acquaints students with the common violations in volleyball and students will develop learning exercises for the acquisition of skills.

10536118 Polymetric and Ballistic Resistance Training

The course focuses on resistance exercises for different muscle groups, appropriate training programmes, and their practical applications. In addition to polymetric training for upper and lower limbs, preparing polymetric training programmes their practical applications.

10531107 Athletics I

This course is designed to teach students athletic skills such as track activity, sprinting and long- distance running. In addition, students will be introduced to holders, fencing, relay and walking.

10531108 Gymnastics I

This course is designed to teach students the basic skills necessary for gymnastic exercises. Male and female students must acquire the skills of performing floor exercises and the floating table (female and male students) and male students will also learn how to use the parallel bars.

10531210 Basketball I

This course is designed to teach students the fundamental skills. Students will acquire the following skills: passing, dribbling and shooting the ball. Students will learn the skill of maneuvering and being in a stance of readiness.

10531211 Football I

This course aims to give an idea of the skill and its importance for the player with a clear explanation and teaching of the basic principles of football, provided with a clear vision of this sports, , in addition the best ways to teach all the basic and complex skills.

10531212 Rhythmic Movement I

This course is designed to teach female students the fundamental skills for various body parts without using any tools or equipment. The primary focus of these exercises will be on the movement of the hands and the feet, jump in all its forms and types and turnover forms, knees movements (deep knee bends), deep bending and types of rhythmic walk and ballet dance.

10531214 Swimming I

The aim of this course is to introduce students to the historical development of swimming. In addition, it teaches students the fundamental principles of swimming in terms of diving and sensing water, floating and swimming on the chest.

10531215 Handball I

The course aims to teach students the fundamental skills in handball. Students will acquire the following fundamental skills: passing and scoring the ball, running, receiving and sneaking with the ball.

10531216 Volleyball II

This course is designed to teach students the basic skills of defensive and offensive strategies for the sport of volleyball. In addition, this course introduces students to the trainer's duties, the ways of playing, the regulating rules of this sport and its application.

10536219 Physical Exercises

This course aims at introducing students to a particular sport where the students write exercises about sports and apply them. In addition, students will have the opportunity to learn a set of simple exercises without using any tools or equipment. The students also will be introduced to the concepts of physical exercises and original and extracted positions and writing exercises.

10531322 Gymnastics II

This course is designed to help students acquire the basic and fundamental skills of gymnastics: pommel horse, horizontal bar and rings for men, and balance beam for female students. In addition, this course acquaints students with the rules of this sport and organizing championships in gymnastics.

10531325 Football II

This course is designed to help students to acquire the necessary skills for playing football, such as: being able to master the fundamental physical movements on the pitch, being able to acquire the defense and offensive strategies and tactics in the game and being able to comprehend the rules.

10531326 Rhythmic Movement II

This course is a review of the types of skills and exercises which students have learned in the Rhythmic Movement course. In addition, students will acquire some rhythmic skills; accompanied with music, they will use some equipment, such as the ring, to enhance their ability to perform such exercises. Furthermore, students will be introduced to types of dance, particularly oriental and folkloric types.

10531327 Athletics II

This course is designed to teach students field racing, the techniques of throwing heavy balls, the techniques of shot put, the discus, and the javelin and the techniques of jumping events (long, triple, and high jump). In addition, students will have the opportunity to learn the rules of this sport.

10531328 Filed Training I

This course aims at getting the students familiarised with active participation and observation study of physical education and the application of certain parts in internal and external school activities, as well as getting them familiarised with commitment to school attendance from the morning assembly until they leave.

10531431 Swimming II

The aim of this course is to teach the fundamental principles of swimming-types, such as free swimming, butterfly-swimming and dolphin-swimming. Alongside this, students will learn the rules of the sport of swimming.

10531432 Handball II

This course is designed to help students acquire the necessary physical movements for the sport of handball by introducing them to the defensive and offensive plans in handball games and teaching them the rules and regulations and applying them.

10531433 Field Training II

This course is designed to train students to carry out the tasks of the physical education trainer/ teacher in terms of: teaching and carrying out the designated lesson plans at the school, supervising indoor and outdoor activities at clubs, fitness centres and sports unions, and supervising the preparation, application and discussion of plans with a counselor.

10531435 Basketball II

This course is designed to teach students the basic skills necessary for the sport of basketball. In addition, this course introduces students to the defensive and offensive strategies in group playing. Finally, this course acquaints students with the rules regulating this sport and its application.

10536420 Football

This course covers the foundations of educational and biological football development and evolution, the foundations of selecting youths for this game and how to develop training plans and mechanism for the development of leadership qualities, moral and social development through the positions of play. The course deals with teaching students the assets of the organisation and management of the games with a practical application to develop the skills level, tactical performance and arbitration and team leadership arts.

10536421 Volleyball

This course covers the foundations of educational and biological volleyball development and evolution, the foundations of selecting youths for this game and how to develop training plans and mechanism for the development of leadership qualities, moral and social development through the positions of play. The course deals with teaching students the assets of the organisation

and management of the games with a practical application to develop the skills level, tactical performance and arbitration and team leadership arts.

10536422 Basketball

This course covers the foundations of educational and biological basketball development and evolution, the foundations of selecting youths for this game and how to develop training plans and mechanism for the development of leadership qualities, moral and social development through the positions of play. The course deals with teaching students the assets of the organisation and management of the games with a practical application to develop the skills level, tactical performance and arbitration and team leadership arts.

10536423 Handball

This course covers the foundations of educational and biological handball development and evolution, the foundations of selecting youths for this game and how to develop training plans and mechanism for the development of leadership qualities, moral and social development through the positions of play. The course deals with teaching students the assets of the organisation and management of the games with a practical application to develop the skills level, tactical performance and arbitration and team leadership arts.

10536424 Gymnastics

The course aims at upgrading excellent students performance in gymnastics in terms of knowledge and science, and it also aims to introduce students to the difficulty of performance skills and the application of the laws of other gymnastic sciences such as (kinesiology, motor learning, kinetic analysis, mechanic and Kinematics), as well as the foundations of selecting youths/ rookies to the sport, and planning for the training season, organising and managing gymnastics competitions and arbitration arts.

10536425 Athletics

The course aims to teach students about the organisation and management of competitions in athletics, practical applications in training and development of training programmes in athletics, installing technique decathlons and deptathlons, and train students on the basis of the selection and arts of arbitration in athletics.

10536426 Tennis Games

The course aims at upgrading excellent students performance in tennis game (Ping-Pong, Tennis, Squash, Badminton) in terms of knowledge and science, and it also aims to introduce students to the difficulty of performance skills and the application of the laws of other gymnastic sciences such as (kinesiology, motor learning, kinetic analysis, mechanic and Kinematics), as well as the foundations of selecting youths/ rookies to the sport, and planning for the training season, organising and managing gymnastics competitions and arbitration arts.

10536427 Self Defense Sports

The course aims at upgrading excellent students performance in self defense sports (Judo, Karate and Taekwondo) in terms of knowledge and science, and it also aims to introduce students to the difficulty of performance skills and the application of the laws of other gymnastic sciences such as (kinesiology, motor learning, kinetic analysis, mechanic, Kinematics and psychology), as well as the foundations of selecting youths/ rookies to the sport, and planning for the training season, organising and managing gymnastics competitions and arbitration arts.

10536428 Swimming

The course aims at providing students with the knowledge and practices of the theories and specialised training applied in swimming in order to enhance the elements of special fitness such as strength, speed, flexibility and endurance. It also addresses the physiological aspects of swimming (energy production systems, and conducting trainings depending on heart pulses in the aerobic and anaerobic training); in addition to learning some swimming training principles (seasonal planning, overload, adaptation, pyramid of success and daily-weekly training plan). Finally, identifying the causes of drowning and rescue in natural water.

10531357 Football (Females)

This course is designed to teach female students the basic and fundamental skills necessary for the sport of football such as: ball control, ball-kicking with the foot and the head, ball-jogging, ball-passing, ball-aiming, ball-tricking, ball-faking, dribbling and border cut.

10531353 Small Games

This course is designed to introduce students to the types of small games and their application in a variety of sports. In addition, students will learn how to write such types of small games and how to select their names, as well as applying the small games to set introductory games for adults.

10536228 Scouting and Outdoors Life

The course introduces outdoors life, acquainting students with self-reliance skills, camping skills, using the environment to organise activities and events related to scouting and outdoors life.

10536229 Squash

This course is designed to teach students the basic skills of the sport of squash and rules for playing and refereeing this sport.

10536330 Tennis

This course is designed to teach students the necessary skills for the sport of court tennis in terms of acquiring some competence in movement skills, in footwork, in the holding of the racket, in forehand and backhand strokes and other basic stroke techniques. In addition, students will learn the rules of this sport.

10536231 Badminton

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of badminton and the ways of performing it, along with becoming acquainted with the rules of this sport.

10536232 Table Tennis

This course is designed to introduce students to the theories pertaining to the basic skills and application of table tennis. In addition, students will have the opportunity to learn the rules of refereeing individual and double games.

10536233 Boxing

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of boxing and the ways of performing it, along with becoming acquainted with the rules of this sport.

10536234 Wrestling

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of wrestling and the ways of performing it, along with becoming acquainted with the rules of this sport.

10536335 Foil (Fencing)

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of foil (fencing) and the ways of performing it, along with becoming acquainted with the rules of this sport.

10536336 Judo

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of judo and the ways of performing it, along with becoming acquainted with the rules of this sport.

10536237 Taekwondo

This course is designed to introduce students to the importance of this sport. In addition, students will have the opportunity to learn the basic skills of taekwondo and the ways of performing it, along with becoming acquainted with the rules of this sport.

10531461 Weightlifting

This course is designed to introduce students to the sport of weightlifting by using various tools, instruments and exercises. In addition, students will learn different forms of weightlifting and rules of this sport.

Faculty Members:

Name	Academic Ranking	University of Graduation
Prof. Abdel Nasser Al-Qadoomi	Full Professor	National Academy of Physical Education and Sports, Romania
Prof. Imad Saleh Abdelhaq	Full Professor	Russian State University of Physical Education, Sport, Youth and Tourism, Russia
Dr. Waleed Khanfer	Associate Professor	Bucharest University, Romania
Dr. Bader Refat Dweikat	Assistant Professor	Sudan University of Science and Technology, Sudan
Dr. Muain Hafez Hassan	Assistant Professor	Sudan University of Science and Technology, Sudan
Dr. Raghida Mufleh	Assistant Professor	University of Jordan, Amman
Dr. Qais Nu'airat	Assistant Professor	National University of Physical Education and Sport of Ukraine
Dr. Malik Shaker	Lecturer	Ohio University, USA
Irina Abdelhaq	Instructor	Russian State University of Physical Education, Sport, Youth and Tourism, Russia
Dr. Mahmoud Atrash	Assistant Professor	University of Jordan
Sulaiman Alamad	Instructor	Yarmouk University, Jordan
Mohammad Qadoomi	Instructor	University of Paris 2
Eiman Abu Joub	Instructor	Sudan University of Science and Technology, Sudan

┌ Faculty of Sciences ┐
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{ Program in Biology }

The Department of Biological Sciences, established in 1977, offers undergraduates a practical knowledge of living matter on the cellular organism and population levels. Fundamental subjects, such as cell biology, genetics, physiology, microbiology, biochemistry, and ecology, are supplemented by a wide variety of elective courses. All these courses combined prepare students for future careers in teaching, research, and work in industry, agriculture and public health.

In addition, the Department offers an undergraduate biotechnology program as a minor. In this program, students learn basic and applied biotechnology techniques including techniques in molecular biology, bioinformatics, genetic engineering, enzyme and protein production, and industrial production of pharmaceutical products. This program is very beneficial as it prepares students to apply different biotechnology techniques in medicine, agriculture, immunology, pharmacy and other fields.

In addition to its undergraduate programs in biology and biotechnology, the Department offers a graduate program under the supervision of a highly qualified staff to offer the Masters Degree.

Department Vision

Provide undergraduate students with the essential requirements for a comprehensive undergraduate education in various biological disciplines to produce knowledgeable and competitive graduates who can advance to professional fields or graduate programs, or enter employment in the public and private sectors.

Department Mission

Provide an outstanding learning environment that integrates distinguished education and research and actively engages students in the biological sciences and prepares them for careers in research and teaching in modern biology and biotechnology.

Graduation Requirements

To earn a B.Sc. degree in biology, the student must successfully complete **126** credit hours. These include university compulsory courses as well as department compulsory and elective courses.

- | | |
|----------------------------------|-----------------|
| 1. University compulsory courses | 18 credit hours |
| 2. Department compulsory courses | 90 credit hours |
| 3. Department elective courses | 18 credit hours |

General Program Intended Learning Outcomes

- Acquire fundamental and practical knowledge of biological sciences.
- Generate new ideas using fundamental knowledge in biological sciences.
- Communicate scientifically (orally and in writing) regarding concepts and arguments in biological sciences.
- Solve problems using scientific approach in their field of specialization.
- Work collaboratively as individuals and in teams.
- Apply high ethical standards in professional practice and social interactions for sustainable development.

Department compulsory courses

Course #	Course Title	Credits	Prerequisite
10201101	General Biology I	3	
10201102	General Biology II	3	10201101
10201107	General Biology I Lab.	1	10201101, or concurrent with 10201101
10201108	General Biology II Lab.	1	10201107; 10201102; or concurrent with 10201102
10211106	General Mathematics for Biology Students	3	
10221104	General Physics for Medical and Biology Students	3	
10221114	General Physics for Medical and Biology Students Lab	1	10221104 or concurrently
10231101	General Chemistry I	3	
10231102	General Chemistry II	3	10231101
10231107	General Chemistry I Lab.	1	
10231108	General Chemistry II Lab.	1	10231107
10231212	Analytical Chemistry	3	10231102 10231108
10231216	Practical Analytical Chemistry	1	10231212 or concurrently
10231233	Organic Chemistry	3	10231102 ;10231108
10231237	Practical Organic Chemistry	1	10231233
10201232	Genetics	3	10201102 ;10201108
10201311	Biochemistry	4	10231233
10201310	Biochemistry Lab.	0	10201311 or concurrently
10201341	Microbiology	4	10201102
10201340	Microbiology Lab.	0	10201341 or concurrently
10201423	Histology and Comparative Anatomy	4	10201321
10201424	Histology and Comparative Anatomy Lab.	0	10201423 or concurrently
10201372	Ecology	3	10201102 10201108
10201373	Ecology Lab.	0	10201372 or concurrently
10201352	Plant Anatomy and Physiology	3	10201254
10201353	Plant Anatomy and Physiology Lab.	0	10201352
10201362	Animal Physiology	3	10201264
10201365	Animal Physiology Lab.	0	10201362
10201254	Botany	4	10201102; 10201108
10201257	Botany Lab.	0	10201254 or concurrently
10201264	Zoology	4	10201102 10201108
10201260	Zoology Lab.	0	10201264 or concurrently

Course #	Course Title	Credits	Prerequisite
10201405	Developmental Biology	3	10201392; 10201264
10201400	Developmental Biology Lab.	0	10201405 or concurrently
10201496	Graduation Project	2	Department approval
10201321	Cell Biology	3	10201311
10216237	Biostatistics for Biology Students	2	
10206392	Molecular Biology	3	10201232; 10201321
10206410	Bioinformatics	2	10206392
10206411	Bioinformatics Lab.	0	10206410
10512182	Methods for Science Teaching	3	
10201492	Seminar	0	Department Approval
10201347	Immunology	3	10201341
10201348	Immunology Lab.	0	10201347
10201448	Practical Training	6	
Total		90	

Department elective courses

Course #	Course title	Credits	Prerequisite
10201364	Parasitology	3	10201102 ;10201108
10201366	Parasitology Lab.	0	10201364 or concurrently
10206346	Fermentation and Industry	3	10201341
10201344	Medical Microbiology	3	10201341
10201462	Endocrinology	3	10201362
10201442	Mycology	3	10201341
10201443	Mycology Lab.	0	10201442 or concurrently
10206490	Recombinant DNA Technology	3	10206393
10206488	Recombinant DNA Technology Lab.	0	10206490 or concurrently
10206323	Plant Cell Culture	3	10201321; 10201341
10206325	Plant Cell Culture Lab.	0	10206323 or concurrently
10201444	Virology	3	10206341
10201481	Special Topics	3	Department approval
10206413	Protein Purification	2	10201311
10201222	Microtechnique	3	10201102; 10201108
10201220	Microtechnique Lab.	0	10201222
10206324	Animal Cell Culture	2	10201321; 10201341
10206326	Animal Cell Culture Lab.	0	10206324
10201256	Plant Taxonomy	3	10201254
10201258	Plant Taxonomy Lab.	0	10201256
Total		18	

Course Descriptions

10201101 GENERAL BIOLOGY I

This course is a discussion of biological activity on the level of the cell, including cell structure, chemical constituents, architecture, material exchange with the environment, the role of the cell membrane, major energy generating biochemical pathways, cellular respiration, photosynthesis, control of cellular activities and basic concepts in genetics.

10201102 GENERAL BIOLOGY II

This course is a discussion of biological activity on the level of the organism, including structure and function of body parts, and responses of organisms to their biological and physical environments.

10201107 PRACTICAL GENERAL BIOLOGY I

This course provides students with scientific background and practical procedures for the various experiments on biological principles discussed in General Biology I.

10201108 PRACTICAL GENERAL BIOLOGY II

This course provides students with scientific background and practical procedures for the various experiments on biological principles discussed in General Biology II.

10201232 GENETICS

Students study the principles of classical genetics and the molecular basis of inheritance in terms of structure, function and changes in genetic material in viruses, bacteria and higher organisms; transmission and expression of genetic material; recombinant DNA and bioengineering.

10201254 BOTANY

This course introduces students mainly to the dominant plants on our planet: the seed vascular non-flowering and flowering plants. General comparison of the vascular plants to the lower groups of the algae, fungi and non-vascular plants will be held in this course to understand the evolutionary features of the vascular plants. Plant development and important plants to human (economical, medicinal, food, and different phytogeography in Palestine) will be considered.

10201264 ZOOLOGY

This course is a survey of the animal kingdom with an emphasis on its history and organization. Particular attention is paid to special structures and mechanisms evolved by selected representatives of major phyla for solving problems of life in various environments.

10201311 - BIOCHEMISTRY

This course covers fundamentals of biochemistry including structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and function and introduction to bioenergetics.

10201321 CELL BIOLOGY

Topics covered include structure and function of cells and organelles, including membrane structure and transport; bioenergetics of mitochondria and chloroplasts; cell motility; DNA replication; protein synthesis and transport; mitosis and meiosis. In addition, the course touches on various modern techniques used in cell biology.

10206323 PLANT CELL CULTURE

This course covers the principles of plant cell, tissue and organ culturing techniques used to regenerate whole plants from different types of explants. Laboratory experience is gained in preparation of culture media supplemented with different plant growth regulators, and their influence on in vitro micropropagation of different plant species.

10206324 - ANIMAL CELL CULTURE

This course illustrates the use of basic cell culture techniques for bioscience research. Students are introduced to cell cultivation methods, including proper use of a biological safety cabinet, sterile technique, cell enumeration and media preparation, primary cultures, cultivation of cell lines, detection of contamination, cryopreservation, transfection. The course ends with an introduction to bioassays and application of molecular techniques to in vitro situations.

10201341 MICROBIOLOGY

This course covers morphology, physiology, classification, and cultivation of bacteria. This course focuses on biological (especially microbiological) systems by which materials and energy can be interconverted (e.g., waste products into useful chemicals or fuels, or antibiotic production). Manipulation of microorganisms capable of producing high value industrial substances is also discussed.

10201347 IMMUNOLOGY

This course aims at understanding the mechanisms of the immune system with special focus on antigen antibody structure and function, cells and

tissues of immune system, lymphocyte activation and specificity; effector mechanisms; complements, major histocompatibility complexes, B- and T-cell receptors. It also provides a background to the functions of innate and adaptive immunity (cellular and humoral), genetics of immune system, vaccines, autoimmunity, hypersensitivity, with an emphasis on some basic techniques used in immunology.

10201352 PLANT ANATOMY AND PHYSIOLOGY

Plant anatomy and physiology is the study of plants' different function related to their anatomical features. This course teaches what plants do, and what chemical and physical factors cause plants to respond as they do in their environment. During this course, we will explore several important processes which allow plants to survive in their environment. Structure-function relationships will be emphasized, in addition to ecological implications of the physiological process under investigation.

10201256 PLANT TAXONOMY

Plant taxonomy is the science of plant classification. Systematics is the science of organisms' diversity. It entails the discovery, description and interpretation of biological diversity. Plant Taxonomy course is a systematic overview of the plant kingdom focusing on the classification and identification of unknown plant specimens. This course is designed to provide students with the basic understanding of the plant vegetative and reproductive terminology used in plant identification of the flowering plants. This course will provide students with working knowledge and common recognition of the most common flowering plant families of Palestine and neighboring regions.

10201362 ANIMAL PHYSIOLOGY

This course is a study of functions of the major tissue types and organ systems of multicellular animals, with emphasis on human physiology in health and disease. The use of invertebrate and vertebrate animal models in research, and comparisons of functional adaptations in non-human systems will also be covered.

10201364 PARASITOLOGY

This course is designed to explore the various aspects of parasitology. Emphasis will be placed on the life cycles of major parasitic organisms attacking humans and animals.

10201372 ECOLOGY

This course is an introduction to fundamentals of ecology and principles related to populations, communities and ecosystems. Particular emphasis is placed on the many dimensions of interdependence within ecosystems.

10206392 MOLECULAR BIOLOGY

This course is a study of gene structure, function and control at the molecular level. Molecular techniques used to analyze nucleic acid and protein activity and diversity are also discussed.

10206393 TECHNIQUES IN MOLECULAR BIOLOGY

This laboratory course aims at applying molecular techniques to investigate a variety of biological questions. Techniques include cloning, DNA/Protein fingerprinting, RFLP, Blotting, PCR, and DNA sequencing.

10201405 - DEVELOPMENTAL BIOLOGY

This course is a detailed survey of the processes of animal development, including fertilization, cleavage and organogenesis. Emphasis is placed on current techniques for studying development, such as recombinant DNA technology.

10206410 BIOINFORMATICS

Bioinformatics is the science of storing, extracting, organizing, analyzing, and interpreting biological sequence data. The course is designed to introduce the most basic concepts and up-to-date developments, methods, and tools used in bioinformatics. Topics include bioinformatics databases, resources at NCBI and EBI, sequence and structure alignment, file formats, analysis of single DNA and protein sequences, BLAST, primer design, function predictions, phylogenetics, and protein structure prediction. Internet laboratory for teaching the databases and data mining tools will be considered.

10206412 NANOBIOLOGY

Nanobiology can be considered the intersection of biology and nanotechnology. Much of nanobiology involves using the tools and techniques of molecular biology to manipulate and analyze nucleic acids and proteins. This course introduces students to biological molecules and self-assembled biological nanostructures and nanomachines. Biological systems provide a rich range of examples of specialized chemical systems that are structured on the nanoscale, Nanofibres, microtubules, viruses, and ribosomes are examples of systems that can be studied from the perspective of nanoscience.

10206413 PROTEIN PURIFICATION

This is a laboratory course in protein isolation and purification techniques.

10201222 MICROTECHNIQUE

Students, in this course, will learn about the basic principles and techniques for the preparation of microscopic slides of animals, plants, and bacteria. In addition, they will also learn about tissue culture, using microtome, and microscopic photography and study microscopy (light and electron).

10201423 HISTOLOGY AND COMPARATIVE ANATOMY

This course is a study of the basic types of tissues and organs at the microscopic level. Structure and associated functions are emphasized. The laboratory concentrates on the light microscopic study of tissues and offers students the opportunity to perform basic histological techniques.

10201442 MYCOLOGY

The aim of this course is to allow students to gain both knowledge about mycology as well as practical skills for handling the major fungal nutritional groups including mycorrhizal, saprotrophic and pathogenic fungi. The course addresses the following topics: growth physiology and nutrition, saprotrophic lifestyles, mycorrhizal fungi and biotrophic lifestyles, fungal diversity and phylogenetic species recognition, genetics and population genetics, fungal communities and interactions, and applied mycology including fungal biotechnology.

10201444 VIROLOGY

This course covers molecular/cell biology of viral structure, function, and evolution, with emphasis on pathological mechanisms of various human disorders.

10201462 ENDOCRINOLOGY

The course covers the endocrine system and its hormonal products, including the hormone producing cells, synthesis and modification of the hormones, release and transport of the hormones, hormone receptors and the mechanisms of hormone action, the effects of hormones on target cells, the effects of hormones on physiological processes as well as diseases caused by inappropriate hormone functions.

10201481 SPECIAL TOPICS

In this course, Department raise advanced topics in the field of Biology/ Biotechnology.

10206490 RECOMBINANT DNA TECHNOLOGY

This course presents the fundamental aspects of techniques for DNA construction, cloning, and expression in host cells, with special emphasis on DNA cloning and expression vectors, restriction enzymes and ligases, gene cassette elements, gene isolation from genomic DNA, creation of genomic and cDNA libraries.

10201492 SEMINAR

In this seminar, students conduct studies and hold discussions on modern biological problems.

10201496 Graduation Project

This is a Department directed research in one field of biology.

10201448 Practical Training

The biology curriculum covers a wide range of courses on major areas in biological sciences. These courses are designed to help students who are interested in a career in education and research and have intentions to pursue graduate study. Training will be mainly in schools.

The Teaching Staff

Name	Academic Rank	University of Graduation
Ghaleb Odwan	Associate Prof.	Aristotle University of Thessaloniki, Greece.
Kamel Odwan	Associate Prof.	Middle East University, Turkey.
Raed Al-Kawni	Associate Prof.	University of Bari, Italy.
Sabri Mahmoud Nasir	Assistant Prof.	Ghent University, Belgium.
Nael Abu-Alhasan	Assistant Prof.	University of Glasgow, Scotland.
Awni Abu-Hijli	Assistant Prof.	Middle East University, Turkey.
Hani Al-Ahmad	Assistant Prof.	Weizmann Institute of Science, Israel.
Sami Ya'esh	Assistant Prof.	Durham University, Britain.
Salwa Khalaf	Assistant Prof.	Glasgow, Scotland.
Mu'tasim Al-Masri	Assistant Prof.	Aristotle University of Thessaloniki, Greece.
Ghadeer Omar	Assistant Prof.	University of Jordan, Jordan.
Ashraf Sawafta	Assistant Prof.	Paris 6, Paris
Sami Bdir	Instructor	Yarmouk University Jordan.
Nasir Jarrar	Lecturer	Yarmouk University Jordan.
Fatina Al-Hanbali	Instructor	University of Jordan, Jordan.
Lubna Abdallah	Instructor	Yarmouk University, Jordan.
Shoroq Ismaeil	Instructor	University of Bonn, Germany.

{ Program in Bio-technology }

The Department of Biological Sciences, established in 197, offers undergraduates a practical knowledge of living matter on the cellular organism and population levels. Fundamental subjects, such as cell biology, genetics, physiology, microbiology, biochemistry, and ecology, are supplemented by a wide variety of elective courses. All these courses combined prepare students for future careers in teaching, research, and work in industry, agriculture and public health.

In addition, the Department offers an undergraduate biotechnology program as a minor. In this program, students learn basic and applied biotechnology techniques including techniques in molecular biology, bioinformatics, genetic engineering, enzyme and protein production, and industrial production of pharmaceutical products. This program is very beneficial as it prepares students to apply different biotechnology techniques in medicine, agriculture, immunology, pharmacy and other fields.

In addition to its undergraduate programs in biology and biotechnology, the Department offers a graduate program.

Department Vision

Provide undergraduate students with the essential requirements for a comprehensive undergraduate education in various biological disciplines to produce knowledgeable and competitive graduates who can advance to professional fields or graduate programs, or enter employment in the public and private sectors. .

Department Mission

Provide an outstanding learning environment that integrates distinguished education and research and actively engages students in the biological sciences and prepares them for careers in research and teaching in modern biology and biotechnology.

Graduation Requirements

To earn a B.Sc. degree in biology, the student must successfully complete 126 credit hours. These include university compulsory courses as well as department compulsory and elective courses.

- | | |
|----------------------------------|-----------------|
| 1. University compulsory courses | 18 credit hours |
| 2. Department compulsory courses | 89 credit hours |
| 3. Department elective courses | 18 credit hours |

General Program Intended Learning Outcomes

- Acquire fundamental and practical knowledge of biological sciences.
- Apply appropriate techniques in biological sciences.
- Generate new ideas using fundamental knowledge in biological sciences.
- Communicate scientifically (orally and in writing) regarding concepts and arguments in biological sciences.
- Solve problems using scientific approach in their field of specialization.
- Work collaboratively as individuals and in teams.
- Apply high ethical standards in professional practice and social interactions for sustainable development.

Department compulsory courses

Course #	Course title	Credits	Prerequisite
10201101	General Biology I	3	
10201102	General Biology II	3	10201101
10201107	General Biology I Lab.	1	10201101
10201108	General Biology II Lab.	1	10201107; 10231102 or concurrent
10211106	General Mathematics for Biology Students	3	
10221104	General Physics for Medical and Biology Students	3	
10221114	General Physics for Medical and Biology Students Lab	1	10221104 or concurrently
10231101	General Chemistry I	3	
10231102	General Chemistry II	3	10231101
10231107	General Chemistry I Lab.	1	10231101 or concurrent
10231108	General Chemistry II Lab.	1	10231107; 10231102 or concurrent with it
10231212	Analytical Chemistry	3	10231102 10231108
10231216	Practical Analytical Chemistry	1	10231212 or concurrently
10231233	Organic Chemistry	3	10231102 10231108
10231234	Practical Organic Chemistry	1	10231233
10201232	Genetics	3	10201102 10201108
10201311	Biochemistry	4	102312331
10201310	Biochemistry Lab.	0	10201311 or concurrently
10201341	Microbiology	4	10201102
10201340	Microbiology Lab.	0	10201341 or concurrently
10201423	Histology and Comparative Anatomy	4	10201321
10201424	Histology and Comparative Anatomy Lab.	0	10201423 or concurrently
10201372	Ecology	3	10201102 10201108
10201373	Ecology Lab.	0	10201372 or concurrently
10201352	Plant Anatomy and Physiology	3	10201254
10201353	Plant Anatomy and Physiology Lab.	0	10201352
10201362	Animal Physiology	3	10201264
10201365	Animal Physiology Lab.	0	10201362
10201254	Botany	4	10201102; 10201108
10201257	Botany Lab.	0	10201254 or concurrently
10201264	Zoology	4	10201102 10201108
10201260	Zoology Lab.	0	10201264 or concurrently
10201405	Developmental Biology	3	10201392; 10201264

Course #	Course title	Credits	Prerequisite
10201400	Developmental Biology Lab.	0	10201405 or concurrently
10201496	Graduation Project	2	Department approval
10201321	Cell Biology	3	10201311
10216237	Biostatistics for Biology Students	2	
10206392	Molecular Biology	3	10201232; 10201321
10206410	Bioinformatics	2	10206392
10206411	Bioinformatics Lab.	0	10206410
10512182	Methods for Science Teaching	3	
10201492	Seminar	0	Department Approval
10201347	Immunology	3	10201341
10201348	Immunology Lab.	0	10201347
10201446	Practical Training	6	
Total		90	

Department elective courses

Course #	Course title	Credits	Prerequisite
10201364	Parasitology	3	10201102 10201108
10201366	Parasitology Lab.	0	10201364 or concurrently
10206346	Fermentation and Industry	3	10201341
10201344	Medical Microbiology	3	10201341
10201462	Endocrinology	3	10201362
10201442	Mycology	3	10201341
10201443	Mycology Lab.	0	10201442 or concurrently
10206490	Recombinant DNA Technology	3	10206393
10206488	Recombinant DNA Technology Lab.	0	10206490 or concurrently
10206323	Plant Cell Culture	3	10201321; 10201341
10206325	Plant Cell Culture Lab.	0	10206323 or concurrently
10201444	Virology	3	10206341
10201481	Special Topics	3	Department approval
10206413	Protein Purification	2	10201311
10201222	Microtechnique	3	10201102; 10201108
10201220	Microtechnique Lab.	0	10201222 or concurrent
10206324	Animal Cell Culture	2	10201321; 10201341
10206326	Animal Cell Culture Lab.	0	10206324
10201256	Plant Taxonomy	3	10201254
10201258	Plant Taxonomy Lab.	0	10201256
Total		18	

Course Descriptions.

10201101 GENERAL BIOLOGY I

This course is a discussion of biological activity on the level of the cell, including cell structure, chemical constituents, architecture, material exchange with the environment, the role of the cell membrane, major energy generating biochemical pathways, cellular respiration, photosynthesis, control of cellular activities and basic concepts in genetics.

10201102- GENERAL BIOLOGY II

This course is a discussion of biological activity on the level of the organism, including structure and function of body parts, and responses of organisms to their biological and physical environments.

10201107 PRACTICAL GENERAL BIOLOGY I

This course provides students with scientific background and practical procedures for the various experiments on biological principles discussed in General Biology I 24101.

10201108- PRACTICAL GENERAL BIOLOGY II

This course provides students with scientific background and practical procedures for the various experiments on biological principles discussed in General Biology II 24102.

10201222 MICRO TECHNIQUE

Students, in this course, will learn about the basic principles and techniques for the preparation of microscopic slides of animals, plants, and bacteria. In addition, they will also learn about tissue culture, using microtome, and microscopic photography and study microscopy (light and electron).

10201232 GENETICS

Students study the principles of classical genetics and the molecular basis of inheritance in terms of structure, function and changes in genetic material in viruses, bacteria and higher organisms; transmission and expression of genetic material; recombinant DNA and bioengineering.

10201255 PLANT DIVERSITY

Plant diversity is the variety of plant life. The five kingdom classification system will be introduced in this course understanding the basics of this classification. This course will mainly introduce all photosynthetic organisms.

The non-flowering seeded vascular plants (Gymnosperms) and the flowering seeded vascular plants (Angiosperms) will be provided in more details in this course as they are the dominant plants on earth.

10201264 ZOOLOGY

This course is a survey of the animal kingdom with an emphasis on its history and organization. Particular attention is paid to special structures and mechanisms evolved by selected representatives of major phyla for solving problems of life in various environments.

10201311 BIOCHEMISTRY

This course covers fundamentals of biochemistry including structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and function and introduction to bioenergetics.

10201321 CELL BIOLOGY

Topics covered include structure and function of cells and organelles, including membrane structure and transport; bioenergetics of mitochondria and chloroplasts; cell motility; DNA replication; protein synthesis and transport; mitosis and meiosis. In addition, the course touches on various modern techniques used in cell biology.

10206323 PLANT CELL CULTURE

This course covers the principles of plant cell, tissue and organ culturing techniques used to regenerate whole plants from different types of explants. Laboratory experience is gained in preparation of culture media supplemented with different plant growth regulators, and their influence on in vitro micropropagation of different plant species.

10201341 MICROBIOLOGY

This course covers morphology, physiology, classification, and cultivation of bacteria. This course focuses on biological (especially microbiological) systems by which materials and energy can be interconverted (e.g., waste products into useful chemicals or fuels, or antibiotic production). Manipulation of microorganisms capable of producing high value industrial substances is also discussed.

10206364 FERMENTATION AND INDUSTRY

This course focuses on biological (especially microbiological) systems by which materials and energy can be interconvert (e.g., waste products into useful chemicals or fuels, or antibiotic production). Manipulation of microorganisms capable of producing high value industrial substances is also discussed.

10201347 IMMUNOLOGY

This course aims at understanding the mechanisms of the immune system with special focus on antigen antibody structure and function, cells and

tissues of immune system, lymphocyte activation and specificity; effectors mechanisms; complements, major histocompatibility complexes, B- and T-cell receptors. It also provides a background to the functions of innate and adaptive immunity (cellular and humoral), genetics of immune system, vaccines, autoimmunity, hypersensitivity, with an emphasis on some basic techniques used in immunology.

10201352 PLANT ANATOMY AND PHYSIOLOGY

Plant anatomy and physiology is the study of plants' different function related to their anatomical features. This course teaches what plants do, and what chemical and physical factors cause plants to respond as they do in their environment. During this course, we will explore several important processes which allow plants to survive in their environment. Structure-function relationships will be emphasized, in addition to ecological implications of the physiological process under investigation.

10201362 ANIMAL PHYSIOLOGY

This course is a study of functions of the major tissue types and organ systems of multicellular animals, with emphasis on human physiology in health and disease. The use of invertebrate and vertebrate animal models in research, and comparisons of functional adaptations in non-human systems will also be covered.

10201364 PARASITOLOGY

This course is designed to explore the various aspects of parasitology. Emphasis will be placed on the life cycles of major parasitic organisms attacking humans and animals.

10201372 ECOLOGY

This course is an introduction to fundamentals of ecology and principles related to populations, communities and ecosystems. Particular emphasis is placed on the many dimensions of interdependence within ecosystems.

10206392 MOLECULAR BIOLOGY

This course is a study of gene structure, function and control at the molecular level. Molecular techniques used to analyze nucleic acid and protein activity and diversity are also discussed.

10206393 TECHNIQUES IN MOLECULAR BIOLOGY

This laboratory course aims at applying molecular techniques to investigate a variety of biological questions. Techniques include cloning, DNA/Protein fingerprinting, RFLP, Blotting, PCR, and DNA sequencing.

10201405 DEVELOPMENTAL BIOLOGY

This course is a detailed survey of the processes of animal development, including fertilization, cleavage and organogenesis. Emphasis is placed on current techniques for studying development, such as recombinant DNA technology.

10206410 BIOINFORMATICS

Bioinformatics is the science of storing, extracting, organizing, analyzing, and interpreting biological sequence data. The course is designed to introduce the most basic concepts and up-to-date developments, methods, and tools used in bioinformatics. Topics include bioinformatics databases, resources at NCBI and EBI, sequence and structure alignment, file formats, analysis of single DNA and protein sequences, BLAST, primer design, function predictions, phylogenetics, and protein structure prediction. Internet laboratory for teaching the databases and data mining tools will be considered.

10206412 NANO-BIOLOGY

Nano-biology can be considered the intersection of biology and nanotechnology. Much of nano-biology involves using the tools and techniques of molecular biology to manipulate and analyze nucleic acids and proteins. This course introduces students to biological molecules and self-assembled biological nanostructures and nano-machines. Biological systems provide a rich range of examples of specialized chemical systems that are structured on the nano-scale.

10206413 PROTEIN PURIFICATION

This is a laboratory course in protein isolation and purification techniques.

10206421 HISTOLOGY

This course is a study of the basic types of tissues and organs at the microscopic level. Structure and associated functions are emphasized. The laboratory concentrates on the light microscopic study of tissues.

10201442 MYCOLOGY

The aim of this course is to allow students to gain both knowledge about mycology as well as practical skills for handling the major fungal nutritional groups including mycorrhizal, saprotrophic and pathogenic fungi. The course addresses the following topics: growth physiology and nutrition, saprotrophic lifestyles, mycorrhizal fungi and biotrophic lifestyles, fungal diversity and phylogenetic species recognition, genetics and population genetics, fungal communities and interactions, and applied mycology including fungal biotechnology.

10201444 VIROLOGY

This course covers molecular/cell biology of viral structure, function, and evolution, with emphasis on pathological mechanisms of various human disorders.

10201481 SPECIAL TOPICS

In this course, Department raise advanced topics in the field of biology/biotechnology.

10206490 RECOMBINANT DNA TECHNOLOGY

This course presents the fundamental aspects of techniques for DNA construction, cloning, and expression in host cells, with special emphasis on DNA cloning and expression vectors, restriction enzymes and ligases, gene cassette elements, gene isolation from genomic DNA, creation of genomic and cDNA libraries.

10201492 SEMINAR

In this seminar, students conduct studies and hold discussions on modern biological problems.

10206497 APPLIED BIOTECHNOLOGY

An overview of the possibilities in which biotechnology may play an important role in producing vital compounds with medical applications, such as enzymes, hormones. Human gene therapy will be emphasized.

10206496 GRADUATION PROJECT

This is a Department directed research in one field of biology.

10206497 BIOTECHNOLOGY IN BIOLOGICAL CONTROL

This course covers recombinant DNA technology for engineering various organisms to be used for controlling plant and animal pest populations.

10201448 PRACTICAL TRAINING

The biology curriculum covers a wide range of courses on major areas in biological sciences. These courses are designed to help students who are interested in a career in education and research and have intentions to pursue graduate study. Training will be mainly in schools.

The Teaching Staff

Name	Position	University of Graduation
Dr.Ghaleb Idwan	Full professor	Aristotle University-Greece
Dr. Kamel Idwan	Full professor	Middle east- Turkey
Dr. Raed Koni	Full professor	Bari-Italy
Dr.Sabri Nasser	Assistant Professor	Ghent- Belgium
Dr.Nael Abu-Alhassan	Assistant Professor	Glasgow-Scotland
Dr. Awni Abu-Hijleh	Assistant Professor	Middle east -Turkey
Dr.Hani Al-Ahmad	Assistant Professor	Wiseman science Institute-Occupied territories
Dr. Sami Yaesh	Assistant Professor	Durham –Britain
Dr . Salwa Khalaf	Assistant Professor	Glasgow- Scotland
Dr . Mo'tasem Masri	Assistant Professor	Aristotle University- Greece
Dr . Ghadeer Omar	Assistant Professor	University Of Jordan –Jordan
Dr. Ashraf Sawafta	Assistant Professor	Marie Curie- Paris
Sami Bodair	Lecturer	Yarmouk -Jordan
Nasser Jarrar	Lecturer	Yarmouk –Jordan
Fatima Hanbali	Teaching assistant	University of Jordan
Lubna Abdallah	Teacher assistant	Yarmouk -Jordan
Shorouq Ismael	Teacher Assistant	Bonn - Germany

{ Department of Mathematics }

The vision

To produce the most successful methods in teaching and creating knowledge in pure applied mathematics , as the department works really hard to maintain a refined level of theoretical education and research.

The mission

The department of mathematics aims at being a pioneer in the fields of education, academia, and research in order to develop the local community by way of providing it with high qualified graduates.

The objectives

1. To refine the students' scientific personalities so they are able to fully serve and improve their community.
2. To prepare distinguished graduates who are able to compete in professional life after graduation.
3. To support the graduate programs to obtain the masters' degree which is currently available, and the P.H.D this is to be available in the future.

The graduates of the Mathematics department are expected to be:

1. Capable of using logical and critical thinking skills.
2. In possession of problem solving skills within different levels of complication in Math which are related to life.
3. Qualified enough to be able to continue with their higher studies anywhere in the world.
4. Capable of using search engines in to get up- to- date mathematical data.
5. In possession of wide knowledge in algebra.
6. In possession of wide knowledge of mathematical analysis.
7. In possession of wide knowledge in the construction of mathematical models.
8. Knowledgeable in statistics.
9. Knowledgeable in teaching math in school curriculum.
10. In possession of wide knowledge in the area of numerical analysis and its computer applications.
11. Capable of using the different mathematical and statistical computer applications.
12. Capable of working efficiently in industrial and research institution.
13. Capable of working in financial fields such as accounting, taxes, and insurance.

Requirements to obtain a B.Sc. degree in mathematics

Students wishing to for a B.Sc. degree in mathematics should complete successfully 121 credit hours.

1. University compulsory requirements (18 credit hours)
2. Department compulsory requirements (84 credit hours)
3. Departmental elective requirements (21 credit hours)

A. Department compulsory courses (54 credit hours)

Course #	Course Title	Credits	Prerequisites
10211101	Calculus I	3	
10211102	Calculus II	3	10211101, 10211104
10221101	General Physics I	3	
10221107	General Physics I Lab	1	-
10221102	General Physics II	3	10221101
10231101	General Chemistry I	3	
10231107	General Chemistry I Lab	1	10231101, or concurrent 10231101
10211201	Calculus III	3	10211102
10211203	Principles of Differential Equations	3	10211201
10211211	Principles of Mathematics	3	10211101
10211212	Modern Analysis I	3	10211211
10211220	Programming for Mathematics	3	10211102
10216201	Methods of Statistics I	3	-
10211241	Linear Algebra I	3	10211201
10211242	Modern Algebra I	3	10211211
10211302	Partial Differential Equations I	3	10211203
10211311	Modern Analysis II	3	10211212
10211312	Complex Analysis I	3	10211212
10211321	Numerical Analysis I	3	10211241; 10211220
10211322	Linear Programming	3	10211241
10216302	Probability Theory I	3	10211201
10216304	Mathematical Statistics I	3	10216302
10211342	Modern Algebra II	3	10211242
10211343	Number Theory	3	10211211
10211361	Principles of General Topology	3	10211212
10211362	Modern Methods in Geometry	3	10211211
10211491	Seminar	1	Dept. approval
10211492	Practical Training	3	Or concurrent 10511492
10511292	Methods of Teaching Mathematics	3	-
10511492	Practical Education for Math Students	3	
	Total	84	

* Offered by the College of Educational Sciences.

This course plan applies to the students who are accepted for the mathematics program for the academic year 2013-2014 and after. Departmental elective courses (21 credit hours)

Students must take 27 credit hours from this section.

1. One 3- credit hour course offered by the College of Educational Sciences
2. Twenty- four credit hours selected from courses offered by the Department of Mathematics.

Course #	Course title	Credits	Prerequisites
10216202	Methods of Statistics II	3	10211230
10211301	Special Functions	3	10211203
10211303	Vector Analysis	3	10211201
10211314	Advanced Calculus	3	10211201
10211320	Software Packages for Mathematics	3	10211220; 10211241
10211323	Operations Research I	3	10211241
10211311	Sampling Methodology	3	10216202
10211351	Experimental Design and Variance Analysis		10211241, 10216202
10216303	Probability Theory II	3	10216302, 10211212
10216305	Mathematical Statistics II	3	10216304
10211341	Linear Algebra II	3	10211241
10211351	History of Mathematics	3	-
10211371	Methods of Applied Mathematics I	3	10211203
10211392	Methods of Applied Mathematics II	3	10211371
10211374	Applied Analysis	3	10211212
10211375	Integral Equations	3	10211371
10211403	Ordinary Differential Equations	3	10211203
10211414	Functional Analysis	3	10211361
10211421	Numerical Analysis II	3	10211321
10216371	Time Series Analysis	3	10216302
10216343	Applied Regression Analysis	3	10216202, 10211241
10211462	Differential Geometry	3	10211241
10211474	Combinatorics & Graph Theory	3	-
10211481	Special Topics I	3	-
10211482	Special Topics II	3	-
**10512138	Classroom Environmental Management	3	-

** Offered by the College of Educational Sciences (Choose one course: 72138 or 72254.

Course Descriptions

10211101 CALCULUS I

Topics covered in this course include analytic geometry, continuity, limits, definite and indefinite integration, applications of integration and differentiation.

10211102 CALCULUS 2

Definite integral and its properties, limited integration, integration of compensation, the space between two curves, volumes of revolution, ways of integration (integration by parts, integration of partial fractures, integration of trigonometric functions and integration with compensation trigonometric functions), integrals ailing, the length of the curve and the area of surfaces of revolution, final sequences and series, tests of convergent series, power series, Taylor series.

10211201 CALCULUS III

This course is a study of parametric equations and polar coordinates; vectors in R^2 and R^3 & surfaces; vector-valued functions; partial differentiation with applications; multiple integrals.

10211203 PRINCIPLES OF DIFFERENTIAL EQUATIONS

Topics covered in this course include classifications and solutions of first-order ordinary differential equations with applications; higher-order and solutions; power series solutions; Laplace transforms; solutions of systems of linear differential equations.

10211211 PRINCIPLES OF MATHEMATICS

In this course, students are introduced to logic and proofs; set theory, relations and functions; cardinality and examples on mathematical structures.

10211212 MODERN ANALYSIS I

Students in this course learn about properties of real numbers; open and closed sets; sequences; limits and continuity; differentiation; Riemann integral.

10211220 PROGRAMMING FOR MATHEMATICS

This course covers several topics: fundamentals of programming; algorithms, types of data and control statements, dimensions, functions and subroutines; some mathematical software with applications.

10216201 METHODS OF STATISTICS I

Topics covered in this course include: statistical data classifications; measure of central tendency and variability; probability concepts and rules; discrete and continuous random variables; probability distributions; the binomial and normal distributions; sampling distributions; point and interval estimations for one population mean; tests of hypotheses for one population mean.

10216202 METHODS OF STATISTICS II

This course deals with sampling distributions; confidence intervals; testing hypotheses for one and two population parameters; regression and correlation; testing hypotheses for regression line parameters; analysis of variance; chi-square test and non-parametric tests.

10211241 LINEAR ALGEBRA I

Students in this course receive instruction on matrices, vectors and elementary row operations; operations on matrices; determinants and inverses of matrices; systems of linear equations and method of solutions; vector spaces, linear independence and basis; linear transformations, kernel and range; Eigen values and eigenvectors.

10211242 MODERN ALGEBRA I

This course is devoted to binary operations; groups, subgroups, finite groups, cyclic groups, symmetric groups, factor groups, normal subgroups; group homomorphism; Sylow theorems.

10211262 PRINCIPLES OF GEOMETRY

This course introduces geometry: Hilbert's postulates, congruence, equivalence, similarities, circles, geometric transformations; space geometry: relations between lines, between lines and planes, between planes, theory of orthogonal projections; solid geometry: prisms, pyramids, cylinders, cones, sphere and related theorems.

10211301 SPECIAL FUNCTIONS

Topics covered in this course include the Frobenius method for solving differential equations; special functions like Gamma and Beta functions; Legendre polynomials; Bessel functions; Hermite polynomials; Chebyshev, Laguerre and hyper geometric functions.

10211302 PARTIAL DIFFERENTIAL EQUATIONS I

In this course, students study the formation of a partial differential equation; methods of solutions of first order linear and nonlinear partial differential equations; methods of solutions of second order linear and nonlinear partial differential equations; Fourier series and transforms; wave equation, Laplace's equation, potential equation, equation of an infinite wire, and heat equation.

10211303 VECTOR ANALYSIS

Topics taught in this course include vector algebra, vector products, vectors and scalar fields; the gradient, divergence and curl theorems; line, surface and volume integrals, related theorems; curvilinear coordinates.

10211311 MODERN ANALYSIS II

In this course, students are introduced to metric spaces; Riemann-Stetitges integral; functions of bounded variations; sequences and series of functions.

10211312 COMPLEX ANALYSIS I

Topics covered in this course include properties of complex numbers; complex functions, derivatives and Cauchy-Riemann equations; elementary functions and elementary transformations; complex integrals, residue theorem and improper integrals; power series.

10211314 ADVANCED CALCULUS

This course is a study of coordinate systems; functions of several variables, parametric representations of curves and surfaces, transformations of regions; derivatives and directional derivatives; implicit functions, Jacobians and related theorems; extreme; multiple integrals and related theorems.

10211320 SOFTWARE PACKAGES FOR MATHEMATICS

This course is mainly concerned with mathematical modeling; using some software packages in mathematics and statistics; NETLIB, NAG, Derive, Mathematical, MATLAB, BLAS, Maple, MathCAD, SPSS, Minitab.

10211321 NUMERICAL ANALYSIS I

Topics covered in this course include numbers, Binary, Octal and Hexadecimal number systems; floating point arithmetic, errors, sources and types; solving nonlinear equations, direct and indirect methods in solving systems of linear equations, solving systems of nonlinear equations; approximation and interpolations, numerical integration.

10211322 LINEAR PROGRAMMING

This course covers problem formulation; graphic solution; simplex method; duality theorem; linear sensitivity analysis and algebraic representation; transportation and assignment problems; network (PERT and CPM); game theory.

10211323 OPERATIONS RESEARCH I

This course is an introduction to operation research; inventory models, queuing models; game theory; Markov chains; case studies.

10211331 SAMPLING METHODOLOGY

Students in this course learn about simple random samples, estimation of means totals and proportions, estimation of the regression parameters,

stratified sampling, cluster sampling, systematic sampling and other sampling methods.

10216351 EXPERIMENTAL DESIGN AND VARIANCE ANALYSIS

Topics covered in this course include random column design, Latin squares design, two-factor design, multi-factors comparative experiment, testing model accuracy in analysis of variance, insufficient sector model factor analysis, and multiple comparisons.

10216302 PROBABILITY THEORY I

Students in this course are introduced to basic concepts of probability; discrete and continuous random variables; probability distributions; the binomial, geometric, negative binomial, uniform, gamma and normal probability distributions; examination of moment generating functions; probability distributions of functions of random variables.

10216303 PROBABILITY THEORY II

This course is a review of some properties of random variables and probability distributions, multinomial distributions, distribution of order statistics, and moments and moment generating functions for some probability distributions. Limiting distributions, types of convergence and characteristic functions are also examined.

10216304 MATHEMATICAL STATISTICS I

This course provides an introduction to decision theory, risk and loss functions, unbiased estimation, efficient and maximum likelihood estimation, confidence intervals, testing statistical hypotheses, sufficient statistics, the Rao-Blackwell theorem and Rao-Cramir inequality.

10216305 MATHEMATICAL STATISTICS II

This course covers properties of point estimates, the exponential family of distributions, sufficiency and completeness, Bayesian estimation, most powerful test, sequential test, and estimation and testing hypotheses for linear models.

10211341 LINEAR ALGEBRA II

Topics covered in this course include vector spaces; linear independence; direct product and direct sum of vector spaces; linear transformations, algebra of linear transformations; dual spaces; matrices; linear systems; Eigen values and eigenvectors; Hermite matrices; positive definite matrices.

10211342 MODERN ALGEBRA II

This course is devoted to the study of rings, ideals, division rings, factor rings; ring homo-morphisms; maximal ideals, principal ideal rings, principal ideal domains; polynomial rings, extension of fields.

10211343 NUMBER THEORY

This course is a study of divisibility and prime numbers; Chinese remainder theorem; congruence; Euler's theorem, Fermat's theorem, Wilson's theorem; linear congruence: congruent and non-congruent solutions; arithmetic functions; special numbers: perfect, deficient abundant and Mersenne numbers.

10211351 HISTORY OF MATHEMATICS

This course traces the mathematical development of this science; early numeral systems of Babylonians, Egyptians and Greek; the three problems of antiquities: duplicating a cube, quadrating of a circle and trisecting an angle; Alexandria 1st and 2nd schools, Hindu and Arab mathematics; European mathematics before and after the 17th century; analytic geometry and related concepts; development before calculus and transition to the 20th century.

10211361 PRINCIPLES OF GENERAL TOPOLOGY

This course covers topological spaces, basis and sub-basis; functions and homomorphism; separation and countability axioms; connectedness and compactness; Hausdorff space, metric spaces and product spaces.

10211362 MODERN METHODS IN GEOMETRY

Topics covered in this course include Euclid's axioms; incidence geometry; Hilbert's postulates; absolute geometry; hyperbolic geometry; Riemann geometry; metric and non-metric geometric transformations.

10211371 METHODS OF APPLIED MATHEMATICS I

This course reviews special functions including gamma, beta, Watson and others, function errors, Stirling's formula, trigonometric Fourier series, Laplace transforms and their applications in integral and partial equations, and differential variables.

10211373 APPLIED MATHEMATICS

This course covers orthogonal functions; Fourier series and Fourier transform; discrete Fourier series and transform, Z-transform, minimization and least square method.

10211403 ORDINARY DIFFERENTIAL EQUATIONS

This course is concerned with solving ordinary differential equations using series; Laplace transform; existence theorem and applications; solving linear and nonlinear systems of ordinary differential equations; dynamical systems.

10211414 FUNCTIONAL ANALYSIS

This course covers linear topological spaces, function spaces; weak topology; extension and separation theorems; open mappings; uniform boundedness; Banach and Hilbert spaces.

10211421 NUMERICAL ANALYSIS II

This course is a study of numerical methods for ordinary differential equations and systems; numerical methods for finding Eigen values and eigenvectors; numerical methods for solving nonlinear systems; and introduction to numerical methods for solving partial differential equations.

10216371 TIME SERIES ANALYSIS

This course highlights time series description, trends, periods, moving averages, filterization, Fourier analysis, models of stable series, self correlation, predictions, Jenkins-Box methods and spectrum analysis.

10216343 APPLIED REGRESSION ANALYSIS

Students in this course learn about simple linear regression, multiple regressions, estimation, and goodness, if fit tests, residual analysis, using matrices a regression, and factor rotation and applications.

10211462 DIFFERENTIAL GEOMETRY

Topics covered in this course include curves in planes and in space; curvature and torsion; theory of curves: intrinsic equations, involute curves and evolute curves; surfaces, simple surfaces and topological properties; tangent planes; first and second forms of a surface; asymptotes; intrinsic geometry, theory of surfaces; tensors and families of related curves.

10211474 COMBINATORICS AND GRAPH THEORY

This course focuses on graphs: simple graphs, directed graphs, components, connected components; blocks, cut-vertices, and bridges; Euler graphs; trees, planar and non-planar graphs; graph matrices and coloring.

10211481 SPECIAL TOPICS I

In this course some selected topics in pure and applied mathematics will be raised. These will be determined by the department and the course lecturer.

10211482 SPECIAL TOPICS 2

Like Special Topics I, this course will also raise some selected topics in pure and applied mathematics. These topics will be determined by the department and the course lecturer.

10211491 SEMINAR

This course is a study of the features of scientific thinking and its relation to scientific research. It also includes conducting a research on a mathematical topic- chosen from a range of topics approved by the department – and presenting it within seminars for discussion and evaluation.

10211492 PRACTICAL TRAINING

In this course, students visit private and public schools to observe, prepare, and teach standard classes for primary and secondary level students, on the different mathematical topics. This course is taken in the graduation course, and requires students to observe and teach 100 classes.

10512138 CLASSROOM MANAGEMENT

This course introduces the scientific bases of managing the classroom, and the roles which the teacher plays in there, focusing on the functional and practical aspects.

It also deals with the psychological bases on which a classroom is run, through looking into the different psychological theories which help both the teacher and the student achieve their goals, by way of providing the emotional and social atmosphere that encourages learning and delivering scientific expertise and directing them. This course also aims at making this field a practical science where theories are turned into classroom functions.

10511292 METHODS OF TEACHING MATH

This course begins with the identification of the general objectives of teaching mathematics and the objectives of teaching mathematics at key stage level and in secondary branches of the academic (scientific and literary), and vocational (industrial and commercial).

This course examines the themes the main stage of higher education (5-10), where students acquire the methods of teaching algebraic concepts and principles of solving equations, relations and associations, and the types of associations. Additionally, they learn how to teach the principles of probability, statistical representations, Euclidean geometry, how to demonstrate engineering subsidiary and trigonometry. This course also includes a description of recent trends in the teaching of mathematics using the technology of computers and calculators.

The course concludes on how to organize modules in the school calendar and how to prepare exams and evaluations.

10511492 PRACTICAL TRAINING FOR MATHEMATICS STUDENTS

In this course, students will have to:

- Research different steps to design lessons and how to integrate technology into lessons. The teacher will present footage of various teaching positions in mathematics to critique with students, and then each student prepares a lesson plan and applies them to fellow students and trainees under the supervision of the instructor and the students, thus clarifying the strengths and weaknesses in the lesson after the workload to be photographed on a tape in the laboratory.
- Research and report on teaching in basic and secondary schools, highlighting potential problems and finding solutions.
- Prepare and provide real classes in schools, for potential evaluation. The students will receive a teaching supervisor or teacher of mathematics in different schools who will support and evaluate the progress.

Department Staff:

Name	Position	University of Graduation
Mahmoud Al-Masri	Professor	University of North Carolina at Chapel Hill, USA. 1985
Naji Qatnani	Professor	Stuttgart University, Germany. 1996
Mohammad el-Amleh	Associate Professors	University of Alabama, USA. 1981
Fawaz Abu Diyak	Associate Professors	Michigan State University, East Lansing, USA. 1984
Abdullah Hakawati	Associate Professors	Lehigh University, USA. 1984
Ali Barakat	Associate Professors	North Carolina University, USA. 1989
Mohammad Najib Asaad	Assistant Professors	University of Munich, Germany. 1987
Subhi Riziyeh	Assistant Professors	Clarkson University, USA. 1989
Mohammad Abu Eideh	Assistant Professors	Nagpur University, India. 1989
Jaber Abu Jawkhah	Assistant Professors	Middle East Technical University, Turkey. 1990
Samir Matar	Assistant Professors	Bronell University, UK. 1991
Nihaya Awartani	Assistant Professors	AUW, USA. 1991
Anwar Saleh	Assistant Professors	Clarkson Bots ram University, NY. 1994
Muhammad Emran	Assistant Professors	Brigham Young University, UK. 1994
Muhammad Qabaha	Lecturers	Yarmouk University, Jordan. 1986
Amany Araman	Lecturers	Yarmouk University, Jordan. 2008
Adnan Al-Salqan	Lecturers	Ohio University, USA. 1985
Farhan Antari	Lecturers	An-Najah National University, Nablus, Palestine. 2004
Basem Mostafa	Lecturers	King Fahd University, KSA. 2013
Abdul-Munem Kharrosheh	Lecturers	An-Najah National University, Nablus, Palestine. 2007
Abdelrahman Eid	Lecturers	Yarmouk University, Jordan. 2013

{ Department of Physics }

Vision of the Physics Department

Using the most successful methods of teaching and creating knowledge of the basic principles of theoretical and applied physics. To this end, the Department makes every effort towards maintaining a high standard of theoretical and practical education in physics. Moreover, the Department has a special interest in preparing undergraduate students for scientific research in physics. Its intention is to serve the country and society.

Mission of the Physics Department

Seeking to be a pioneer in the field of academic education and research, thus contributing to the development of Palestinian society by supplying it with highly-qualified graduates and building effective institutions that serve it well. The Department is home to diverse and highly-affiliated experiments and modern and specialized laboratories which are used to produce scientific and technical studies and applied research.

Objectives of the Physics Department

- Refining the student's scientific and laboratory skills to enable him/her to serve and develop his/her community.
- Turning out outstanding graduates who can compete in the field of research and work after graduation.
- Developing new specialties to fill the need in the work areas and multiplicity of public services.
- Supporting graduate programs: Master's and Doctoral.

Specifications of Physics Department graduates

Traits of An-Najah National University graduates apply to the Physics Department of graduates. In addition, the graduates of the Physics Department also have the following characteristics:

1. Ability to apply physics concepts in practical life.
2. A great deal of experience in using physics laboratory equipment correctly, which gives him/her the knowledge and experience to properly use many electronic and electrical appliances in non-physics areas.
3. Ability to work in groups and cooperate with others in all working environments
4. Good knowledge of public safety laws as a result of the application of safety laws in the laboratory during his/her studies.
5. Strong motivation to excel in any field of science and life in the community, in order to to keep abreast of modern scientific and technological developments and rally himself/ herself and the community around it.

Physics Department ILOs

1. Excellent understanding of theoretical and experimental physics concepts.
2. Excellent understanding of the mathematics used in physics.
3. Deep understanding of both classical and modern physics.
4. Basic understanding of electronics and circuit analysis.
5. Understanding of scientific research, and the ability to do it.
6. Ability to use online resources to obtain relevant scientific information.
7. Ability to connect physics and electronics concepts to modern technology.
8. Ability to use physics and electronic concepts to develop renewable energy resources.
9. Ability to apply electronics concepts in different fields in practical environments.
10. Ability to utilize computers in solving physics and electronics problems.
11. Awareness of the environment, through understanding of pollution sources: radiation, noise, chemical and biological.
12. Ability to use new scientific hardware.
13. Ability to identify the risk of misusing new and old hardware.
14. Expertise in public safety and awareness of its importance in life.
15. Ability to work as a team member.
16. Self-dependence and confidence in expressing himself and communicating with others.
17. Self-motivation to be a leader in his/her community, both scientifically and socially, and to keep up with technological advancement to benefit himself/herself and society.

Curriculum Plan of the Physics Department

The Department of Physics offers two undergraduate majors: (a) the physics major and (b) the physics major with a minor in electronics. After the completion of the first year, the student must apply in writing to the department chair about his/her wish to major in one of them.

A. Requirements for the B.Sc. degree in Physics:

The student must successfully complete 127 credits. This includes: University compulsory courses (18 credits), compulsory courses from the Faculty of Science (31 credits), Department requirements (57 credits), elective courses (12 credits), compulsory and elective courses from the Faculty of Educational Sciences (6 credits), and practical training (3 credits).

University Compulsory Courses (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
10032100	Remedial English	0	
11000101	Islamic Culture	3	
11000102	Arabic Language	3	
11000103	University English I	3	
11000322	University English II	3	1000103
11000105	Palestinian Studies	3	
11000117	Leadership and Communication Skills	1	
11000108	Community Service	1	
11000127	Introduction to Computer Science	1	
	Total	18	

Compulsory courses from Faculty of Science (31 credits):

Course #	Course title	Credits	Classes	Lab	Prerequisite
10221101	General Physics I	3	3	-	----
10221107	General Physics Lab. I	1	-	2	10221101 or 10221105 or concurrently with 10221101
10221102	General Physics II	3	3	-	10221101
10221108	General Physics Lab. II	1	-	2	1) 10221102 or 10221106 or concurrently with 10221102 2) 10221107
10211101	Calculus I	3	3	-	----
10211102	Calculus II	3	3	-	10211101
10231101	General Chemistry I	3	3	-	----
10231102	General Chemistry II	3	3	-	10231101
10231107	General Chemistry Lab. I	1	-	2	10231101 or concurrently with 10231101
10201119	General Biology for Science Students	3	3	-	----
10201120	General Biology Lab. for Science Students	1	-	2	10201119 or concurrently with 10201119
10211201	Calculus III	3	3	-	10211102
10211203	Differential Equations	3	3	-	10211201
	Total	31			

Department compulsory courses (57 credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10221103	General Physics III	3	3	-	10221101 or 10221105
10221213	Physics Lab I	1	-	3	10221108; 10221221 or concurrently with 10221221
10221221	Waves and Optics	3	3	-	10221103
10221231	Electronics I	3	3	-	10221102 or 10221106 or 10221111
10221233	Electronics Lab I	1	-	3	10221231
10221241	Thermodynamics and Statistical Physics	3	3	-	10221103; 10211201
10221242	Modern Physics I	3	3	-	10221103
10221253	Mathematical Physics I	3	3	-	10211203 or parallel with 10211203
10221301	Computers in Physics	3	3	-	10211203
10221313	Physics Lab II	2	-	4	10221213
10221351	Electricity and Magnetism I	3	3	-	10221253, 10211203
10221352	Classical Mechanics I	3	3	-	10211203, 10221253 or concurrently with 10221253
10221353	Mathematical Physics II	3	3	-	10221353
10221354	Quantum Mechanics I	3	3	-	10221242; 10221253
10221371	Solid State Physics I	3	3	-	10221242
10221399	Scientific Research	3	3		10221354
10221413	Advanced Physics Lab.	2	-	5	10221313; 10221371
10221451	Electricity and Magnetism II	3	3	-	10221351
10221452	Classical Mechanics II	3	3	-	10221252; 10221353
10221454	Quantum Mechanics II	3	3	-	10221354
10221462	Nuclear and Particle Physics	3	3	-	10221354
	Total	57			

Department elective courses (12 credits)

The student is to take 12 credits from the courses listed in the following table, or he/she can choose a minimum of 6 credits from the same table, in addition to 6 credits, 300 level courses or above, either from the physics major-minor electronics courses, or from the Mathematics Department major courses.

Course #	Course title	Credits	Classes	Lab	Prerequisite
10221314	Practical Physics III	2	-	3	10221313
10221342	Modern Physics II	3	3	-	10221242; 10221354 or concurrently with 10221354
10221356	Theory of Relativity	3	3	-	10221242
10221361	Atomic and Molecular Physics	3	3	-	10221354
10221364	Principles of Laser	3	3	-	10221242; 10221221
10221373	Applied Geophysics	3	3		10221242
10221385	Renewable Energy	3	3	-	10221242
10221421	Acoustics	3	3	-	10221253
10221455	Statistical Mechanics	3	3	-	10221354
10221463	Particle Physics	3	3	-	10221454
10221464	Laser Spectroscopy	3	3	-	10221364
10221465	Spectroscopy	3	3	-	10221454
10221468	Astrophysics	3	3	-	10221354
10221471	Solid State Physics II	3	3		10221371
10221481	Special Topics I	3	3	-	10221354

Compulsory course from Faculty of Educational Sciences (3 credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10512382	Methods of Science Teaching	3	3	-	----

Elective courses from Faculty of Educational Sciences (3 credit hours)

The student must choose a 3- credit hour course from the following list:

Course #	Course title	Credits	Classes	Lab	Prerequisite
10512238	Classroom Management	3	3	-	----
10512491	Practical Education for Science Students	3	3	-	----

Practical Training - 10221490 (3 credit compulsory course)

The student signs up for this course in the last semester of his/her study. The student must finish at least a 48-hour internship in a public or private institution relevant to his/her career path. The training period must be in the work place of one of the selected institutions. The choice of the institution must be approved by the University's Practical Training Center in consultation with the Physics Department. Following is a list of some of these public and private institutions.

- Palestinian Ministry of Education schools
- Elevator companies
- Electricity companies
- Power and energy companies
- Palestinian Energy and Natural Resources Authority (PENRA)
- Palestine Standards Institution (PSI)
- Cellular communication companies (JAWWAL and WATANIYA)
- Telecommunication Company (PALTEL)
- Car companies (electronic maintenance division)

A. Requirements for the B.Sc. degree in Physics with a minor in Electronics:

The student must successfully complete 127 credits. These include University compulsory courses (18 credits), compulsory courses from the Faculty of Sciences (31credits), Department compulsory courses (42 credits), Department compulsory physics/minor electronics courses (24 credits), Department elective physics/ minor electronics courses (3 credits), compulsory and elective courses from the Faculty of Educational Sciences (6 credits), and practical training (3 credits).

University Compulsory Courses (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
10032100	Remedial English	0	
11000101	Islamic Culture	3	
11000102	Arabic Language	3	
11000103	University English I	3	
11000322	English IUniversity	3	1000103
11000105	Palestinian Studies	3	
11000117	Leadership and Communication Skills	1	
11000108	Community Service	1	
11000127	Introduction to Computer Science	1	
	Total	18	

Compulsory courses from the Faculty of Sciences (31credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10221101	General Physics I	3	3	-	----
10221107	General Physics Lab. I	1	-	2	10221101 or 10221105 or concurrently with 10221101
10221102	General Physics II	3	3	-	10221101
10221108	General Physics Lab. II	1	-	2	1) 10221102 or 10221106 or concurrently with 10221102 2) 10221107
10211101	Calculus I	3	3	-	----
10211102	Calculus II	3	3	-	10211101
10231101	General Chemistry I	3	3	-	----
10231102	General Chemistry II	3	3	-	10231101
10231107	General Chemistry Lab. I	1	-	2	10231101 or concurrently with 10231101
10201119	General Biology for Science Students	3	3	-	----
10201120	General Biology Lab. for Science Students	1	-	2	10201119 or concurrently with 10201119
10211201	Calculus III	3	3	-	10211102
10211203	Differential Equations	3	3	-	10211201
	Total	31			

Department compulsory courses (42 credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10221103	General Physics III	3	3	-	10221101 or 10221105
10221213	Physics Lab I	1	-	3	10221108; 10221221 or concurrently with 10221221
10221221	Waves and Optics	3	3	-	10221103
10221231	Electronics I	3	3	-	10221102 or 10221106 or 10221111
10221233	Electronics Lab I	1	-	3	10221231
10221241	Thermodynamics and Statistical Physics	3	3	-	10221103; 10211201
10221242	Modern Physics I	3	3	-	10221102 or 10221106
10221253	Mathematical Physics I	3	3	-	10211203
10221301	Computers in Physics	3	3	-	10211203
10221313	Physics Lab II	2	-	4	10221213
10221351	Electricity and Magnetism I	3	3	-	10221253, 10211203
10221352	Classical Mechanics I	3	3	-	10211203, 10221253 or concurrently with 10221253
10221354	Quantum Mechanics I	3	3	-	10221242; 10221253
10221371	Solid State Physics I	3	3	-	10221242
10221399	Scientific Research	3	3		10221354
10221413	Advanced Physics Lab.	2	-	5	10221313; 10221371
	Total	42			

Department compulsory physics/ minor electronics courses (24 credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10226331	Solid State Electronics	3	3	-	10221231
10226341	Digital Electronics I	3	3	-	10221102
10226333	Digital Electronics I Lab.	1	-	3	10226341
10226351	Analog Electronic Circuits	3	3	-	10226331
10226343	Analog Electronics Lab.	1	-	3	10221233; 10226351
10226361	Electrical Instrumentation	2	2	-	10226331; 102 26341
10226441	Digital Electronics II	3	3	-	10226341
10226443	Digital Electronics II Lab.	1	-	3	10226333; 10226441
10226471	Communications	3	-	-	10221351; 10226351
10226481	Magnetic Devices	3	3	-	10226351; 10226331
10226491	Project in Electronics	1	1	1	10226333; 10226343, 10226441 or concurrently with 10226343; 10226441
	Total	24			

Department elective physics/ minor electronics courses (3 credits)

Student is to take 3 credit hours from the following course list

Course #	Course title	Credits	Classes	Lab	Prerequisite
10226472	Microwaves	3	3	-	10226471
10226482	Control Systems	3	3	-	10226471
10226483	Special Topics in Electronics	3	3	-	10226341
10226484	VLSI-Design	3	3	-	10226341

Compulsory courses from the Faculty of Educational Sciences (3 credits)

Course #	Course title	Credits	Classes	Lab	Prerequisite
10512382	Methods of Science Teaching	3	3	-	----

Elective courses from the Faculty of Educational Sciences (3 credit hours)

The student must choose 3 credit hours from the table below

Course #	Course title	Credits	Classes	Lab	Prerequisite
10512238	Classroom Management	3	3	-	----
10512491	Practical Education for Science Students	3	3	-	----

Practical Training – 10221490 (3 credit hour compulsory course)

The student signs up for this course in the last semester of study. The student must finish at least 48 hours of practical training in one of the public or private institutions that is relevant to his/her future career path. The training period must be in the workplace in one of the selected institutions. The choice of the institution must be approved by the University's Practical Training Center in consultation with the Physics Department. Following is a list of private and public institutions

- Palestinian Ministry of Education schools
- Elevator companies
- Electricity companies
- Power and energy companies
- Palestinian Energy and Natural Resources Authority (PENRA)
- Palestine Standards Institution (PSI)
- Cellular communication companies (JAWWAL and WATANIYA)
- Telecommunication companies (PALTEL)
- Car companies (electronic maintenance division)

Course Descriptions

10221101 GENERAL PHYSICS I

This course covers the following topics: motion in one and more dimensions, the laws of motion with an application of Newton's laws, vector quantities, work and mechanical energy, linear momentum and collisions, and rotational dynamics.

10221102 GENERAL PHYSICS II

This course is a study of the following topics: electric charges; forces and fields; electric potential and electric potential energy; electrical capacitance electric elements like capacitors, resistors, and conductors; electric current and direct-current circuits; magnetic fields; magnetic force; induction; and RC and RL circuits.

10221103 - GENERAL PHYSICS III

This course deals with the following topics: fluids, simple harmonic motion, sinusoidal waves, sound waves, heat thermodynamics laws, kinetic theory of gases, electromagnetic waves, geometrical optics and physical optics .

10221104 - GENERAL PHYSICS FOR MEDICAL AND LIFE SCIENCES STUDENTS

This course, offered to non-physics majors, covers the following topics:

Part I: Introduction to physical concepts about mechanics, solids and fluids, heat and temperature, sound and hearing, electricity and magnetism, light and optics.

PART II: PHYSICS CONCEPTS OF SOME MEDICAL INSTRUMENTS:

lasers, x-ray, ultrasound, Magnetic resonance imaging (MRI), and heavy ions therapy.

10221105 - GENERAL PHYSICS I FOR EDUCATIONAL SCIENCES STUDENTS

Offered to non-physics students, this course covers the following topics: kinematics (position, velocity, acceleration), vectors and scalars, dynamics, Newton's laws, friction, circular motion, work, energy, power, and momentum, rotational motion, simple harmonic motion, gravitation and Kepler's laws.

10221106 - GENERAL PHYSICS II FOR EDUCATIONAL SCIENCES STUDENTS

This course is offered to non-physics students. It focuses on the following topics: charge and matter (electric current, electric potential), electric field, electric dipole, Millikan's experiment, electric flux of Gauss's law, electric potential, capacitors, capacitance, connection of capacitors, electric current and Ohm's law, magnetic field, Hall effects., galvanometer, cyclotron, velocity selector, mass spectrometer, electromagnetic induction and Faraday's law.

10221107 - GENERAL PHYSICS LAB I

In this lab., experiments related to mechanics, mostly covered in General Physics I (10221101), are performed. These include measurements, vectors, acceleration on an inclined plane, the speed of sound in air, viscosity, Newton's second law, conservation of energy and momentum, rotational dynamics, simple harmonic motion, and Boyle's law.

10221108 - GENERAL PHYSICS LAB. II

In this lab, experiments related to electricity and magnetism, mostly covered in General Physics II (10221102), are performed. These include experiments on electric field and equipotential surfaces, current, resistance, and Ohm's law, the CRO as voltmeter and frequency meter, Wheatstone bridge (DC and AC), capacitance (series, parallel and RC circuit), earth's magnetic field, resistance and temperature, Joule's constant, and refractive index of glass.

10221109 GENERAL PHYSICS FOR AGRICULTURE STUDENTS

This course is offered to non-physics students. Students learn about the following topics: vectors, motion in one and two dimensions; Newton's laws of motion; rotational motion; viscosity, heat and thermodynamics; elasticity and electricity.

10221110 GENERAL PHYSICS LAB FOR AGRICULTURE STUDENTS

This lab is offered to non-physics students. In this lab, experiments related to topics, mostly covered in General Physics for Agriculture Students (0221109), are performed. These include experiments on Vectors; Newton's laws; measurements; humidity; viscosity; density measurements; specific gravity; soil conductivity; electrochemical equivalent of Copper and specific heat.

10221111 GENERAL PHYSICS FOR INFORMATION TECHNOLOGY (IT) STUDENTS

This course is offered to non-physics students; it covers the following topics: classical mechanics; motion and Newton's Laws; circular motion and applications; energy transfer; linear and angular momentum; fluid mechanics, vibrations and wave motion; thermodynamics electricity and magnetism; Gauss's law, electric circuits, and sources of magnetic fields; light and lasers and microscopes.

10221112 GENERAL PHYSICS LAB FOR INFORMATION TECHNOLOGY (IT) STUDENTS

Offered to non-physics students, this lab covers experiments and topics mostly covered in General Physics for Computer Students (10221111). This includes experiments on:

CRO; Ohm's law potentiometer; Wheatstone bridge (AC and DC); capacitance and RC circuit; Joule's constant; acceleration and speed of sound; viscosity; Newton's 2nd law and simple harmonic motion; Boyle's law; and Archimedes' principle.

10221114 GENERAL PHYSICS LAB FOR MEDICAL AND LIFE SCIENCES STUDENTS

This lab is offered to non-physics students. In this lab, experiments related to topics, mostly covered in Lab for Medical and Life Sciences (10221104), are performed. These includes experiments on Joule's constant; measurements; vectors; acceleration viscosity; Boyle's law ; Archimedes' principle; simple harmonic motion; the speed of sound; CRO; Ohm's law; capacitance and RC circuit refractive index.

10221115 GENERAL PHYSICS LAB FOR ENGINEERING STUDENTS

This lab is offered to non-physics students. In this lab, experiments related to topics mostly covered in General Physics I (10221101) and General Physics II (10221102) are conducted. These include experiments on CRO and Ohm's law potentiometer; Wheatstone bridge (AC and DC); capacitance and RC circuit; Joule's constant; acceleration and speed of sound; viscosity; Newton's 2nd law; simple harmonic motion; Boyle's law; and Archimedes' principle.

10221213 PHYSICS LAB. I

In this lab, selected experiments in optics electricity, magnetism, thermodynamics and modern physics are introduced. Experiments to be conducted include e/m current balance; oscillation of a bar magnet in a uniform magnetic field; Doppler's effect; radioactive (β) rays; thermodynamics (Cu-Fe); thermocouple; prism spectrometer; diffraction grating; Newton's rings; Quincke's interference tube (path difference); photocell; lenses; DC ammeter and voltmeter construction.

10221221 WAVES AND OPTICS

This course includes the following topics: the dual nature of light ray optics, which includes reflection, refraction, lenses, and mirrors; the wave nature of light, which includes interference and diffraction; resolution optical instruments, such as the microscope, telescope, Michelson and Fabry-Perot interferometer; diffraction grating; polarization and holography.

10221231 ELECTRONICS I

This course has two parts: Part I is a review and analysis of methods for basic circuits; a review of Ohm's law; Kirchhoff's law, resistive circuits;

circuit analysis, such as the voltage divider and current divider; node voltage analysis; mesh current analysis; source transformation; and Thévenin and Norton analysis. Part II is devoted to the basics of semiconducting electronic devices: the semiconductor fundamentals diode and its applications; special-purpose diodes like zener, varactor, LED, etc.; bipolar junction; transistor fundamentals and applications (switch and amplifier); transistor bias circuits: DC operating point; and voltage divider bias and other bias methods.

10221233 ELECTRONICS LAB. I

In this lab, students conduct experiments related to topics mostly covered in Electronics I (10222233). Experiments conducted include Kirchhoff's laws; Diode characteristics; Zener diode; diode circuits and applications; transistor characteristics; the transistor as an amplifier; and the transistor as a switch used in logic circuits.

10221241 THERMODYNAMICS AND STATISTICAL PHYSICS

This course covers several topics: different thermodynamic properties; processes in thermodynamics; equations of state, including the ideal gas equation; the first law of thermodynamics; work, internal energy, and heat flow equation, Carnot cycle; entropy and the second law of thermodynamics; thermodynamic potentials and statistical physics.

10221242 MODERN PHYSICS I

This course begins with an introduction to the theory of relativity; particle properties of waves; wave properties of particles; and atomic structure. It ends with an introduction to quantum mechanics and quantum theory of the hydrogen atom.

10221253 MATHEMATICAL PHYSICS I

This course is devoted to the study of the following topics: a review of series complex numbers; linear algebra (matrices and determinants); vectors analysis; special functions (Beta, Gamma, etc.); series solution of differential equations; coordinate transformations with common special functions like Legendre, Hermite, Laguerre, etc.

10221301 COMPUTER IN PHYSICS

This course looks at algorithms and programming language (Fortran 90 or C). The duration for the above two topics must be at least 7 weeks (45% of course teaching hours). The course will introduce students to a wide selection of computer-powered mathematical tools for solving physics and mathematics problems. It will also introduce software packages (Mathematica, Maple), starting with a number of basics and applications: fundamental commands; real and complex algebra; trigonometry; linear algebra; differential equations; special functions; graphics in 2D and 3D and displaying and fitting data. Some physics applications to intermediate physics course will also be done.

10221313 PHYSICS LAB. II

In this lab, selected experiments in optics and waves, atomic physics and modern physics are introduced. Experiments in this lab include Frank Hertz's experiment; electron diffraction; e/m (Thomson method); atomic spectra; photoelectric effect; microwave. Hysteresis; X-ray (atomic levels involved in copper; $k\alpha$ and $k\beta$ emissions); velocity of sound in liquids as function of temperature; speed of light and Michelson interferometer; and e/k .

10221314 PHYSICS LAB III

In this lab, selected experiments in different physics topics are introduced. These include the following experiments: Millikan's experiment; half-life and radioactive equilibrium with cobra 3; Rutherford experiment; X-ray fluorescence and Moseley's law; X-ray characteristic of molybdenum; Fabry-Perot interferometer; magnetic moment in the magnetic field; Coulomb's law with cobra 3; heat capacity of gas with cobra; vapor pressure of water at high temperature; Fresnel's equation and the theory of reflection.

10221342 MODERN PHYSICS II

This course is a study of many electron atoms and molecules. It also serves as an introduction to statistical mechanics, to solid state physics, nuclear structure, nuclear transformations and elementary particles.

10221351 ELECTRICITY AND MAGNETISM I

In this course, students are introduced to electrostatics and relevant vector operations and theorems; special techniques in electrostatics and solving boundary-value problems; electrostatics in matter and relevant quantities needed; magnetostatics and methods to calculate magnetic fields and magnetic fields in matter.

10221352 CLASSICAL MECHANICS I

This course deals with the following topics: coordinate systems; Newtonian mechanics in one dimension; damping oscillations; general motion of a particle in three dimensions; non-inertial reference frames; gravitation and central forces; Lagrange's and Hamilton's equations.

10221353 MATHEMATICAL PHYSICS II

Topics taught in this course include calculus of variation; Fourier series and Fourier transforms; special functions: Bessel functions of complex variables; and Laplace transforms and an introduction to group theory.

10221354 QUANTUM MECHANICS I

This course studies wave function and statistical interpretation; time-independent Schrödinger equation; stationary states; one-dimensional quantum systems; formalism- observables and Hermitian operators; quantum mechanics in three dimensions; hydrogen atom; angular momentum and spin.

10221356 THEORY OF RELATIVITY

This course introduces students to relativistic kinematics; relativistic dynamics (collisions and conservation laws); Lorentz – Einstein transformations; relativity in measuring length and time; and relativity and electricity. It ends with an introduction to the general theory of relativity.

10221361 ATOMIC AND MOLECULAR PHYSICS

This course focuses on hydrogen atoms, multi-electron atoms, the Zeeman effect, fundamental symmetries in atoms, the interaction of atoms with electromagnetic fields and radiations, laser spectroscopy and Bose-Einstein condensation.

10221364 PRINCIPLES OF LASER

This course examines the following topics: the nature of light and the meaning of laser; atom and molecules as a source of light; black body radiations; energy levels and electronic transitions; lasing processes (3-level and 4-level systems); Einstein's relations and population inversion; laser cavity and laser gain and thresholded gain types of lasers and applications of lasers.

10221371 SOLID STATE PHYSICS I

This course covers several topics, such as crystal structure; reciprocal lattice and binding; Brillouin Zone Phonons; Fermi Gas and density of states and energy bands; and semiconductors

10221373 APPLIED GEOPHYSICS

This course is a review of the earth sciences, plate tectonics, and geological hazards. It also provides an introduction to geophysics, seismic exploration and geoelectrical methods.

10221385 RENEWABLE ENERGY

Topics taught in this course include energy role in modern society; classical sources of energy; the environmental impact of fossil fuels; the importance of renewable energy sources; solar energy potentials; solar thermal; high temperature solar photovoltaics; passive and active techniques; wind energy potentials and techniques and geothermal energy.

10221399 SCIENTIFIC RESEARCH

This course introduces students to technical scientific writing, techniques of citations, and writing scientific articles. In this course, the student must choose a project, with the help and approval of the instructor, and write a scientific paper on it. The student is expected to give an oral presentation on his/her project.

10221413 ADVANCED PHYSICS LAB

In this lab, selected experiments in solid state physics, atomic and nuclear physics, electromagnetic and optics are introduced. These experiments include

the radioactivity hall effect; the Faraday effect; electron spin resonance; thermionic emission microwave attenuation; Zeeman effect resistivity versus temperature; four probe measurement for a semiconductor P-N junction; the Kerr effect; and magnetic susceptibility Compton scattering.

10221421 ACOUSTICS

This course examines transverse waves in a string; longitudinal and transverse vibrations of rods and bars; vibration of membranes and plates; plane sound waves; reflections and transmission of plane sound waves at plane boundaries; spherical waves and radiation from a piston; architectural acoustics; noise in terms of its measurement and control; underwater sound and ultrasonic sound in liquids and solids.

10221451 ELECTRICITY AND MAGNETISM II

Students in this course learn about electromagnetic induction and electromagnetic energy; Maxwell's equations in free space and in different media; the electromagnetic waves in vacuum, in matter and in closed regions; electromagnetic radiations and potential formalism.

10221452 CLASSICAL MECHANICS II

This course introduces the following topics: Lagrange's and Hamilton's equations; dynamics of systems of particles; mechanics of rigid bodies: planar motion; motion of rigid bodies in three dimensions and dynamics of oscillating systems (small oscillations).

10221454 QUANTUM MECHANICS II

This course is a study of identical particles with applications to atoms and solids; the theory of perturbation approximations with applications for the fine structure; the Zeeman Effect; other approximations as variational principle and WKB; time-dependent perturbation theory and applications and multiparticle quantum system.

10221455 STATISTICAL MECHANICS

Topics taught in this course include Maxwell- Boltzmann statistics; Bose-Einstein statistics; Fermi-Dirac statistics; statistical calculation of thermodynamic quantities and applications on statistical thermodynamics; thermodynamic laws; state of equilibrium; temperature and randomness and applications on statistical thermodynamics.

10221462 NUCLEAR AND PARTICLE PHYSICS

This course examines the following topics: scattering theory; nuclear forces; nuclear models; alpha, beta, and gamma decays and applications; elementary particles; symmetries; standard model and fundamental forces.

10221464 LASER SPECTROSCOPY

This course covers the following topics: spontaneous and stimulated emission; atomic spectrum; line broadening; nonlinear optical processes; two photon spectroscopy; saturation spectroscopy; Raman spectroscopy and applications in material science like medicine, environmental studies and industry.

10221465 SPECTROSCOPY

This course is devoted to the energy spectrum; energy levels; excitation of atoms; electron spin resonance (ESR); nuclear magnetic resonance (NMR); IR spectrum and Raman spectrum; electronic vibrations and rotational spectra of diatomic molecules.

10221468 ASTROPHYSICS

This course highlights contents of the universe; matter, energy, dark matter and dark energy; channels of astronomical information; astronomical scales and measurements; stellar formation and evolution; universe of galaxies and life in the universe.

10221471 SOLID STATE PHYSICS II

This course is a study of the following topics: semiconductor crystals; Fermi surfaces; superconductivity magnetic materials and nano-materials dielectrics.

10221481 SPECIAL TOPICS

This course covers physics topics of interest to the instructor. The course instructor is expected to share his/her experiences in theoretical and/or experimental physics. This means that the course has no fixed description, as interests vary from one instructor to another. It is usually offered at the instructor's demand after seeking approval from the department.

10221490 PRACTICAL TRAINING

The student registers for this course in the last semester of his/her study. The student must complete at least 48 hours of practical training in a public or private institution that is relevant to his/her future career. The training period has to be in the work place of one of the selected institutions. The choice of the institution must be approved by the university Practical Training Center in consultation with the Physics Department.

10226331 SOLID STATE ELECTRONICS

Topics covered in this course include semiconductor materials, crystal lattices, growth of semiconductor crystals, energy bands and charge carriers in semiconductors, excess carriers, different junction types, fabrication and characteristics of p-n junctions, and different types of diodes: photodiodes, LED, varactor diodes, tunnel diodes.

10226333 DIGITAL ELECTRONICS I LAB.

In this lab, hardware-oriented experiments that provide practical experience in the design, construction and checkout of components and IC for digital circuits, covered in Digital Electronics I (0226341), are introduced. These experiments include

logic gates (AND, OR, NAND, NOR, XOR, XNOR, NOT, Buffer); Boolean functions; half-adder and full-adder; half- subtractor and full- subtractor; decoder; multiplexer; design of a logic circuit to multiply; the BCD input by 5 and the output in BCD; encoder; one bit magnitude comparator; and project related to Digital Electronics I (0226341) which the student is expected to complete in the lab(in 2-3 weeks' time).

10226341 DIGITAL ELECTRONICS I

This course is a study of numbers systems, codes, binary logic, IC-circuit, rules of Boolean algebra, logic gates, design of combinational logic circuits and analysis procedure and combinational logic with MSJ and LSI, ROM, and PLA.

10226343 ANALOG ELECTRONICS LAB.

In this lab, students perform experiments providing practical experience in the construction, design, and fault finding for analog circuits. Most experiments were covered in Analog Electronic Circuits (0226351), are introduced. Experiments include regulated power supply (voltage regulator); cascaded transistor amplifier; junction field transistor (JFET); collector-coupled multivibrator; sawtooth generator; the silicon- controlled rectifier (SCR); interface circuit by using SCR; the use of 555-timer TTL NOT gate & 2-input NAND gate operational amplifier (op amp); buffering to high current and high voltage digital to analog conversion

10226351 ANALOGUE ELECTRONIC CIRCUITS

This course introduces several electronic devices: FET and JFET; frequency response of RC and RL circuits; small signal amplifiers, power amplifiers; frequency response of amplifiers; thyristors; operational amplifiers and their applications; active filters; oscillators and voltage regulators.

10226361 ELECTRICAL INSTRUMENTATION

This course covers the following topics: analog measurements of electrical quantities; instrument transformers and other instruments; measurements of R, L, and CAC potentiometer magnetic measurements; digital measurements of electrical quantities and cathode ray oscilloscope sensors.

10226441 DIGITAL ELECTRONICS II

In this course, students are taught about sequential logic circuits; registers; counters; memory unit; register transfer logic. ALU; accumulators and processor logic design.

10226443 DIGITAL ELECTRONICS II LAB

In this lab, students perform hardware-oriented experiments that provide practical experience in the design, construction, and checkout of components and IC for digital sequential logic circuits; these topics were covered in Digital Electronics II (0226441). These include the following experiments: Programmable Logic Array (P.L.A.); clock pulse; flip flops; master slave flip flops; 4bit synchronous counter up/down synchronous counter up/down counter (4510); BCD to 7-segment decoder dual 4-stage; shift register (using D-flip flop); serial 4-stage shift register (using IC 4015); 5-stage Johnson counter arithmetic logic unit (A.L.U.) and accumulator.

10226471 COMMUNICATIONS

This course introduces students to signals and signal classes, Fourier transform and linear system analysis, convolution, random signals, autocorrelation function, power spectral density, sampling, quantization, and signaling (encoding), Delta modulation and analog modulation schemes (AM, DSB-SC, SSB, FM, PM), pulse modulation schemes (PAM, PWM, PPM, PCM), digital modulation schemes (PSK, FSK, ASK), noise and noise classes, performance of analog and digital communication systems in presence of noise.

10226472 MICROWAVES

This course begins with an introduction to electromagnetic waves and then it moves to transmission lines and transmission line parameters, waveguides, scattering parameters, impedance and admittance matrix, ABCD Matrix, signal flow graph, Smith chart, and matching networks. The course caps with a study of microwave components (fitters, power dividers, couplers), T-junction, isolators, circulators and with an introduction to antenna.

10226481 MAGNETIC INSTRUMENTS

This course includes the following topics: definitions and units; experimental methods; diamagnetism and paramagnetic; ferromagnetism and anti-ferromagnetism; ferrimagnetisms; soft magnetic materials; hard magnetic materials; magnetic materials for recording and computer; motors and transformers; Maglev train; electromagnetic stoves; hard disks; electromagnetic bomb and superconductor properties.

10226482 CONTROL SYSTEMS

This course is a study of the mathematical models for control system components; transform and time domain methods for linear control systems; stability theory; Bode diagram; design specifications in time and frequency domains; compensation design in time and frequency domains; data systems and CAD control systems.

10226483 SPECIAL TOPICS IN ELECTRONICS

This course covers topics of interest to the instructor. The instructor is expected to share his /her experiences in theoretical and/or experimental electronics with students. This means that the course has no fixed description, as interest varies from one instructor to another. It is usually offered by instructor demand after getting approval from the department.

10226484 VLSI DESIGN

This course is devoted to the following topics: impacts and progress of IC-technology; implementation of electronic components; IC-fabrication; CVD – technique; ion-implantation technique; entire sequence of IC design; mask design; lithography; layout design and logic design; design rules and stick diagrams

10226491 PROJECT IN ELECTRONICS

In this course, the student is required to build an electronic device (analog or digital) selected with the course instructor's help. The student is also expected to deliver a written report and make a presentation on his/her project.

Faculty Members

Name	rank
Sami Jabir	Professor
Ghassan Saffarini	Professor
Isam Rashid	Professor
Mohammad Elsaid	Professor
Samir Ikhdair	Professor
Musa El-Hasan	Assistant Prof.
Sharif Musameh	Assoc. Prof.
Subhi Kamel	Assoc .Prof.
Muneer A'bboh	Assoc .Prof.
Mohammed Abu-Jafar	Assoc .Prof.
Khaled Ilawi	Assoc .Prof.
Iyad Saadeddin	Assoc .Prof.
Hussain 'Alayan	Assoc .Prof.
Zayd Qamhiyah	Assoc .Prof.
Hazem Abusara	Assoc .Prof.
Ribhic El-Haj Hamad	Lecturer
Sabri Ahmed EL-Tannah	Instructor
Diana Dahlia	Instructor
Mohamed Bahjat	Lab supervisor
Maher Rabah	Lab Technician
Same'eh Abdel Aziz	Lab Technician
Thurayya Tibi	Lab Technician
Nisreen Hamadneh	Computer Lab Technician

{ Department of Statistics }

Requirements to obtain a B.Sc. degree in Statistics

The Department of Statistics offers a single major in statistics. Students wishing to major in the field must complete successfully 123 credit hours:

1. University Compulsory Requirements (18 credit hours).
2. Department Compulsory Requirements (84 credit hours)
3. Departmental Elective Requirements (21 credit hours).

A. Departmental Compulsory Courses (84 credit hours)

Course #	Course Title	C. Hrs.	Prerequisites
10211101	Calculus I	3	
10211102	Calculus II	3	10211101
10221101	General Physics I	3	
10221107	General Physics I Lab	1	-
10221102	General Physics II	3	10221101
10231101	General Chemistry I	3	
10231107	General Chemistry I Lab	1	
10241101	General Biology I	3	
10211201	Calculus III	3	10211102
10211203	Principles of Differential Equations	3	10211201
10211211	Principles of Mathematics	3	10211102
10211212	Modern Analysis I	3	10211211
10211241	Linear Algebra I	3	10211201
10211321	Numerical Analysis I	3	10211241
10211322	Linear Programming	3	10211241
10216201	Methods of Statistics I	3	-
10216202	Methods of Statistics II	3	10216201 or concurrent with 10211230
10216301	Statistical Applications Using Computer	3	10216202
10216302	Probability Theory I	3	10211201
10216304	Mathematical Statistics I	3	10216302
10216311	Sampling Methodology I	3	10216202
10216321	Operations Research	3	10211241
10216331	Stochastic Processes	3	10216302
10216343	Applied Regression Analysis		10216202+10211241
10216351	Experimental Design and ANOVA	3	10211241+ 10216202
10216352	Nonparametric Methods	3	10216202
10216399	Graduation Project	1	
10511292	Methods of Teaching Mathematics	3	-
10216492	Practical Training for Students of Mathematics	3	

II. Elective courses - Students may choose 21 credit hours from the following list:

Course #	Course Title	C. Hrs	Prerequisite
10216303	Probability Theory II	3	10216302+10211201
10216305	Mathematical Statistics II	3	10216304
10216322	Decision Theory	3	10216304
10216353	Categorical Data Analysis	3	10216202
10216361	Demographic Statistics		
10216371	Time Series Analysis	3	10216302
10216441	Multivariate Analysis	3	10216202,10211241
1016442	Sequential Analysis	3	10216304
10216481	Special Topics in Statistics	3	
10801150	Principles of Economics	3	-
10801319	Econometrics	3	10801113
10871121	Principles of Finance	3	-
10512138	Classroom Management	3	-
10513302	Evaluation in School	3	-

Course Descriptions

10216201 METHODS OF STATISTICS I

This course focuses on statistical data classification, measures of central tendency and variability, probability, concepts and rules, discrete and random variables and probability distributions, the binomial and normal distributions sampling distributions; point and interval estimate for population mean testing hypothesis for population mean; estimation; simple linear regression and correlation.

10216202 METHODS OF STATISTICS II

This course covers sampling distributions, confidence interval and testing hypothesis for single and two population parameters, regression and correlation, confidence interval and testing hypotheses for regression line parameters. Students also learn analysis of variable, chi-square tests and non-parametric tests.

10216301 STATISTICAL APPLICATIONS ON COMPUTER

The course mainly focuses on data evaluation and statistical tests using software packages.

10216302 THEORY OF PROBABILITY I

In this course, students receive instruction on axioms of probability, discrete and continuous random variables, probability distributions; binomial, geometric, negative binomial, uniform, exponential, gamma and normal. The course ends with an examination of moment generating functions and transformation distributions.

10216303 THEORY OF PROBABILITY II

This course begins with a review of properties of random variables and probability distributions as well as multinomial distribution. Then it moves to the study of distribution of order statistics, moments and moment generating function for some distributions. It also examines limiting distributions, types of convergences, in probability, in mean, in distribution, and characteristic function.

10216304 MATHEMATICAL STATISTICS I

Topics introduced in this course include decision theory, risk and loss function, unbiased estimation, efficiency, maximum likelihood estimation,

confidence intervals, composite hypotheses, and sequential tests. The course also introduces best test, sufficient statistics, Rao-Blackwell Theorem, and Rao-Cramir inequality.

10216305 MATHEMATICAL STATISTICS II

Students in this course learn about properties of point estimate, exponential family, sufficiency and completeness, Bayesian estimation, most powerful test, sequential test, estimation and testing hypotheses for linear models.

10216311 METHODS OF SAMPLING

Topics taught are simple random sample, mean estimations, totality, regression proportion estimations, stratified sampling, cluster sampling, systematic sampling, and other ways/methods of sampling.

STAT28321 OPERATIONS RESEARCH

Topics raised in this course are formulations of linear programming problems, graphic method, simplex method, sensitivity analysis, net flow problems and game theory.

STAT28322 DECISION THEORY

This course examines basic concepts in statistical decision theory and relationship with game theory, games in normal structures, optimal strategies and values, prediction, induction and Bayesian method.

10216331 STOCHASTIC PROCESSES

This course covers several topics: random process, examples on sample process, random walk, gamblers' destructive series, death and birth series, wait series, Markov discrete chain, classification of series cases, constant distributions, pure jumping process, Poisson process, Gaus process, and Weiner process.

10216343 APPLIED REGRESSION ANALYSIS

Topics covered in this course include simple linear regression, independent multi-variate regression, interpretation of results, estimations and consistency check, error and remainder analysis, using matrices in regression, factor rotation and real applications.

10216351 EXPERIMENTAL DESIGN AND ANALYSIS OF VARIANCE

Students, in this course, are introduced to random column design, Latin squares, two-factor designs, multi-factor comparative experiments, testing model accuracy in analysis of variance, insufficiency sector model factor analysis, and multi-comparisons.

10216352 NON-PARAMETRIC METHODS

This course introduces applications on non-parametric methods, testing and interval and point estimate, consistency tables, order, Kolomogrov and Sameironov statistics.

10216353 CATEGORICAL DATA ANALYSIS

This course gives an introduction to qualitative variables, two-variable tables, regression line equation (logistics), loglinear equation.

10216361 DEMOGRAPHIC STATISTICS

This course covers population, numerated areas, population data, age structures, mortality rates, life tables and its structures, emigration and immigration, society structure and general census.

10216371 TIME SERIES ANALYSIS

Topics covered are description of time series, direction, constant rates, filterization, Fourier's analysis, and models of stable series, self-correlation, prediction, Jenkins-Box methods, and spectrum analysis.

10216399 GRADUATION PROJECT

A student is assigned one specific topic to write about under the supervision of a department staffer. He/she is expected to submit a well-documented paper by the end of the term.

10216441 MULTIVARIATE ANALYSIS

This course covers a number of topics: multivariate normal distribution, estimation of mean vector, co-variance matrix, and design of complete independent test of statistics, main components and correlation methods.

10216442 SEQUENTIAL ANALYSIS

This course introduces sequential tests for statistical hypotheses, function of sample size average, characteristic function for sequential tests, testing percentage of sequential probability and characteristic function.

10216481 SPECIAL TOPICS IN STATISTICS

This course raises selected advanced topics in fields of statistics. Department and staffers determine the nature of these topics.

ECO53151 PRINCIPLES OF ECONOMICS

This course aims at acquainting students with basic principles in macroeconomics and microeconomics. Topics covered in this course include rules, and concepts pertinent to analysis of microeconomic units' behavior, concept of value, market mechanism and distribution theory. The course ends with a brief look at concepts pertinent to the Gross Domestic Product (G.D.P), and Gross National Income (G.N.I.) and ways of measuring them.

10871121 PRINCIPLES OF FINANCE

This course aims at introducing students to the value of money, the relationship between return and risk, financing foundations appropriate for companies, ways of studying and measuring risks, their types, profit policies followed by companies, cost of capital, and structure of optimal capital.

ECO10801319 ECONOMETRICS I

This course begins with an introduction to principles used in economics to examine quantitatively the degree of consistency between models and economic theories with the reality. The course surveys regression model foundations, mini-square method, estimates and their properties, analysis of variance, hypotheses testing, confidence intervals, general linear model, and curves. Students also learn about prediction through the use of the regression model.

10512138 CLASSROOM MANAGEMENT

This course aims at introducing the principles of managing a classroom and the roles that a teacher plays in there, and specifically shedding the light on the applied aspects of teaching, as the way a classroom is handled indicates the success of the teacher in performing their tasks and responsibilities.

This course also aims looking into the psychological basis on which a classroom is managed, by way of investigating the different psychological theories to provide the both the students and the teacher with the social and emotional atmosphere that encourages learning and passing on experiences to assure an education where theories are transformed into reality.

10511292 METHODS OF TEACHING MATH

This course begins with introducing the general objectives of Mathematical training, then it moves on to introduce the objectives specific to the teaching math in both elementary and secondary levels. It also includes the methods of teaching the concepts and principals of Algebra, solving equations, relations, and conjugates in all their types.

This course also includes a description of the different approaches in teaching math using the computer and finally, the analysis of secondary level exams and how to make them.

10513302 EVALUATION IN SCHOOL

This course introduces the students to scholastic evaluation; its objectives, methods, criteria and development. It also sorts out the different types of tests; how to make them and how to analyze them, and finally how to evaluate students on their academic achievements.

Department Staff:

Name	Academic Rank	University of Graduation
Dr. Ali Barakat	Associate Professor	North Carolina, USA
Dr. Mohammad Najib	Assistant Professor	University of Munich, Germany
Dr. Nihaya Awartani	Assistant Professor	American University, USA
Dr. Abdel-Rahim Barham	Assistant Professor	University of Carbondale, USA
Mohammad Qabaha	Instructor	Yarmouk University, Jordan
Amani Irman	Instructor	Yarmouk University, Jordan
Abdulraheem Eid	Instructor	Yarmouk University, Jordan

{ Department of Chemistry }
{ Undergraduate Program in Pure Chemistry }

The Department of Chemistry, founded in 1977, has four programmes in chemistry. These include a B.Sc. in Pure Chemistry, a B.Sc. in Applied Chemistry, and an M.Sc. and a Ph.D. in Chemistry.

Department Vision

The Department has a comprehensive and ambitious vision: to provide a distinguished teaching environment that enables graduates to undertake leadership in their future careers in private and public sectors. Graduates are equipped with a rich and diverse study plan that enables them to pursue their post-graduate study here and abroad. Based on excellence in teaching and research, the Department programmes have expanded horizontally (by providing two different study plans in Pure Chemistry and in Applied Chemistry) and vertically (by providing study plans leading to M.Sc. and Ph.D. degrees in Chemistry).

Department Mission

Since its establishment in 1977, the Department's mission, in accordance with that of the Faculty of Science, is helping Arab societies in general, and the Palestinian society in particular to reach sustainable economic and social development by providing them with quality graduates in chemistry at both undergraduate and graduate levels. To achieve this mission, the Department provides distinguished teaching and conducts research in pure and applied chemistry and advanced materials, while directly involving students.

B.Sc. Programme in Pure Chemistry

Programme Vision:

To provide qualified graduates able to pursue a career and achieve without obstacles or additional requirements for scholarships.

Programme Mission:

Prepare a generation of graduates able to contribute to building a society able to compete. Preparing a cadre of specialists in the field of chemistry to improve the community in the areas of education and scientific research, and solving problems facing scientific and industrial development plans in Palestine.

1) Student Enrolment in the Programme:

Students are directly enrolled in the programme based on their General Secondary School Certificate (TAWJIHI) on a competitive basis (equal opportunity policy adopted by An-Najah National University).

2) Graduation Requirements

To complete the B.Sc. degree in pure chemistry, the student must successfully com-

plete a total of 125 credit hours, with a cumulative GPA average 2/4 or higher, as follows:

University compulsory courses	18 credits
Programme compulsory courses	88 credits
Programme elective courses	19 credits

The graduation requirements are shown in the provided detailed study plan.

Objectives and Intended Learning Outcomes

General Programme Graduate ILOs:

Upon completing the B.Sc. study plan in chemistry the learner will be able to:

- Use scientific method to explain different natural phenomena critically and creatively
- Expand own knowledge independently
- Interact and communicate with people from same and other disciplines in a cooperative and benevolent manner.
- Implement and preserve professional ethics in different sectors, academic or professional.
- Successfully pursue graduate study in different areas of chemistry at different university systems with no need for prerequisites
- Undertake teaching duties in chemistry at all school system levels, including laboratory classes.
- Undertake teaching duties in other relevant disciplines (math, physics and biology) at preparatory school levels
- Undertake chemical research activities under direct supervision of other senior scientists
- Undertake university teaching assistance duties at university freshman level under supervision from other senior people.
- Undertake instrumental analytical duties in hospitals, environment and chemical industry laboratories after suitable extra orientation and training to meet specific activities
- Use library and online resources in chemical literature

Specific ILOs for different Programme courses:

Courses Attributes	Analytical Chemistry 10231211	Practical Analytical Chemistry 10231215	Organic Chemistry I 10231231	Organic Chemistry II 10231232	Practical Organic Chemistry I 10231235	Physical Chemistry I 10231241	Instru-mental Analytical Chemistry 10231311
1- Gain general basics, principles and applications of chemistry.	X	X	X	X	X	X	X
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.		X			X		
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X	X			X		
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.		X			X		
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.							
7- the ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.							
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9- Ability to communicate with scientists and non scientists		X					X
10- Gain knowledge of ethics and respect for others.							
11- Gain of a reasonable level of public education in the various aspects of life.							

Courses	Attributes	Practical Instrumental Analysis 10231315	Inorganic Chemistry I 10231321	Inorganic Chemistry II 10231322	Practical Inorganic Chemistry 10231325	Organic Chemistry III 10231331	Practical Organic Chemistry II 10231335	Physical Chemistry II 10231341
	1- Gain general basics, principles and applications of chemistry.	X	X	X	X	X	X	X
	2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
	3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.	X			X		X	
	4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X			X		X	
	5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X			X		X	
	6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.	X			X		X	
	7- the ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.	X			X		X	
	8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
	9- Ability to communicate with scientists and non-scientists	X			X		X	
	10- Gain knowledge of ethics and respect for others.							
	11- Gain of a reasonable level of public education in the various aspects of life.							

Courses Attributes	Physical Chemistry 3 10231342	Computational Chemistry 10231343	Practical Physical Chemistry I 10231345	Practical Physical Chemistry II 10231346	Research Chemistry I 10231392	Identification & Analysis of Organic Compounds 10231432	Practical Training 10231475
1- Gain general basics, principles and applications of chemistry.	X		X	X	X	X	
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X		X	
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.		X	X	X		X	
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.		X	X	X	X	X	
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.			X	X		X	
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.			X	X		X	
7- the ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.		X	X	X	X	X	
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X		X	X	X	X	
9- Ability to communicate with scientists and non-scientists			X	X	X	X	X
10- Gain knowledge of ethics and respect for others.							X
11- Gain of a reasonable level of public education in the various aspects of life.							X

Courses Attributes	Biochemistry 10231332	Advanced Analytical Chemistry 10231411	Advanced Inorganic Chemistry 10231421	Advanced Organic Chemistry 10231431	Spectroscopy of Organic Compounds 10231434	Synthesis of Organic Compounds 10231435	Advanced Physical Chemistry 10231441
1- Gain general basics, principles and applications of chemistry.	X						
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.							
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.							
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.							
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.							
7- the ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.							
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9- Ability to communicate with scientists and non-scientists		X	X	X	X	X	X
10- Gain knowledge of ethics and respect for others.							
11- Gain of a reasonable level of public education in the various aspects of life.	X						

Courses	Industrial Chemistry 10236461	Polymer Chemistry 10231464	Special Topics in Analytical chemistry 10231481	Special Topics in Inorganic chemistry 10231482	Special Topics in Organic chemistry 10231483	Special Topics in Physical chemistry 10231484	Research II 10231492
Attributes							
1- Gain general basics, principles and applications of chemistry.							
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.							X
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.							X
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.							X
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.							X
7- the ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.							X
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9- Ability to communicate with scientists and non-scientists	X	X	X	X	X	X	X
10- Gain knowledge of ethics and respect for others.							
11- Gain of a reasonable level of public education in the various aspects of life.							

Pure Chemistry Plan			
Type of Courses		Credit Hours	
University Compulsory Courses		18	
Specialization Compulsory Courses		88	
Specialization Elective Courses		16	
Specialization Electives from Another Faculty		3	
Total Credit Hours		125	
University Compulsory Courses (18 Credits)			
Course Code	Course's Title	Credit Hours	Prerequisites
10032100	Remedial English	0	
11000103	English Language I	3	
11000322	English Language II	3	1) 1000103
11000101	Islamic Culture	3	
11000117	Leadership and Communication Skills	1	
11000105	Palestinian Studies	3	
11000108	Society Service	1	
11000102	Arabic Language	3	
11000127	Introduction to Computer Science	1	
Specialization Compulsory Courses (88 Credits)			
Course Code	Course's Title	Credit Hours	Prerequisites
10201101	General Biology (1)	3	
10201102	General Biology (2)	3	1) 10201101
10201107	General Biology (1) Lab	1 or concurrent with it	1) 10201101
10201108	General Biology (2) Lab	1 2) 10201102 or concurrent with it	1) 10201107
10211101	Calculus I	3	
10211102	Calculus II	3	1) 10211101
10211201	Calculus III	3	1) 10211102
10211203	Differential Equations	3	1) 10211201
10221101	General Physics I	3	
10221102	General Physics II	3	1) 10221101
10221107	General Physics (1) Lab	1 or concurrent with it 2) 10221105	1) 10221101
10221108	General Physics (2) Lab	1 or concurrent with it 2) 10221107 or 10221109	1) 10221102
10231101	General Chemistry (1)	3	

10231102	General Chemistry (2)	3	1) 10231101
10231107	General Chemistry (1) Lab	1 or concurrent with it	1) 10231101
10231108	General Chemistry (2) Lab	1 2) 10231102 or concurrent with it	1) 10231107
10231211	Analytical Chemistry	3 2) 10231108	1) 10231102
10231215	Practical Analytical Chemistry	1 or concurrent with it 2) 10231108	1) 10231211
10231231	Organic Chemistry I	3 2) 10231108	1) 10231102
10231232	Organic Chemistry II	3	1) 10231231
10231235	Practical Organic Chemistry I	2 or concurrent with it 2) 10231108	1) 10231231
10231241	Physical Chemistry I	3 or concurrent with it 2) 10231102	1) 10211201
10231311	Instrumental Analytical Chemistry	3	1) 10231211
10231315	Practical Instrumental Analysis	1 2) 10231311 or concurrent with it	1) 10231215
10231321	Inorganic Chemistry I	3 or concurrent with it	1) 10231241
10231322	Inorganic Chemistry II	3	1) 10231321
10231325	Practical Inorganic Chemistry	2 or concurrent with it 2) 10231321	1) 10231322
10231331	Organic Chemistry III	3	1) 10231232
10231335	Practical Organic Chemistry II	2 or concurrent with it 2) 10231235	1) 10231331
10231341	Physical Chemistry II	3	1) 10231241
10231342	Physical Chemistry III	3 or concurrent with it 2) 10231341	1) 10211203
10231345	Practical Physical Chemistry I	1 2) 10231215	1) 10231241
10231346	Practical Physical Chemistry II	1 2) 10231341	1) 10231345
10231392	Research Chemistry I	3	60 hours or more completed
10231432	Identification & Analysis of Organic Compounds	3 2) 10231331	1) 10231335
10231475	Practical Training	3	85 hours or more completed
10512182	Methods of Science Teaching	3	

Specialization Elective Courses (16 Hours)			
Course Code	Course's Title	Credit Hours	Prerequisites
10231332	Biochemistry	4 2) 10231235	1) 10231232
10231343	Computational Chemistry	3 or concurrent with it	1) 10231342
10231411	Advanced Analytical Chemistry	3	1) 10231311
10231421	Advanced Inorganic Chemistry	3	1) 10231322
10231431	Advanced Organic Chemistry	3 or concurrent with it	1) 10231331
10231434	Spectroscopy of Organic Compounds	3	1) 10231331
10231435	Synthesis of Organic Compounds	2 2) 10231335	1) 10231331
10231441	Advanced Physical Chemistry	3	1) 10231241
10231464	Polymer Chemistry	3 or concurrent with it 2) 10231232	1) 10231331
10231481	Special Topics in Analytical Chemistry	3	1) 10231311
10231482	Special Topics in Inorganic Chemistry	3	1) 10231322
10231483	Special Topics in Organic Chemistry	3	1) 10231331
10231484	Special Topics in Physical Chemistry	3	1) 10231341
10231492	Research II	3	1) 10231392
10236461	Industrial Chemistry	3 2) 10231241	1) 10231232
Elective Courses from Faculty of Educational Science (3 Hours)			
Course Code	Course's Title	Credit Hours	Prerequisites
10512138	Classroom Management	3	
10512491	Practical Education for Science Students	3	

Course Description

10231101 GENERAL CHEMISTRY I

A compulsory 3-lecture course that is mainly designed to give students a knowledge of the most important chemical principles such as atomic structure and periodic table, mass relationships in chemical reactions, reactions in aqueous solutions, gases, thermo chemistry, quantum theory and the electronic structure of atoms, periodic relationships among the atoms, basic concepts of chemical bonding, molecular geometry and hybridization of atomic orbitals.

10231102 GENERAL CHEMISTRY II

A compulsory 3-lecture course that is a continuation of General Chemistry (I). It is designed to introduce some basic chemical facts and theories about solutions, kinetics, dynamic equilibrium, thermodynamics, electrochemistry and nuclear chemistry.

10231107 GENERAL CHEMISTRY I LAB

A compulsory practical course, designed to introduce the students to various experimental practices used in general chemistry, such as accurate weighing, performing basic chemical methods such as filtration, titration and gravimetric analysis, make simple metathesis and redox reactions, calorimetry experiments and calculations.

10231108 GENERAL CHEMISTRY II LAB

A compulsory practical course that is a continuation for skills gained in Chemistry 10231107 course. The student is expected to use what he/she learned in new techniques such as the synthesis and analysis of aspirin, molar mass of a solid from freezing point depression phenomena, experimental determination of the reaction rate law. The course involves other topics such as: reaction kinetics, chemical equilibrium, aqueous solutions and pH concept, bleach analysis, thermodynamics and electrochemistry.

10231211 ANALYTICAL CHEMISTRY

A compulsory 3-lecture course that deals with the classical quantitative methods of chemical analysis. These include gravimetric and titrimetric methods of analysis. The course also includes topics in statistics and data analysis that are important in analytical chemistry.

10231215 PRACTICAL ANALYTICAL CHEMISTRY

A compulsory laboratory course that involves experiments related to classical chemical analysis. It provides basic information about safety rules, tools of analytical chemistry, statistics for data treatment, and practice to various gravimetric and volumetric methods of analysis.

10231231 ORGANIC CHEMISTRY I

A compulsory 3-hour lectures, course that starts with an introduction to hybridization, covalent and hydrogen bonds; and dipole of bonds and molecules. Then rigorously treats the chemical structures, chemical properties and physical properties of open chain hydrocarbons such as alkanes, alkenes and alkynes. Structure and properties of alkyl halides and alcohols including syntheses, properties, mechanisms and stereochemistry are also involved.

10231232 ORGANIC CHEMISTRY II

A compulsory 3-lecture course that involves the basics of organic spectroscopy such as nuclear magnetic spectroscopy (NMR), infra-red spectroscopy (IR), ultra-violet spectroscopy (UV) and mass spectroscopy (MS), and the use of these spectroscopic techniques in the identification of organic compounds. This course, also, deals with structures, shapes, preparations and reactions of ethers, phenols and conjugated unsaturated compounds. Structures, properties and reactions of aromatic compounds, including different substitution reactions, are also involved.

1031235 PRACTICAL ORGANIC CHEMISTRY I

A compulsory practical, divided into four hour lab work periods weekly. The course includes some experiments which give the student practice in basic laboratory techniques such as determination of physical properties (melting point and boiling point) and methods of separation (extraction, distillation and steam distillation) and purification (crystallization and chromatography). This course also involves chemical reactions such as elimination, addition and substitution.

10231241 PHYSICAL CHEMISTRY I

A compulsory 3-lecture course that covers the properties of gases, kinetic theory of gases, laws of thermodynamics, the transformation of pure substance, phase diagrams, two and three component systems, simple mixtures and applications, the activities of solutions and ions.

10231311 INSTRUMENTAL ANALYTICAL CHEMISTRY

A compulsory 3-lecture course that deals with the principles and applications of instrumental chemical analysis. Attention is devoted to the theoretical basis of each type of instrument, its optimal area of application, its sensitivity, its precision, and its limitations. The topics of this course include: Oxidation-reduction theory, Potentiometry, Electogravimetry and Coulometry, Conductometry and spectrometry.

10231315 PRACTICAL INSTRUMENTAL ANALYSIS

A compulsory course that covers basic instrumental methods used in quantitative chemical analysis, such as: polarimetry, refractometry, pH-titrations, potentiometry, conductometry, electrogravimetry, coulometry and spectrometry.

10231321 INORGANIC CHEMISTRY I

A compulsory 3-lecture course that involves fundamentals of inorganic chemistry. The course starts with semi-quantitative quantum theory and its application to atomic structure. Periodic properties, molecular shapes & chemical bonding theories (Valence Shell Electron Pair Repulsion Theory, Valence Bond Theory and Molecular Orbital Theory) are rigorously treated. Molecular Symmetry, acid/base chemistry and solid state chemistry are also rigorously involved.

10231322 INORGANIC CHEMISTRY II

A compulsory 3-lecture course that is mainly devoted to the chemistry of transition elements. The course starts with descriptive chemistry of the elements, and then rigorously deals with application of bonding theories (VBT, CFT and LFT) in coordination compounds including their physical & chemical properties, structures and synthesis. Reactivity (and mechanisms) of coordination compounds is treated in depth with special focus on coordination numbers 4, 5 and 6. Using LFT in understanding electronic absorption spectra of coordination compounds is involved using Orgel diagrams and Tanabe Sugano diagrams.

10231325 PRACTICAL INORGANIC CHEMISTRY

A compulsory course involves four practical hour laboratory work per week. It consists of a set of experiments related to inorganic chemistry. The experiments include main-group elements, transition-metal elements and their coordination compounds. Synthesis, characterization techniques and reactivity are rigorously treated. Different types of isomerism are also included.

10231331 ORGANIC CHEMISTRY III

A compulsory, 3 hour lectures, course study some organic groups that were not studied in 102 31231 and 10231232 above such as carboxylic acids and their derivatives, aldehydes, ketones, amines, heterocyclic compounds and reactions of carbanions. The course includes methods of preparations, mechanisms of reactions and physical & chemical properties of these compounds.

10231332 BIOCHEMISTRY

This course covers fundamentals of biochemistry including structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and function and introduction to bioenergetics.

10231335 PRACTICAL ORGANIC CHEMISTRY II

It is a compulsory practical, one lecture and divided into 4 hours lab work periods, course study electrophilic aromatic substitution reactions and some basic preparative practical reactions such as Grignard reaction, Sandmyer reaction, Friedel-Craft reactions and functional group protection reactions. This course also involves condensation reactions, oxidation reactions and elemental analysis.

10231341 PHYSICAL CHEMISTRY II

A compulsory 3-lecture course that is a continuation of 10231241. The following topics are covered: Chemical equilibria and its applications, electrochemistry, kinetic molecular theory of liquids and gases, conductivity and movement of ions, rates of chemical reactions and its applications, mechanisms of complex reactions, photochemical and photophysical reactions, collision theory, transition state theory, diffusion of gases, in addition to catalysis and surface chemistry.

10231342 PHYSICAL CHEMISTRY III

A compulsory 3-lecture course that explains the main principles of classical mechanics, explaining the different postulates and theorems of quantum mechanics. Exact solutions of Schrödinger equation for some systems are involved like particle in a box, harmonic oscillator and the hydrogen atom.

10231343 COMPUTATIONAL CHEMISTRY

An elective 2-lecture and one lab work per week course that involves fundamentals of computational chemistry. The course introduces the student to basic concepts of programming and techniques to solve problems using high level languages. The course shows how computers can be used to solve chemical problems, such as quantum theory, spectroscopy, thermodynamics and other areas.

10231345 PRACTICAL PHYSICAL CHEMISTRY I

A laboratory course that involves a set of experiments related to solubility and activity coefficient, heat of solution, equilibrium constant and distribution coefficient, phase diagram of partially miscible liquids, two-component system of simple eutectic type, three component system, phase diagram of two components that deviates negatively from Raoult's law, density and viscosity, vaporization, refractometry, bomb calorimetry and partial molar volume.

10231346 PRACTICAL PHYSICAL CHEMISTRY II

A laboratory course that involves experiments using the following techniques in studying the kinetics of chemical reactions: conductivity, spectrophotometry, volume change at constant temperature and pressure, polarimetry, back titration, sampling methods, and experiments related to electrolytic conductance, effect of ionic strength on rate and adsorption from solution.

10231392 RESEARCH CHEMISTRY (I)

A compulsory course (lecture and practical) that discusses the principles and rules used in chemical literature and abstracts. The course also aims to teach students the use of computers in chemistry, relevant software programs, the Internet & its utilization in searching for articles, periodicals, and properties

of chemical compounds. The course stresses upon the ethics of profession for practicing chemists in all aspects taking into account protecting the environment, respect for human life, respect for copyright and intellectual & creativity property rights.

10231411 ADVANCED ANALYTICAL CHEMISTRY

An elective 3-lecture course that deals with the modern methods commonly used in analytical chemistry. This includes elucidation of basic principles behind various techniques that are used currently for performing chemical analysis, such as; Chromatography, Atomic Spectroscopy, Molecular Luminescence and Thermal methods.

10231421 ADVANCED INORGANIC CHEMISTRY

An elective 3-lecture course that involves advanced topics in inorganic chemistry. Organometallic chemistry and catalysis, solid state chemistry and molecular spectroscopy are included. Modern applications of inorganic solid compounds are also involved, such as: liquid ionics, energy storage devices (ion insertion batteries and electrochemical capacitors) and liquid crystal-based devices are also included.

10231431 ADVANCED ORGANIC CHEMISTRY

An elective 3-lecture course that studies advanced organic chemistry subjects such as aryl halides, α,β -unsaturated carbonyl compounds, orbital symmetry, heterocyclic compounds and neighboring group effect.

10231432 IDENTIFICATION AND ANALYSIS OF ORGANIC COMPOUNDS

A compulsory course that consists of 2- lectures and one (4 hours) lab work period per week. The course includes the basic qualitative analysis of identification of pure organic compounds and separation of mixtures and the identification of their components by their functional groups and preparation of derivatives. The practical part contains the identification of three pure unknowns and the separation and identification of at least one or two component mixtures. The lecture involves general instructions and guidance, and a review for the organic chemistry and theoretical identification including spectroscopy.

10231434 SPECTROSCOPY OF ORGANIC COMPOUNDS

An elective, 3 lectures, course studying the basic theories of different spectroscopic techniques and identification of organic compounds by these techniques; such as ^1H and ^{13}C nuclear magnetic resonance, mass, infra-red and ultra-violet spectroscopy.

10231435 SYNTHESIS OF ORGANIC COMPOUNDS

An elective practical course that consists of two periods per week (4 hours each). This course deals with multi-step syntheses methods, planning for these methods and protecting groups.

10231441 ADVANCED PHYSICAL CHEMISTRY

An elective 3-lecture course that involves advanced topics in physical chemistry and includes the law of corresponding states, compressibility factors, liquefaction of gases, chemical potential, Amagat's law and the ideal gas solution, chemical equilibria in gaseous systems. Equations of state, partial molar Gibb's function, free energy function, fugacity, excess functions, ideal dilute solution, distillation behavior of two components, retrograde condensation and other advanced topics.

10231464 POLYMER CHEMISTRY

An elective 3-lecture course which encompasses an introduction to learn the nature of polymers, their methods of synthesis with an account on each polymerization process, examples of the important polymers in industrial applications (such as elastomers, plastics, and fibers) & their physical properties with emphasis upon the relationship between structure and property so as to include a comparison between stereoregular polymers & other types of polymers.

10231475 PRACTICAL TRAINING

In collaboration with Practical Training Center at the University. Each pure chemistry student is required to spend 320 working hours (or 40 Days) of practical training in schools, the chemical industry and/or public sectors that involve chemical activities in Palestine and abroad. The student should submit a detailed report to the Department after concluding the training. Moreover, the student should be prepared to give oral presentation about the training activities.

Practical training can go in tandem with other semester study (no more than 9 credit hours) or in summer (with no other courses).

10231481, 10231482, 10231483 AND 10231484:

(Special Topics) Elective 3 lecture courses, in analytical, inorganic, organic and physical chemistry respectively. Each course involves an in depth study of a selected number of special topics where students heavily participate in a learner-centered approach, and show independent learning skills.

10231492 RESEARCH CHEMISTRY (II)

This "12" hours a week course is a research proposal and under the supervision of one of the faculty members. The course aims to prepare students to rely on themselves in the future and conduct activities of scientific research and acquire the necessary skills to do so.

10236461 INDUSTRIAL CHEMISTRY

A compulsory 3-lecture course which includes an introduction to the technology of chemical industries to gain knowledge of some chemical

reactors, important industrial equipment, unit processes & operations used for production & purification and their design in various fields, namely, petrochemicals, plastics, detergents, dyestuffs, drugs, and agrochemicals and others. The course emphasizes the common technological foundations without going into specialized details.

Staff

Full Professor		
Name	University of graduate	Graduation Year
Dr. Hikmat Hilal	University of Manchester, UK.	1980
Dr. Bassem Shraydeh	University of Wales, UK.	1980
Dr. Maher An-Natsheh	University of Manchester, UK.	1983
Dr. Mohammed Subu'	University of Florida, USA.	1984
Dr. Ismail Warad	Tuebingen University/Germany	2003

Associate Professor		
Name	University of graduate	Graduation Year
Dr. Foad Mahmoud	University of Sussex, UK.	1979
Dr. Nidal Zatar	University of Kent, UK.	1983
Dr. Mohammed Al- Noori	University of New York, Buffalo, N.Y., USA.	1983
Dr. Waheed Jondi	University of Manchester, UK.	1990
Dr. Shehdeh Jodeh	Wayn State University ,USA.	1991
Dr. Othman Hamed	Loyolla University , USA.	1996

Assistant Professor		
Name	University of graduate	Graduation Year
Dr. Nizar Mattar	University of Bradford, UK.	1983
Dr. Mohammed Suleiman Shtaya	Georg-August-Univesrsitate Goettingen, Germany.	2003
Dr. Samar Al-Shakhshir	University of Oklahoma, USA.	1995
Dr. Ibrahim Abu Shqair	An-Najah N. University, Nablus, Palestine.	2006
Dr. Ahed Zyoud	An-Najah N. University, Nablus, Palestine.	2009
Dr. Ahmad Abu Obeid	An-Najah N. University, Nablus, Palestine.	2010
Dr. Maather Sawalha	The University of Texas at El Paso (UTEP), USA.	2006

Lecturer		
Name	University of graduate	Graduation Year
Kamel Abdel Hadi	Southern Illinois University at Carbondale, USA.	1986
Nisreen al-Masri	University of the Pacific, USA.	1988
Randa Arafat	An-Najah N. University, Nablus, Palestine	1997
Nuha A. Shawareb	An-Najah National University, Nablus, Palestine.	2009
Amani Zu'bi	An-Najah N. University, Nablus, Palestine	2003

Teaching Assistant		
Name	University of graduate	Graduation Year
Omair Nabulsi	An-Najah National University, Nablus, Palestine.	1993
Ashraf Salman	An-Najah National University, Nablus, Palestine.	1996
Nafez Dweikat	An-Najah National University, Nablus, Palestine.	1998
Ameed Amereh	An-Najah N. University, Nablus, Palestine	2007
Mohammad Al masry	An-Najah N. University, Nablus, Palestine	2007
Mohammad Alqraini		0
Ruba Mahmoud Awayes	An-Najah N. University, Nablus, Palestine	2007
Tarek Dridy	An-Najah N. University, Nablus, Palestine	2009
Motasem Jamon	An-Najah N. University, Nablus, Palestine	2011

{ Department of Chemistry }
{ Undergraduate in Applied Chemistry }

The Department of Chemistry, founded in 1977, has four programmes in chemistry. These include a B.Sc. in Pure Chemistry, a B.Sc. in Applied Chemistry, and a M.Sc. and a Ph.D. in Chemistry.

Department Vision

The Department has a comprehensive and ambitious vision: to provide a distinguished teaching environment that enables graduates to undertake leadership in their future careers in private and public sectors. Graduates are equipped with a rich and diverse study plan that enables them to pursue their post-graduate study here and abroad. Based on excellence in teaching and research, the Department programmes have expanded horizontally (by providing two different study plans in Pure Chemistry and in Applied Chemistry) and vertically (by providing study plans leading to M.Sc. and Ph.D. degrees in Chemistry).

Department Mission

Since its establishment in 1977, the Department's mission, in accordance with that of the Faculty of Science, is helping Arab societies in general, and the Palestinian society in particular to reach sustainable economic and social development by providing them with quality graduates in chemistry at both undergraduate and graduate levels. To achieve this mission, the Department provides distinguished teaching and conducts research in pure and applied chemistry and advanced materials, while directly involving students.

B. Sc. Programme in Applied Chemistry:

Programme Vision:

In line with the University policy to adopt distinct disciplines to meet the needs of the local labour market, and in light of the significant shortage of qualified cadres in the field of chemistry and their applications in various industries (food, medicines, polymers, leather, detergents, etc.), An-Najah provides an 'Applied' chemistry programme. This programme addresses this shortage and the resulting level of quality of industrial products. It also raises the level of performance and efficiency of related industrial enterprises.

Programme Mission:

The programme aims at providing Palestinian society with necessary specialised scientific competencies to serve the society and its development plans, programmes, education, industry and conducting applied academic research. It also contributes to the dissemination of a scientific culture to provide technical services in the field of chemistry for both the public and private sectors.

Study Plan

Student Enrollment in the Programme:

Students are directly enrolled in the programme based on their General Secondary School Certificate (Tawjihi) on a competitive basis (equal opportunity policy adopted by An-Najah National University).

Graduation Requirements

To complete the B.Sc. degree in Applied Chemistry, the student must successfully complete a total of 124 credit hours, with a cumulative GPA average 2/4 or higher, as follows:

University compulsory courses	18 credit hours
Programme compulsory courses	85 credit hours
Programme elective courses	21 credit hours

The graduation requirements are shown in the provided detailed study plan.

General Programme Graduate ILOs:

Upon completing the B.Sc. study plan in chemistry the student will be able to:

- Use scientific method to explain different natural phenomena critically and creatively.
- Expand own knowledge independently.
- Interact & communicate with people from same and other disciplines in a cooperative and benevolent manner.
- Implement & preserve professional ethics in different sectors, academic or professional.
- Successfully pursue graduate study in different areas of chemistry at different university systems with minimal prerequisites.
- Undertake teaching duties in chemistry at all school system levels, including laboratory classes.
- Undertake teaching duties in other relevant disciplines (physics and biology) at preparatory school levels.
- Undertake chemical research activities under direct supervision of other senior scientists.
- Undertake university teaching assistance duties at university first-year level under supervision from other senior chemists.
- Undertake professional duties in hospitals, environment and chemical industry laboratories after suitable extra orientation and training to perform specific activities.
- Use library & online resources in chemical literature.
- Start own small/medium venture/enterprise in chemical industry.

Specific ILOs for Different Programme Courses:

Courses Attributes	Analytical Chemistry 10231211	Practical Analytical Chemistry 10231215	Organic chemistry I 10231231	Organic Chemistry II 10231232	Practical Organic chemistry I 10231235	Physical Chemistry I 10231241	Instrumental Analysis 10231311
1- Gain general basics, principles and applications of chemistry.	X	X	X	X	X	X	X
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.		X			X		
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X	X			X		
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.		X			X		
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.							
7- The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.							
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9- Ability to communicate with scientists and non-scientists		X					X
10- Gain knowledge of ethics and respect for others.							
11- Gain of a reasonable level of public education in the various aspects of life.							X

Courses	Attributes	Practical Instrumental Analysis 10231315	Inorganic Chemistry I 10231321	Inorganic Chemistry II 10231322	Practical Inorganic Chemistry 10231325	Organic Chemistry III 10231331	Practical Organic Chemistry II 10221335	Physical Chemistry II 10231341
	1- Gain general basics, principles and applications of chemistry.	X	X	X	X	X	X	X
	2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
	3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.	X			X		X	
	4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X			X		X	
	5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X			X		X	
	6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.	X			X		X	
	7- The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.	X			X		X	
	8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
	9- Ability to communicate with scientists and non-scientists	X			X		X	
	10- Gain knowledge of ethics and respect for others.							
	11- Gain of a reasonable level of public education in the various aspects of life.	X	X	X	X	X	X	

Courses Attributes	Practical Physical Chemistry I 10231345	Practical Physical Chemistry II 10231346	Research Chemistry I 10231392	Identification & Analysis of Organic Compounds 10231432	Industrial Plant Economics & Production Management 10236302	Chemical Processes Lab. 10236365
1- Gain general basics, principles and applications of chemistry.	X	X	X	X		
2- Ability to recognise and solve problems related to chemistry.	X	X		X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.	X	X		X		X
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X	X	X	X		X
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X	X		X		X
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.	X	X		X		
7- The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.	X	X	X	X		
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X
9- Ability to communicate with scientists and non-scientists	X	X	X	X	X	X
10- Gain knowledge of ethics and respect for others.					X	X
11- Gain of a reasonable level of public education in the various aspects of life.					X	X

Courses	Attributes	Practical Training 10236476	Chemical Pollution & Industrial Safety 10236312	Environmental Chemistry 10236313	Biochemistry 10231332	Petrochemicals & Organic Chemistry Technology 10236334	Advanced Analytical Chemistry 10231411	Food Industry 10236413
1-	Gain general basics, principles and applications of chemistry.							
2-	Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3-	Ability to perform accurate measurements using modern chemical instrumentation and techniques.	X		X				X
4-	Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.							X
5-	Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X		X				X
6-	Ability to use modern instrumentation and techniques and work in chemistry laboratories.			X				X
7-	The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.	X						
8-	Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9-	Ability to communicate with scientists and non-scientists	X	X			X	X	X
10-	Gain knowledge of ethics and respect for others.	X				X		X
11-	Gain of a reasonable level of public education in the various aspects of life.	X	X	X	X			X

Courses Attributes	Industrial Inorganic Chemistry 10236423	Industrial Chemistry 10236461	Polymer Chemistry 10231464	Applied Chemical Catalysis 10236465	Polymer Technology 10236467	Industrial Pharmacy 10236468	Material Science 10236469
1- Gain general basics, principles and applications of chemistry.					X		
2- Ability to recognise and solve problems related to chemistry.	X	X	X	X	X	X	X
3- Ability to perform accurate measurements using modern chemical instrumentation and techniques.							
4- Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.						X	
5- Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X					X	
6- Ability to use modern instrumentation and techniques and work in chemistry laboratories.						X	X
7- The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.					X		X
8- Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X	X	X
9- Ability to communicate with scientists and non-scientists	X	X	X	X	X		X
10- Gain knowledge of ethics and respect for others.					X		
11- Gain of a reasonable level of public education in the various aspects of life.					X		

Courses	Attributes	Food Microbiology 10236472	Special Topics in Applied Chemistry 10236485	Special Topics in Industrial Chemistry 10236486	Natural Phytochemistry 10236493	Practical Natural Phytochemistry 10236494
1-	Gain general basics, principles and applications of chemistry.				X	
2-	Ability to recognise and solve problems related to chemistry.	X	X	X	X	
3-	Ability to perform accurate measurements using modern chemical instrumentation and techniques.	X				X
4-	Ability to interpret experimental results, perform calculations on these results, writing reports and draw reasonable conclusions.	X				X
5-	Gain knowledge and understanding of the issues of safety regulations in the use of chemicals in their laboratory work.	X			X	X
6-	Ability to use modern instrumentation and techniques and work in chemistry laboratories.	X				X
7-	The ability to make effective use of computers in chemistry applications using standard and chemistry specific software packages.					X
8-	Ability to make effective use of the library and other information resources in chemistry, including the primary literature, tabulated data, and secondary sources such as the internet.	X	X	X	X	X
9-	Ability to communicate with scientists and non-scientists	X	X	X		
10-	Gain knowledge of ethics and respect for others.	X			X	X
11-	Gain of a reasonable level of public education in the various aspects of life.	X			X	X

Applied Chemistry plan

Type of Courses	Credit Hours	
University Compulsory Courses	18	
Specialization Compulsory Courses	85	
Specialization Elective Courses	18	
Specialization Electives from Another Faculty	3	
Total Credit Hours	124	

University Compulsory Courses (18 Credits)

Course Code	Course's Title	Credit Hours	Prerequisites
10032100	Remedial English	0	
11000103	English Language I	3	
11000322	English Language II	3	1) 1000103
11000101	Islamic Culture	3	
11000117	Leadership and Communication Skills	1	
11000105	Palestinian Studies	3	
11000108	Society Service	1	
11000102	Arabic Language	3	
11000127	Introduction to Computer Science	1	

Specialization Compulsory Courses (85 Credits)

Course Code	Course's Title	Credit Hours	Prerequisites
10201101	General Biology (1)	3	
10211101	Calculus I	3	
10211102	Calculus II	3	1) 10211101
10211201	Calculus III	3	1) 10211102
10221101	General Physics I	3	
10221102	General Physics II	3	1) 10221101
10221107	General Physics (1) Lab	1 or concurrent with 10221101 or 10221105	1) 10221101
10221108	General Physics (2) Lab	1 or concurrent with it 2) 10221107 or 10221109	1) 10221102
10231101	General Chemistry (1)	3	
10231102	General Chemistry (2)	3	1) 10231101
10231107	General Chemistry (1) Lab	1 or concurrent with it	1) 10231101
10231108	General Chemistry (2) Lab	1 2) 10231102 or concurrent with it	1) 10231107

10231211	Analytical Chemistry	3 2) 10231108	1) 10231102
10231215	Practical Analytical Chemistry	1 or concurrent with it 2) 10231108	1) 10231211
10231231	Organic Chemistry I	3 2) 10231108	1) 10231102
10231232	Organic Chemistry II	3	1) 10231231
10231235	Practical Organic Chemistry I	2 or concurrent with it 2) 10231108	1) 10231231
10231241	Physical Chemistry I	3 or concurrent with it 2) 10231102	1) 10211201
10231311	Instrumental Analytical Chemistry	3	1) 10231211
10231315	Practical Instrumental Analysis	1 2) 10231311 or concurrent with it	1) 10231215
10231321	Inorganic Chemistry I	3 or concurrent with it	1) 10231241
10231322	Inorganic Chemistry II	3	1) 10231321
10231325	Practical Inorganic Chemistry	2 or concurrent with it 2) 10231321	1) 10231322
10231331	Organic Chemistry III	3	1) 10231232
10231335	Practical Organic Chemistry II	2 or concurrent with it 2) 10231235	1) 10231331
10231341	Physical Chemistry II	3	1) 10231241
10231345	Practical Physical Chemistry I	1 2) 10231215	1) 10231241
10231346	Practical Physical Chemistry II	1 2) 10231341	1) 10231345
10231392	Research Chemistry I	3	60 hours or more completed
10231432	Identification & Analysis of Organic Compounds	3 2) 10231331	1) 10231335
10236476	Practical Training	3	85 hours or more completed
10236302	Industrial Plant Economics & Production Management	3	1) 10231102
10236365	Chemical Processes Laboratory	2 2) 10231235	1) 10231215
10236461	Industrial Chemistry	3 2) 10231241	1) 10231232
10512182	Methods of Science Teaching	3	

Specialization Elective Courses (18 Hours)

Course Code	Course's Title	Credit Hours	Prerequisites
10231332	Biochemistry	4 2) 10231235	1) 10231232
10231411	Advanced Analytical Chemistry	3	1) 10231311
10231464	Polymer Chemistry	3 or concurrent with it 2) 10231232	1) 10231331
10236312	Chemical Pollution & Industrial Safety	3	1) 10231211
10236313	Environmental Chemistry	3	1) 10231211

10236334	Petrochemicals & Organic	3	1) 10231331
	Chemical Technology		
10236413	Food Industry Chemistry	2	1) 10231311
10236423	Industrial Inorganic Chemistry	3	1) 10231321
10236465	Applied Chemical Catalysis	3 2) 10231232	1) 10231322
10236467	Polymer Technology	3	1) 10231464
10236468	Industrial Pharmacy	3 2) 10231461	1) 10231241
10236469	Material Science	3	1) 10231322
10236472	Food Microbiology	3	
10236485	Special Topics in Applied Chemistry	3 or concurrent with it 2) 10231341 3) 10231322	1) 10231331
10236486	Special Topics in Industrial Chemistry	3	1) 10236461
10236493	Natural Phytochemistry	3	1) 10231232
10236494	Practical Natural Phytochemistry	1 with 10231493	Concurrent
Elective Courses from Faculty of Educational Science (3 Hours)			
Course Code	Course's Title	Credit Hours	Prerequisites
10512138	Classroom Management	3	
10512491	Practical Education for Science Students	3	

Course Description

10231101 GENERAL CHEMISTRY I

A compulsory 3-lecture course that is mainly designed to give students a knowledge of the most important chemical principles such as atomic structure and periodic table, mass relationships in chemical reactions, reactions in aqueous solutions, gases, thermo chemistry, quantum theory and the electronic structure of atoms, periodic relationships among the atoms, basic concepts of chemical bonding, molecular geometry and hybridization of atomic orbitals.

10231102 GENERAL CHEMISTRY II

A compulsory 3-lecture course that is a continuation of General Chemistry (I). It is designed to introduce some basic chemical facts and theories about solutions, kinetics, dynamic equilibrium, thermodynamics, electrochemistry and nuclear chemistry.

10231107 GENERAL CHEMISTRY I LAB

A compulsory practical course, designed to introduce the students to various experimental practices used in general chemistry, such as accurate weighing, performing basic chemical methods such as filtration, titration and gravimetric analysis, make simple metathesis and redox reactions, calorimetry experiments and calculations.

10231108 GENERAL CHEMISTRY II LAB

A compulsory practical course that is a continuation for skills gained in Chemistry 10231107 course. The student is expected to use what he/she learned in new techniques such as the synthesis and analysis of aspirin, molar mass of a solid from freezing point depression phenomena, experimental determination of the reaction rate law. The course involves other topics such as: reaction kinetics, chemical equilibrium, aqueous solutions and pH concept, bleach analysis, thermodynamics and electrochemistry.

10231211 ANALYTICAL CHEMISTRY

A compulsory 3-lecture course that deals with the classical quantitative methods of chemical analysis. These include gravimetric and titrimetric methods of analysis. The course also includes topics in statistics and data analysis that are important in analytical chemistry.

10231215 PRACTICAL ANALYTICAL CHEMISTRY

A compulsory laboratory course that involves experiments related to classical chemical analysis. It provides basic information about safety rules, tools of analytical chemistry, statistics for data treatment, and practice to various gravimetric and volumetric methods of analysis.

10231231 ORGANIC CHEMISTRY I

A compulsory 3-hour lectures, course that starts with an introduction to hybridization, covalent and hydrogen bonds; and dipole of bonds and molecules. Then rigorously treats the chemical structures, chemical properties and physical properties of open chain hydrocarbons such as alkanes, alkenes and alkynes. Structure and properties of alkyl halides and alcohols including syntheses, properties, mechanisms and stereochemistry are also involved.

10231232 ORGANIC CHEMISTRY II

A compulsory 3-lecture course that involves the basics of organic spectroscopy such as nuclear magnetic spectroscopy (NMR), infra-red spectroscopy (IR), ultra-violet spectroscopy (UV) and mass spectroscopy (MS), and the use of these spectroscopic techniques in the identification of organic compounds. This course, also, deals with structures, shapes, preparations and reactions of ethers, phenols and conjugated unsaturated compounds. Structures, properties and reactions of aromatic compounds, including different substitution reactions, are also involved.

1031235 PRACTICAL ORGANIC CHEMISTRY I

A compulsory practical, divided into four hour lab work periods weekly. The course includes some experiments which give the student practice in basic laboratory techniques such as determination of physical properties (melting point and boiling point) and methods of separation (extraction, distillation and steam distillation) and purification (crystallization and chromatography). This course also involves chemical reactions such as elimination, addition and substitution.

10231241 PHYSICAL CHEMISTRY I

A compulsory 3-lecture course that covers the properties of gases, kinetic theory of gases, laws of thermodynamics, the transformation of pure substance, phase diagrams, two and three component systems, simple mixtures and applications, the activities of solutions and ions.

10231311 INSTRUMENTAL ANALYTICAL CHEMISTRY

A compulsory 3-lecture course that deals with the principles and applications of instrumental chemical analysis. Attention is devoted to the theoretical basis of each type of instrument, its optimal area of application, its sensitivity, its precision, and its limitations. The topics of this course include: Oxidation-reduction theory, Potentiometry, Electogravimetry and Coulometry, Conductometry and spectrometry.

10231315 PRACTICAL INSTRUMENTAL ANALYSIS

A compulsory course that covers basic instrumental methods used in quantitative chemical analysis, such as: polarimetry, refractometry, pH - titrations, potentiometry, conductometry, electrogravimetry, coulometry and spectrometry.

10231321 INORGANIC CHEMISTRY I

A compulsory 3-lecture course that involves fundamentals of inorganic chemistry. The course starts with semiquantitative quantum theory and its application to atomic structure. Periodic properties, molecular shapes & chemical bonding theories (Valence Shell Electron Pair Repulsion Theory, Valence Bond Theory and Molecular Orbital Theory) are rigorously treated. Molecular Symmetry, acid/base chemistry and solid state chemistry are also rigorously involved.

10231322 INORGANIC CHEMISTRY II

A compulsory 3-lecture course that is mainly devoted to the chemistry of transition elements. The course starts with descriptive chemistry of the elements, and then rigorously deals with application of bonding theories (VBT, CFT and LFT) in coordination compounds including their physical & chemical properties, structures and synthesis. Reactivity (and mechanisms) of coordination compounds is treated in depth with special focus on coordination numbers 4, 5 and 6. Using LFT in understanding electronic absorption spectra of coordination compounds is involved using Orgel diagrams and Tanabe Sugano diagrams.

10231325 PRACTICAL INORGANIC CHEMISTRY

A compulsory course involves four practical hour laboratory work per week. It consists of a set of experiments related to inorganic chemistry. The experiments include main-group elements, transition-metal elements and their coordination compounds. Synthesis, characterization techniques and reactivity are rigorously treated. Different types of isomerism are also included.

10231331 ORGANIC CHEMISTRY III

A compulsory, 3 hour lectures, course study some organic groups that were not studied in 102 31231 and 10231232 above such as carboxylic acids and their derivatives, aldehydes, ketones, amines, heterocyclic compounds and reactions of carbanions. The course includes methods of preparations, mechanisms of reactions and physical & chemical properties of these compounds.

10231332 BIOCHEMISTRY

This course covers fundamentals of biochemistry including structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and function and introduction to bioenergetics.

10231335 PRACTICAL ORGANIC CHEMISTRY II

It is a compulsory practical, one lecture and divided into 4 hours lab work periods, course study electrophilic aromatic substitution reactions and some basic preparative practical reactions such as Grignard reaction, Sandmyer reaction, Friedel-Craft reactions and functional group protection reactions. This course also involves condensation reactions, oxidation reactions and elemental analysis.

10231341 PHYSICAL CHEMISTRY II

A compulsory 3-lecture course that is a continuation of 1023124. The following topics are covered: Chemical equilibria and its applications, electrochemistry, kinetic molecular theory of liquids and gases, conductivity and movement of ions, rates of chemical reactions and its applications, mechanisms of complex reactions, photochemical and photophysical reactions, collision theory, transition state theory, diffusion of gases, in addition to catalysis and surface chemistry .

10231345 PRACTICAL PHYSICAL CHEMISTRY I

A laboratory course that involves a set of experiments related to solubility and activity coefficient , heat of solution, equilibrium constant and distribution coefficient , phase diagram of partially miscible liquids, two-component system of simple eutectic type , three component system, phase diagram of two components that deviates negatively from Raoult's law, density and viscosity, heat of vaporization, refractometry, bomb calorimetry, and partial molar volume .

10231346 PRACTICAL PHYSICAL CHEMISTRY II

A laboratory course that involves experiments using the following techniques in studying the kinetics of chemical reactions: conductivity, spectrophotometry, volume change at constant temperature and pressure, polarimetry, back titration , sampling methods , and experiments related to electrolytic conductance , effect of ionic strength on rate and adsorption from solution .

10231392 RESEARCH CHEMISTRY (I)

A compulsory course (lecture and practical) that discusses the principles and rules used in chemical literature and abstracts. The course also aims to teach students the uses of computers in chemistry, relevant software programs, the Internet & its utilization in searching for articles, periodicals, and properties of chemical compounds. The course stresses upon the ethics of profession for practicing chemists in all aspects taking into account protecting the environment, respect for human life, respect for copyright and intellectual & creativity property rights.

10231411 ADVANCED ANALYTICAL CHEMISTRY

An elective 3-lecture course that deals with the modern methods commonly used in analytical chemistry. This includes elucidation of basic principles behind various techniques that are used currently for performing chemical analysis, such as; Chromatography, Atomic Spectroscopy, Molecular Luminescence and Thermal methods.

10231432 IDENTIFICATION AND ANALYSIS OF ORGANIC COMPOUNDS

A compulsory course that consists of 2- lectures and one (4 hours) lab period per week, the course includes the basic qualitative analysis of identification of pure organic compounds and separation of mixtures and the identification of their components by the identification of the functional groups and preparation of derivatives. The practical part contains the identification of three pure unknowns and the separation and identification of at least one two component mixture. The lecture part involves general instructions and a guidance of the course, and a review for the organic chemistry and theoretical identification including spectroscopy.

10231441 ADVANCED PHYSICAL CHEMISTRY

An elective 3-lecture course that involves advanced topics in physical chemistry and includes the law of corresponding states, compressibility factors, liquefaction of gases, chemical potential, Amagat's law and the ideal gas solution, chemical equilibria in gaseous systems. Equations of state, partial molar Gibb's function, free energy function, fugacity, excess functions, ideal dilute solution, distillation behavior of two components, retrograde condensation and other advanced topics.

10231464 POLYMER CHEMISTRY

An elective 3-lecture course which encompasses an introduction to the nature of polymers, their methods of synthesis with an account on each polymerization process, examples of the important polymers in industrial applications (such as elastomers, plastics, and fibers) & their physical properties with emphasis upon the relationship between structure and property so as to include a comparison between stereoregular polymers & other types of polymers.

10236302 INDUSTRIAL PLANT ECONOMICS AND PRODUCTION MANAGEMENT

An elective 3-lecture course that includes consumer demand, production, cost, market structures and factors. It also includes introduction to operation management, product design, process analysis, facility layout, forecasting, operations scheduling, quality management and cost studies.

10236312 CHEMICAL POLLUTION AND INDUSTRIAL SAFETY

An elective 3-lecture course that is concerned with types of chemical & radiating pollutants in water & air and their sources, methods of pollution-monitoring, methods of water purification, safety in laboratories, hazardous chemicals & their fate.

10236313 ENVIRONMENTAL CHEMISTRY

An elective 3-lecture course deals with the fundamental principles of chemistry and using them to understand the source, fate, and reactivity of compounds in natural and polluted environments. Emphasis will be placed on the environmental implications of energy utilization and on the chemistry of the atmosphere, hydrosphere, and lithosphere. Environmental issues that will be discussed include climate change, air pollution, stratospheric ozone depletion, pollution and treatment of water sources, and the utilization of insecticides and herbicides.

10236334 PETROCHEMICALS AND ORGANIC CHEMISTRY TECHNOLOGY

This is a three credit hours elective course for students of Applied Chemistry. This course deals with major processes in Petrochemical Industry, such as synthesis of ethylene and co-products, ethylene derivatives, propylene derivatives, butadiene and butanes, benzene, toluene and xylenes production, and their derivatives, steam reforming and related processes, and some miscellaneous processes and products.

10236365 CHEMICAL PROCESSES LABORATORY

A compulsory laboratory course which includes study and small-scale production of industrially important materials (soap, industrial detergents, shampoo, creams, soft drinks, jam, cheese, and aromatic oils) besides quality tests for these products & others (such as vegetable oil & milk).

10236413 FOOD INDUSTRY CHEMISTRY

An elective 3-lecture course that covers raw materials, major food industries, methods followed in producing foodstuff, storage and manufacturing food, additives, such as flavoring, preservatives, coloring and sweetening materials. In addition, the course focuses on food analysis by using modern techniques.

10236423 INDUSTRIAL INORGANIC CHEMISTRY

An elective 3-lecture course deals with industrial operations used in the production of acids (such as sulfuric acid), ammonia, soda, phosphate compounds, industrial gases, glass, ceramics, salts of alkalis and other important chemicals.

10236461 INDUSTRIAL CHEMISTRY

A compulsory 3-lecture course which includes an introduction to the technology of chemical industries to gain knowledge of some chemical reactors, important industrial equipment, unit processes & operations used for production & purification and their design in various fields, namely, petrochemicals, plastics, detergents, dyestuffs, drugs, and agrochemicals and others. The course emphasizes the common technological foundations without going into specialized details.

10236465 APPLIED CHEMICAL CATALYSIS

An elective 3-lecture course that introduces applied chemistry students to different aspects of chemical catalysis, including theory and applications. The course covers different types of homogeneous, heterogeneous and hybrid types of catalysis. Catalysis by molecular organometallic compounds and zeolites is involved together with surface catalysis by metals and metal oxides. Photocatalysis is also included. Applications of catalysis in organic reactions such as hydrogenation, reforming, carbonylation, isomerization, and other processes are included. Environmental applications of catalysis, such as cleanup processes by solar light are also included.

10236467 POLYMER TECHNOLOGY

An elective 3-lecture course which deals with industrial methods of producing & forming polymers such as moulding, blowing, calendering, casting, extrusion, foaming, coloring, and filling with additives.

10236468 INDUSTRIAL PHARMACY

This is an elective 3-lecture course deals with the basic principles of pharmaceutical manufacturing operations and machinery. In this course students are acquainted with the basic requirements of the current Good Manufacturing Practices (cGMP), basic operations in the manufacturing of the different pharmaceutical dosage forms, quality control procedures and equipments used. The course describes basic design and various divisions and departments of an industrial plant, cGMP requirements, equipments and dealing with various problems encountered during the development of various dosage forms from the research and development (R&D) stage to final approval.

10236469 MATERIAL SCIENCE

An elective 3-lecture course that involves the principles of structure and bonding together with physical characteristics of materials utilized in societal daily life. Properties of materials related to atomic, molecular and crystalline structure are targeted. Metals, ceramics, semiconductors, nano-materials and conjugated polymers are involved. Materials manufacturing and characterization techniques with AFM, SEM, XRD and others are involved.

10236472 FOOD MICROBIOLOGY

An elective 3-lecture course that involves food preservation, spoilage, poisoning and modern concepts in quality assurance. The aim is to understand the factors governing microbial changes in foods. Problem solving in the food industry is emphasized. Laboratory work of this course includes taking samples and knowing the microbes in the food like fruits, vegetables, dairy and meals. Knowing the types of microbes in food is the most important in analysis.

10236476 PRACTICAL TRAINING

The applied chemistry student, through coordination with the Practical Training Centre at An-Najah National University, is required to spend 320 working hours or 40 days of training (8 hours/day) in chemical & allied industries or relevant centres or laboratories. After completion of training, the student must write a report and/or give a presentation of his work.

Practical training can go in tandem with other semester study (no more than 9 credit hours) or in summer (with no other courses).

10236485 SPECIAL TOPICS IN APPLIED CHEMISTRY

An elective 3-lecture course that covers different advanced topics in applied chemistry.

10236486 SPECIAL TOPICS IN INDUSTRIAL CHEMISTRY

An elective 3-lecture theoretical course that covers different advanced topics in industrial chemistry.

10236493 NATURAL PHYTOCHEMISTRY

This course focuses on the classification of medicinal plants, ways of identifying their chemical constituents, methods of separation. The course involves also a study of the physico-chemical properties of the natural pure compounds, methods of structure determination (MS, NMR, IR, and UV).

10236494 PRACTICAL NATURAL PHYTOCHEMISTRY

This experimental course involves a study of natural chemical groups such as fluorides, glycosides, volatile and fixed oils, ways of their identification and evaluation according to accredited pharmaceutical rules.

Staff

Full Professor		
Name	University of graduate	Graduation Year
Dr. Hikmat Hilal	University of Manchester, UK.	1980
Dr. Bassem Shraydeh	University of Wales, UK.	1980
Dr. Maher An-Natsheh	University of Manchester, UK.	1983
Dr. Mohammed Subu'	University of Florida, USA.	1984
Dr. Ismail Warad	Tuebingen University/Germany	2003

Associate Professor		
Name	University of graduate	Graduation Year
Dr. Foad Mahmoud	University of Sussex, UK.	1979
Dr. Nidal Zatar	University of Kent, UK.	1983
Dr. Mohammed Al- Noori	University of New York, Buffalo, N.Y., USA.	1983
Dr. Waheed Jondi	University of Manchester, UK.	1990
Dr. Shehdeh Jodeh	Wayn State University, USA.	1991
Dr. Othman Hamed	Loyolla University, USA.	1996

Assistant Professor		
Name	University of graduate	Graduation Year
Dr. Nizar Mattar	University of Bradford, UK.	1983
Dr. Mohammed Suleiman Shtaya	Georg-August-Universrsitate Goettingen, Germany.	2003
Dr. Samar Al-Shakhshir	University of Oklahoma, USA.	1995
Dr. Ibrahim Abu Shqair	An-Najah N. University, Nablus, Palestine.	2006
Dr. Ahed Zyoud	An-Najah N. University, Nablus, Palestine.	2009
Dr. Ahmad Abu Obeid	An-Najah N. University, Nablus, Palestine.	2010
Dr. Maather Sawalha	The University of Texas at El Paso (UTEP), USA.	2006

Lecturer		
Name	University of graduate	Graduation Year
Kamel Abdel Hadi	Southern Illinois University at Carbondale, USA.	1986
Nisreen al-Masri	University of the Pacific, USA.	1988
Randa Arafat	An-Najah N. University, Nablus, Palestine	1997
Nuha A. Shawareb	An-Najah National University, Nablus, Palestine.	2009
Amani Zu'bi	An-Najah N. University, Nablus, Palestine	2003

Teaching Assistant		
Name	University of graduate	Graduation Year
Omair Nabulsi	An-Najah National University, Nablus, Palestine.	1993
Ashraf Salman	An-Najah National University, Nablus, Palestine.	1996
Nafez Dweikat	An-Najah National University, Nablus, Palestine.	1998
Ameed Amereh	An-Najah N. University, Nablus, Palestine	2007
Mohammad Al masry	An-Najah N. University, Nablus, Palestine	2007
Mohammad Alqraini		0
Ruba Mahmoud Awayes	An-Najah N. University, Nablus, Palestine	2007
Tarek Dridy	An-Najah N. University, Nablus, Palestine	2009
Motasem Jamon	An-Najah N. University, Nablus, Palestine	2011

Courses Offered by Chemistry Department for Other Faculties

Course Code	Course's Title	Credit Hours	Prerequisites	Faculty
10231103	General Chemistry for Veterinary Medicine	3		Veterinary Medicine
10231104	General Chemistry Lab for Veterinary Medicine	1	1) 10231103 or concurrent with it	Veterinary Medicine
10231114	General Chemistry for Health Science	3		Health Sciences
10231115	General Chemistry Lab for Health Science	1	1) 10231114 or concurrent with it	Health Sciences
10231212	Analytical Chemistry for Biological Science	3	1) 10231102 2) 10231108	Biological Science
10231213	Analytical Chemistry for Health Science	3	1) 10231114 2) 10231115	Health Sciences
10231214	Analytical Chemistry Lab for Health Science	1	1) 10231213 or concurrent with it 2) 10231115	Health Sciences
10231216	Analytical Chemistry Lab for Biological Science	1	1) 10231212 or concurrent with it 2) 10231108	Biological Science
10231233	Organic Chemistry for Biological Science	3	1) 10231102 2) 10231108	Biological Science
10231234	Organic Chemistry for Veterinary Medicine	3	1) 10231102 or 10231103 2) 10231108 or 10231104	Veterinary Medicine
10231236	Organic Chemistry for Health Science (I)	3	1) 10231114 2) 10231115	Health Sciences
10231237	Organic Chemistry Lab for Biological Science	1	1) 10231233 or concurrent with it	Biological Science
10231238	Organic Chemistry Lab for Veterinary Medicine	2	1) 10231234 or concurrent with it	Veterinary Medicine
10231239	Organic Chemistry Lab for Health Science (I)	1	1) 10231236 or concurrent with it	Health Sciences
10231313	Instrumental Analytical Chemistry	3	1) 10231213	Health Science
10231314	Instrumental Analysis Lab.	1	1) 10231214 2) 10231313 or concurrent with it	Health Sciences
10231330	Organic Chemistry (II) for Health Science (II)	3	1) 10231236	Health Sciences
10231334	Organic Chemistry Lab (II) for Health Science (II)	1	1) 10231238 2) 10231330 or concurrent with it	Health Sciences

Course Description

10231103 GENERAL CHEMISTRY FOR VETERINARY MEDICINE

A compulsory 3-lecture course that is mainly designed to give students a knowledge of the most important chemical principles, such as atomic structure and the periodic table, mass relationships in chemical reactions, reactions in aqueous solutions, gases, thermo chemistry, basic chemical facts and theories about solutions, kinetics, dynamic equilibrium, thermodynamics and electrochemistry.

10231104 GENERAL CHEMISTRY LAB FOR VETERINARY MEDICINE.

A compulsory practical course, designed to introduce the students to various experimental practices used in general chemistry, such as accurate weighing, performing basic chemical methods such as filtration, titration and gravimetric analysis, make simple metathesis and redox reactions, calorimetry experiments and calculations, kinetics, equilibrium experiments and using pH- meter.

10231114 GENERAL CHEMISTRY FOR HEALTH SCIENCE

A compulsory 3-lecture course that is mainly designed to give students a knowledge of the most important chemical principles such as atomic structure and the periodic table, mass relationships in chemical reactions, reactions in aqueous solutions, gases, thermo chemistry, basic chemical facts and theories about solutions, kinetics, dynamic equilibrium, thermodynamics and electrochemistry.

10231115 GENERAL CHEMISTRY LAB FOR HEALTH SCIENCE

A compulsory practical course, designed to introduce the students to various experimental practices used in general chemistry, such as accurate weighing, performing basic chemical methods such as filtration, titration and gravimetric analysis, make simple metathesis and redox reactions, calorimetry experiments and calculations, kinetics, equilibrium experiments and using pH- meter.

10231212 ANALYTICAL CHEMISTRY FOR BIOLOGICAL SCIENCE

A compulsory 3-lecture course that involves some classical and modern methods of analysis, such as: Gravimetry, Titrimetry, and Spectrometry. The course also includes topics in statistics and data analysis that are important in analytical chemistry.

10231213 ANALYTICAL CHEMISTRY FOR HEALTH SCIENCE

A compulsory 3-lecture course that involves some classical and modern methods of analysis, such as: Gravimetry, Titrmetry, and Spectrometry. The course also includes topics in statistics and data analysis that are important in analytical chemistry.

10231214 ANALYTICAL CHEMISTRY LAB FOR HEALTH SCIENCE

A compulsory laboratory course that involves experiments related to classical chemical analysis. It provides basic information about safety rules, tools of analytical chemistry, statistics for data treatment, and practice to various gravimetric and volumetric methods of analysis.

10231216 ANALYTICAL CHEMISTRY LAB FOR BIOLOGICAL SCIENCE

A compulsory laboratory course that involves experiments related to classical chemical analysis. It provides basic information about safety rules, tools of analytical chemistry, statistics for data treatment, and practice to various gravimetric and volumetric methods of analysis.

10231233 ORGANIC CHEMISTRY FOR BIOLOGICAL SCIENCE

A compulsory 3-lecture course that starts with an introduction to organic chemistry then rigorously deals with physical and chemical properties, structure, naming and methods of syntheses of some organic compounds such as alkanes, alkenes, alkynes and aromatics. The course also involves physical and chemical properties of some basic functional groups such as alcohols, amines, carboxylic acids and their derivatives; and phenols together with basic stereochemistry.

10231234 ORGANIC CHEMISTRY FOR VETERINARY MEDICINE

A compulsory 3-lecture course that starts with an introduction to organic chemistry then rigorously deals with physical and chemical properties, structure, naming and methods of syntheses of some organic compounds such as alkanes, alkenes, alkynes and aromatics. The course also involves physical and chemical properties of some basic functional groups such as alcohols, amines, carboxylic acids and their derivatives; and phenols together with basic stereochemistry.

10231236 ORGANIC CHEMISTRY FOR HEALTH SCIENCE (I)

A compulsory 3-lecture course that starts with an introduction to organic chemistry then rigorously deals with physical and chemical properties, structure, naming and methods of syntheses of some organic compounds such as alkanes, alkenes, alkynes and aromatics. The course also involves physical and chemical properties of some basic functional groups such as alcohols, amines, carboxylic acids and their derivatives; and phenols together with basic stereochemistry.

10231237 ORGANIC CHEMISTRY LAB FOR BIOLOGICAL SCIENCE

A compulsory practical, divided into four hour lab periods weekly. The course includes some experiments which give the student practice in basic laboratory techniques such as determination of physical properties (melting point and boiling point) and methods of separation (extraction, distillation and steam distillation) and purification (crystallization and chromatography). This course also involves some chemical reactions such as elimination, addition and substitution.

10231238 ORGANIC CHEMISTRY LAB FOR VETERINARY MEDICINE

A compulsory practical, divided into four hour lab periods weekly. The course includes some experiments which give the student practice in basic laboratory techniques such as determination of physical properties (melting point and boiling point) and methods of separation (extraction, distillation and steam distillation) and purification (crystallization and chromatography). This course also involves some chemical reactions such as elimination, addition and substitution.

10231239 ORGANIC CHEMISTRY LAB FOR HEALTH SCIENCE (I)

A compulsory practical, divided into four hour lab periods weekly. The course includes some experiments which give the student practice in basic laboratory techniques such as determination of physical properties (melting point and boiling point) and methods of separation (extraction, distillation and steam distillation) and purification (crystallization and chromatography). This course also involves some chemical reactions such as elimination, addition and substitution.

10231313 INSTRUMENTAL ANALYTICAL CHEMISTRY

Instrumental analysis course which will explain the theory of operation, instrumental design, methodology, and applications of instrumental techniques of spectroscopic methods including infrared, UV/VIS, MS, and chromatographic methods including gas, liquid, and thin layer chromatography and some potentiometric and coulometric methods of analysis.

10231314 INSTRUMENTAL ANALYSIS LAB

A compulsory course involves three practical hour laboratory work per week. It covers basic instrumental methods used in quantitative chemical analysis, such as: polarimetry, refractometry, pH - titrations, potentiometry, conductometry, electrogravimetry, coulometry and spectrometry.

10231330 ORGANIC CHEMISTRY (II) FOR HEALTH SCIENCE (II)

A compulsory, 3 hour lectures. The course is a continuation to organic chemistry (I) 0231236 and is designed to study the importance of organic pharmaceutical compounds. Topics to be covered are, α - β unsaturated carbonyl compounds; heterocyclic compounds and their nomenclature,

chemical properties and their importance in pharmaceuticals; chemistry of lipids and carbohydrates is also covered.

10231334 ORGANIC CHEMISTRY LAB (II) FOR HEALTH SCIENCE (II)

It is a compulsory practical, one lecture and 4 hour lab periods, course study electrophilic aromatic substitution reactions and some basic preparative practical reactions such as Grignard reaction, Sandmyer reaction, Friedel-Craft reactions and functional group protection reactions. This course also involves condensation reactions, oxidation reactions and elemental analysis.

┌ Faculty of Fine Art ┐
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{ Painting program }

The vision:

The vision of this program can be summarized in that it strives to produce graduates able to contribute in the development of painting using modern techniques, which in turn enriches the Palestinian plastic arts movement and provides it with artists who make it their responsibility to bring the Palestinian experience to the global level. This is accomplished by providing students with international experiences and up-to-date equipment.

The mission:

The mission of this plan is to have competent graduates in the area of visual arts, which are capable of taking an artistic path through a network of connected theoretical courses dealing with historical, intellectual, aesthetic, creative and artistic criticism. In addition to theoretical courses, the program makes use of practical courses in the fields of painting, painting and sculpture, plus modern techniques in plastic arts, making use of the facilities and high-tech equipment available in the Department, This program makes sure that students are exposed to local as well as global art experiences by hosting artists for galleries and workshops which enrich the students' own experiences.

The objectives:

The Department of Plastic Arts constantly aims at expanding the area of its specializations and starting new ones and providing higher academic degrees, in addition to preparing specialized artistic staff for the service of the Palestinian plastic arts movement and including it within the global artistic movement.

The objectives of the program can be summarized as the following:

1. Producing artistically, aesthetically and creatively educated students with high skills in the fields of painting, sculpture and modern techniques.
2. Providing the Palestinian artistic movement with artists who con-

tribute to the enrichment of the Palestinian artistic movement.

3. Working for the refinement of the artistic taste in the local community.
4. Staying up-to-date with global artistic techniques and the contemporary vision of art by hosting international artists for the purpose of showing and discussing their work.
5. Working for the refinement of the aesthetic aspect of the local community through what is called “public art.”

The ILOS:

The plastic arts department aims at producing students with the following descriptions:

1. Loyal to their department faculty and mother university.
2. In possession of a plastic arts education resting on the foundations of art creation and theories of aesthetics.
3. In possession of plastic artistic skills, especially in the fields of drawing, photography and modeling of two- and three-dimensional figures.
4. In possession of a personal style of expression through visual art.
5. Capable of incorporating visual-artistic language in artistic criticism.
6. Well-versed in the history of art and the plastic arts movement throughout the years.
7. Aware of the importance of plastic arts in the growth of society and in defending its case.
8. Capable of creative thinking.
9. Active in spreading awareness in their environment and local community through visual and creative views.
10. Active in beautifying the visual scenes in their community and environment.
11. Capable of incorporating modern technologies in the areas of plastic arts.
12. Capable of communicating with the Arab and international visual-artistic institutions in the areas of plastic arts.

plan for the Painting and Photography program:

University requirements:

Course code	Course title	Credit hours
10032100	English 100 (Remedial)	0
11000101	Islamic Culture	3
11000102	Arabic Language	3
11000103	University English 1	3
11000323	University English 2	3
11000105	Palestinian Studies	3
11000117	Leadership and communication skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1

Students must take all the courses in this group, consisting of 18 credit hours.

Drawing and Painting course plan: 124 credit hours.

Major compulsory credit hours (94)

Course code	Course title	Credit hours	Prerequisites
11211101	Introduction to the Arts	2	-
11211328	Aesthetics	3	-
11201101	Introduction to Musicology	2	-
11201103	Palestinian Folk Music	2	-
11211329	Palestinian Folk Art	2	-
11211230	Hydrographs	3	11211106
11211102	Academic Drawing 1	3	-
11211103	Academic Drawing 2	3	11211102
11211204	Academic Drawing 3	3	11211103
11211205	Academic Drawing 4	3	11211204
11211106	Photography 1	3	11211102
11211207	Photography 2	3	11211106
11211208	Photography 3	3	11211207
11211309	Photography 4	3	11211208
11211310	Photography 5	3	11211308
11211116	Art History and Appreciation 1	3	-
11211217	Art History and Appreciation 2	3	11211116
11211109	Theory of Colors and its Application 1	3	-
11211219	Theory of Colors and its Application 2	3	11211109
11212320	Sculpture 1	3	-
11216211	Art Graphics 1	3	11211109
11211321	Open Landscapes 1	3	-
11211122	Plastic Arts Design	3	11211102
11211323	Art Teaching Methods	3	-
11211324	Islamic and Contemporary Arabic Art	3	-
11211212	Compositional Formation	3	11211102
11211212	Photography Techniques	3	11211102
11211414	Palestinian Plastic Arts Movement	3	-
11211213	Artistic Anatomy	3	11211102
11211315	Modern and Contemporary Art	3	11211217
11211331	Research Methodology	2	-
11311426	Graduation Research Project	1	11211309
11211427	Graduation Project	3	11211426
11211325	Field Training	2	11211323

Department electives: 12 credit hours.

Course code	Course title	Credit hours	prerequisites
11211351	Academic Drawing 5	3	11211205
11211352	Open Landscapes 2	3	11211321
11216355	Art Graphics 2	3	11216211
11211453	Drawing and Painting via Computer	3	11211204
11221102	Ceramics 1	3	-
11216318	Light Painting	3	11211102
11211454	Art Criticism	3	-
11216212	Principals of Calligraphy and Decoration	3	-
11206319	Introduction to 3-Dimensional Design	3	-
11221103	Ceramics 2	3	11221102
11216457	Graphic Art 3	3	11216355
11206210	The Sociology and Psychology of Design	3	-
11211455	Creative Thinking	3	-
11211435	Sculpture 2	3	11211320
11206259	Metals and Wood 1	3	-
11211356	Arabic Calligraphy	3	-
11206104	Perspective	3	-
11206253	Mosaic	3	-
11211458	Introduction to Art Aducation	3	-
11211458	Materials and Techniques	3	-
11211459	Contemporary Issues in Modern Art	3	-
11211461	Advanced Studies in Aesthetics	3	11211328
1211461	Post-Modernism Art	3	11211351
11206251	Stained Glass	3	-

Course Descriptions

11211101 INTRODUCTION TO THE ARTS

This course aims at introducing students to all four basic arts (visual, musical, theatrical, and architectural), focusing on the basic relations between these arts. Instructors of this course follow two methods in teaching it. The first one is through lectures, discussions and leaflets that introduce different models of international artwork that deal with the sources of the artistic theme, function, materials, style and creation. The second method is appointing an artistic theme for each student at the beginning of the semester on which the student needs to conduct academic research; and at the end of the semester, each student is to verbally present their research and submit a research paper.

11211328 AESTHETICS

This course focuses on the study of aesthetics and the philosophies, trends, and principles used for the appreciation of beauty. In addition, it looks at the relation of aesthetics with other related subjects, starting with the ancient arts and how they viewed aesthetic phenomena, and the Greek philosophers' studies of those phenomena. It also studies the aesthetic relation to the artistic product and nature, also considering the Roman, Christian and Islamic civilizations, and finally looking at the contemporary view of art and aesthetics in the modern intellect.

11201101 INTRODUCTION TO MUSICOLOGY

This introductory course focuses on a variety of topics, including the linguistic and non-linguistic definition of music; the interpretation of the meaning of music as a science, an art, and a language; the types and forms of music; the writing and composing of these different types; forms of musical notes and tones; and their performance in the theater. In addition, this course introduces students to the manner of drawing a clef sign, multi-music scales, intervals among them, intervals among tunes, and different passages. This course focuses also on introducing students of the arts to types of world musical forms such as the opera and symphony and Arabic musical forms such as al-qasida, al-muwashah, and other performing and listening art forms.

11201103 PALESTINIAN FOLK MUSIC

This course studies and investigates Palestinian production of music, the pattern and style of Palestinian folkloric music, and popular music analysis at the vocal and instrumental levels. This course examines the characteristics of

instrumental music and its popular properties. In addition, this course aims at studying the forms and

models of popular and folkloric music. Finally, it looks at the models of popular songs and the musical instruments used to play these songs. It also looks at the types of these music instruments in terms of their production, vocal structure, and ways of performance.

11211329 PALESTINIAN FOLK ART

This course underscores the importance of studying folklore and how this genre inspires popular artists. In addition, this course looks at the processes of glass-blowing, pottery-making, inscription, metal-carving, porcelain, popular embroidery, and the textile, carpet, straw and bamboo industries. Furthermore, this course is an attempt to develop the local folkloric ornamentation unit and folkloric heritage.

11211230 WATER PAINTING AND DRAWING

This course is intended to introduce students to the similarities and contrasts between the ways and methods of old and modern water painting and drawing with regard to the techniques, means, raw materials, and the formation of artwork. In addition, this course provides examples and models of colors such as al-timbra, the colors of Josh, al-jerra watercolor, al-kazaan water color, and Chinese ink.

1121110 ACADEMIC DRAWING 1

The purpose of this course is to visually train students so they are capable of relying on their trained eye to transfer and verify reality, taking into consideration proper proportions and the distribution of elements within the artistic frame. All of this is accomplished through intensive written studies in which students focus on darkness, lightness and the techniques of using pencil, noticing the different levels of vision and the third dimension within the different structural components.

11211103 ACADEMIC DRAWING 2

This course is a continuation of the courses Academic Drawing 1 and 2, and it builds on what was taught in these previous courses. This course focuses on: the structural format of any object, the part-whole and whole-part relation in the formation process, and the connection between the object being formed and the philosophy behind the idea which is responsible for its formation. This must be accomplished analytically for one single subject. Furthermore, this course aims at introducing students to the following drawing techniques: becoming familiar with the technique of using collages for the service of any work of art; employing previously used techniques along with the use of coal and pastel; -exploring new techniques suitable for the work of art at hand;

formulating the visible and visual reality and putting it in new art forms/shapes such as surrealism and engineering; and getting acquainted with the statue of the human body in various postures.

11211204 ACADEMIC DRAWING 3

This course is a continuation of previous courses in academic drawing and it builds on what those courses taught. This course focuses on the formal relationships between all segments in the formation and its relationship with the idea in an analytical perspective for a specific theme, through artistically complete sketches. These practices are applied on the human body, the silent nature and the alive cellular environment, so that students can become capable of molding the visual reality using new artistic formulas.

11211205 ACADEMIC DRAWING 4

This course is designed to introduce students to different visions of new plastic models, and is geared for students to point out the part-whole relationship at the same time to preserve the unity of the work of art and the craftiness of constructive design. In addition, this course trains students to ascertain harmony in constructing and assembling the object in terms of shape and content for the sake of preserving its artistic and comprehensive quality. Furthermore, this course underscores the student's personal vision, primarily his philosophical vision concerning the work of art at hand. Finally, this course trains students to carry out any work of art by relying on different, familiar, and discovered raw materials.

11211106, 7, 8, 9, 10 PAINTING 1, 2, 3, 4, 5

These courses are designed to sharpen students' accuracy of observation, planning and studying elements, both living and non-living, and the detection of aesthetic values in these elements. In addition, these courses are concerned with the multiple uses of these instruments, tools, and raw materials pertinent to painting and the acquisition of technical performance skills relevant to oil colors, raw materials, watercolors and wax colors used in painting. These courses require that students make several visits to local plastic art exhibitions. At the end of each academic semester, an exhibition is held in the department for productions of artwork and photography. These courses are offered every semester.

11211217 ART HISTORY AND APPRECIATION 1

This course is theory-based. It provides a historical study of Middle East ancient arts in the primitive ages during the mandate of the dynasties. It also provides an account of ancient Western arts. In addition, it includes a historical & aesthetic study of Islamic artistic styles, such as the Umayyad, the Abbassi, the Umayyad style in Andalus Spain, the Fatimia, the Suljuki, the Ayyubi, the Mongolian, the Moroccan Spanish, the Mamluki, the Safawi, the Ottoman in Turkey, and Islamic art in India.

11211217 ART HISTORY AND APPRECIATION 2

This course is theory-based. It includes a study of art in the Renaissance Age in Europe and the different schools of art such as classicism, romanticism, surrealism, and realism. In addition, this course provides an adequate account of contemporary art trends in the 20th century.

11211109 THEORY OF COLORS AND ITS APPLICATION 1

These courses introduce students to the theories of colors by the prominent artists of different art schools. In addition, these courses provide a comprehensive study of the nature of colors, their classification and types, the dynamic aspects of colors, the psychological basis and functions, and the influence of colors on the eyes of the spectators. Furthermore, these courses require that students apply some of these

weaving processes to experience the influence of colors and the ways of using these colors in two- or three-dimensional objects.

11211219 THEORY OF COLORS AND ITS APPLICATION 2

These courses introduce students to the theories of colors by the prominent artists of different art schools. In addition, these courses provide a comprehensive study of the nature of colors, their classification and types, the dynamic aspects of colors, the psychological basis and functions, and the influence of colors on the eyes of the spectators. Furthermore, these courses require that students apply some of these weaving processes to experience the influence of colors and the ways of using these colors in two- or three-dimensional objects.

11211320 SCULPTURE 1

This course is designed to introduce students to the concept of sculpture, its nature, content, and types. In addition, this course aims to provide students with the skills necessary to deal with the mass material of three dimensions through modeling out engineering objects and shapes of three dimensions. It also aims at providing students with sculpture-related skills by carrying out some projects modeled out of and derived from objects of old and previous civilizations such as the ancient Egyptians and the Assyrians.

11216211 ART GRAPHICS 1

This course trains students to use pencils of different degrees of intelligibility and to draw with charcoal and Chinese black or white ink. This task is accomplished by having students draw sketches and cracks in order to maintain some harmony between the eye and the hand movements, and by having students draw living and nonliving objects, figuring out their relationship with each other. In addition, this course will have students do basic printing tasks such as printing on zinc aluminum, and lithographic stone. Students will also be called upon to manually implement typing of sketches and crack drawing to produce a number of copies of each sketch.

11211321 OPEN LANDSCAPES I

This course is usually given outside the classroom. Students, along with their instructors, go on outings to explore some selected places in villages or old traditional sites in nature which have aesthetic value. In this course, students will be asked to explore and identify the natural elements and the artistic foundations of any work of art through drawing a variety of objects, employing raw materials, and paying a great deal of attention to these aesthetic values. By the completion of this course, students will have become accustomed to experiencing the aesthetic feeling present in the local environment.

11211122 DESIGN IN GRAPHIC ARTS

This course is theory-based. It deals with art designs, the teaching of design, its elements, and its derived elements, building of designs and the evaluation of works of arts. In addition, there will be practical projects accompany theoretical studies concerning the elements of art design.

11211323 METHODS OF TEACHING ART

This course is theory-based. It examines the role of art in education, the goals of art education, and the nature of artistic work and children's arts and stages of their development. It also looks at the role of the art education teacher in schools, identifies the curricula and the evaluation procedures being used in the past, present art curricula, and the selection and organization of teaching materials. It also looks at the relation of art with other materials, the nature of curricula in elementary and preparatory education, the planning and coordination of art activities and assignments, and the pedagogy being used by art teachers in their classes. Finally, it looks at the role of art teachers in implementing the curricula geared for art education.

11211324 CONTEMPORARY ISLAMIC AND ARAB ART

This course is theory-based. It provides a historical and analytical study of Islamic art as an innovative art. It also provides a study of the characteristics of the Islamic arts its relation with the Islamic faith, and the most important Islamic artistic decorations.

In addition, this study presents models of Islamic artistic styles, Islamic architectural elements, Islamic painting, Islamic applied arts, and contemporary plastic arts in the Arab world. Furthermore, this course provides an account on the most prominent Arab artists and their creative artistic works with an analysis of these artistic works to be displayed on slides. Students who sign up for this course are expected to conduct a research paper on a prominent Arab artist.

11211311 COMPOSITIONAL FORMATION

This course is concerned with the practical applications of certain works of arts in order to ascertain some of the following matters: the elements of

plastic formation, the type of relationship such as harmony or disharmony among certain elements, the clarity of vision and foresight, the issue of formation, planning, movement or motion, the effect of dormant elements in the target objects, and the relationship among all elements concerned with the work of art. In addition, this course introduces student to the concept of compositional formation/ construction of any work of art and its types. It also provides a milestone in paving the way to any work of art.

11211212 PAINTING TECHNIQUES

This course aims at introducing students to the different ways of using color and other techniques in painting in pre-ancient times, during the Middle Ages (primarily in 14th and 15th centuries), during the Renaissance Age in the 16th century, and the Italian and Fleming 17th century period. It also examines the same techniques used in the 18th and 19th century in the paintings of prominent artists.

11211414 THE PALESTINIAN PLASTIC ARTS MOVEMENT

This course is theory-based. First, it investigates the major factors of any artistic work by tracing the history of plastic arts in the Arab world in general, and in Palestine in particular before 1948. Second, it examines also the art movement during the rise of the Palestinian revolution after 1967, which witnessed the initial establishment of a Palestinian plastic movement in the occupied territory. Third, this course identifies prominent artists of the occupied lands and provides an analysis of their artistic accomplishments, the local art exhibition and galleries. Finally, it provides a new perspective of the current and future direction for the Palestinian plastic movement.

11211213 ARTISTIC ANATOMY

This course is theory-based. It is an anatomical study of the human body from an artistic perspective. It also deals with the mechanisms employed for movement by studying the functions of anatomy and the build-up of the internal and external body. It also carries out a comparison between the body of the man and woman and examines the differences in the physical and facial symptoms and expressions from the perspective of artists in different ages & times. This course shall include the drawing of the human skeleton/ anatomy, bones, muscles, & movements.

11211315 MODERN AND CONTEMPORARY ART

The first part of this course deals with the history of art, particularly in the area of plastic, applied, and architectural arts. It also focuses on the most prominent schools and movements of arts and their creators which took place after the Renaissance Age until the first part of 20th century. The second part of this course focuses on plastic, applied, and architectural arts in contemporary times or after the modern art period, and the schools

and movements of arts which are linked and associated with the ideas of modernity and its motives, objectives, and creators.

11211331 RESEARCH METHODOLOGY

In this course, students are introduced to the basics of research in a strictly academic and scientific manner where they are able to solve the problem of the research and learn about the means of collecting data needed for research. Students are also trained on academic and creative writing, plus quoting and paraphrasing quotations in a way that respects intellectual property and expresses a creative, independent personality. This course aims at providing the students with the tools and skills needed for conducting intact research leading to reliable, accumulative data which helps enrich the students' intellectual and skillful experience. A part of the course is dedicated to assigning each student to conduct a research on an artistic theme that interests them, using the foundations of scientific research and documentation.

11211426 GRADUATION RESEARCH PROJECT

This course provides a complete description of the requirements of the Graduation Research Project which students have to fulfill in order to graduate. In this course, each student is required to submit a theoretical research proposal of his graduation project which he/she selects with the approval of his/her supervisor. The focus of this graduation project has to be on a topic of the student's major. A committee will be appointed from the same college to supervise and evaluate the student's research proposal before he/she sets out to finish it up completely.

11211424 GRADUATION PROJECT

This course requires students to prepare a painting project, provided that this project involves the drawing/painting of a complete topic on different boards of different sizes. This course requires that students confer with their instructors on the selection and completion of their painting project.

11211323 FIELD TRAINING

This course is a training course in which students will be asked to apply the knowledge they have acquired in their classes to real life assignments where they have to go to art and printing organizations in order to gain hand-on-experience and training suitable for the type of skills and expertise they have acquired. The purpose of doing this is to prepare students for the tasks ahead of them in real life and to provide them with the opportunity to gain some practice before applying for a real job. All of this has to be done under the guidance and supervision of their instructors. By the end of the training term, students have to turn in a report on the type of work that they have accomplished.

11211351 ACADEMIC DRAWING 5

This course is a continuation of other pertinent courses in academic drawing. It builds on Academic Drawing 4 and thus it is designed to attend to the following matters:

- To ascertain the variations of percentages of the human body while it is in motion through different levels;
- To ascertain the student's personal work during his interaction and dealings with other individuals;
- To ascertain that the student has the opportunity to find harmony in his use of a particular technique to accomplish a particular work of art with high quality;
- To reinforce the student's style, which is based on an idea from which a series of artistic works would be performed and accomplished?

11211325 OPEN LANDSCAPES 2

This course is usually given outside the classroom. Students, along with their instructors, go on to explore some selected places in villages or old traditional sites in nature which have some aesthetic values. In this course, students will be asked to explore and identify the natural elements and the artistic foundations of any work of art by drawing a variety of objects, employing raw materials, and paying a great deal of attention to these aesthetic values. By the completion of this course, students will have become accustomed to experiencing the aesthetic feeling present in the local environment.

11216357 GRAPHIC ART 2

These courses train students to use pencils of different degrees of intelligibility and to draw with charcoal and Chinese black or white ink. This task can be accomplished by having students draw sketches and cracks in order to maintain some harmony between the eye and the hand movements, and by having students draw living and nonliving objects, figuring out their relationship with each other. In addition, these courses will have students do some basic printing tasks such as printing on zinc, aluminum, and lithographic stone. Students will also be called upon to manually implement typing of sketches and crack drawing to produce a number of copies of each sketch or crack.

11211453 DRAWING AND PAINTING VIA COMPUTER

This course focuses on using computer-drawing programs such as Photo Shop and Painter, and on the manner of using them in drawing, coloring, composition and editing of pictures in order to reach the best results in creating artistic work. This course benefits from modern possibilities and artistic effects which these programs provide to come up with the best results in designing artistic work in cases of drawing, water and oil painting, and mosaics.

11221102 CERAMICS 1

This course provides students with the practical skills necessary for the process of manual formation and making of ceramics through compression and rope formation techniques or slide formation techniques. In addition, this

course aims at training students to learn how to firmly stick parts and articles in order to accomplish the required design, with a great emphasis on the characteristics and quality of the clay. It also affords students the opportunity to learn how to deal with problems and acquire the means and ways with which they can preserve their work and follow-up on it on a continual basis. All of this is accomplished through students' carrying out created designs which accomplish all these concepts.

11216318 PHOTOGRAPHY

This course is both a theory-based and practice course. It is designed to give a brief account on the history of photography and its development. It also introduces students to the tools, instruments, artistic and technological preparations employed in photography, developing films, and printing, enlarging, forwarding pictures in black, or white, or color. This course trains students to employ photographic pictures in the service of artwork and different models of graphic designs.

11211454 ART CRITICISM

This course deals with the history and principles of art criticism, a subject which is relied upon for the evaluation and discovery of the aesthetic elements in various works of art. This is accomplished by studying and analyzing an artist's personal views, perspectives, principles and aesthetics and the means to apply them socially.

11216212 THE PRINCIPLES OF CALLIGRAPHY AND DECORATION

This course provides a brief history of the evolution and development of calligraphy and decoration and their leading creators. In addition, this course introduces the rules and principles of calligraphy and decoration, and the tools employed in their application. Furthermore, students will be called upon to apply the knowledge they have acquired, use the necessary tools for the application of some models in Arabic calligraphy and Islamic embellishment, and use such patterns of calligraphy in different models of design.

11206319 INTRODUCTION TO 3-DIMENSIONAL DESIGN

This course acquaints students with three-dimensional design and its artistic components through the implementation of objects and designs of three-dimensions and through working with different types of raw materials necessary for making and forming such objects.

11221103 CERAMICS 2

The purpose of this course is to introduce students to the concept of ornamented decorative sculpture through the completion of creative designs in this particular form or style. In addition, this course aims at introducing students to the mechanics and hands-on techniques for problems-solving which might confront students in their acquisition of knowledge about ceramic works.

11216457 GRAPHIC ART 3

These courses train students to use pencils of different degrees of intelligibility to draw with charcoal and Chinese black or white ink. This task can be accomplished by having students draw sketches and cracks in order to maintain some harmony between the eye and the hand movements, and by having students draw living and non-living objects, figuring out their relationship with each other. In addition, these courses will have students do some basic printing tasks such as printing on zinc, aluminum, and lithographic stone. Students will also be called upon to manually implement typing of sketches and crack drawing to produce a number of copies of each sketch or crack.

11206210 SOCIOLOGY AND PSYCHOLOGY OF DESIGN

This course tackles the consumers' behavioral aspect and its relations to trademarks, buying decisions and promotions in society. It also deals with the mutual relationship between the design and the community and how the former is used to fulfill peoples' needs. The course also looks at psychological impacts the design leaves on people, and how it reflects the designer's creativity.

11211455 CREATIVE THINKING

Creative thinking is the first step towards creation, and in order for one to create something they need to learn how to generate ideas. This course aims at providing students with the skills necessary to motivate their minds to produce creative ideas, as creativity in all its forms is a skill that can be learned, acquired, and practiced. That is done by recognizing the things that hold back creative thinking to double the students' ability to produce creative ideas and be able to recognize the direct and indirect motivations of creative thinking. It also deals with the training and recognition of a group of techniques of creative thinking on an individual and collective level to generate more ideas that meet the needs of students in all departments, including the development of their mental and visual tools on a theoretical and practical level.

11211435 SCULPTURE 2

In this course, students will have the opportunity to learn about co-relief sculpture by carrying out a project on masks modeled or taken from the history of art, and emulating it. After making a negative mold of the work, students will pour into simple molds and copy the original work from gypsum.

11206259 METALS AND WOODS 1

The purpose of this course is to introduce students to the types of metals, the making and doing of innovative designs on different metals (zinc, aluminum, yellow and red copper), and plates. It also acquaints students with the characteristics and properties of these types of metals and techniques of their welding, decoration processes, finishing, polishing, silver, nickel, or cooper coating, coloring processes, oxidization with certain acids, coloring

with fire, or burning. It also teaches and trains students to use tools and instruments necessary in specific workshops. Finally, it teaches students how to draw on wood by heating and making final finishes on boards /paintings by using wood paint.

11211356 ARABIC CALLIGRAPHY

This course examines the types and patterns of Arabic calligraphy in terms of its characteristics & properties, how it is being used and carried out through different historical models, and how it is being applied practically and artfully. Students are expected to produce these different handwriting models after receiving adequate exposure and training.

11206104 PERSPECTIVE

This course provides students with instructions which enable them to draw the perspective for the designing idea relying on untested blueprint procedures. It also provides students with better opportunities to apply certain designs which help students pass the theoretical stage of drawing to become more creative and confident at the assigned tasks. Furthermore, this course aims at nurturing the creative imagination of students which results in developing the artistic appreciation and authentic sensitivity of students to appreciate the values of different designs. Moreover, this course is an opportunity for students to learn all types of vanishing point perspectives*. Finally, this course looks at the merits of teaching students about the drawing of one-dimensional, bi-dimensional, and three-dimensional objects and of other ways to expand the student's understanding. Students will be supplied with a large amount of information to enable them to draw the perspective for the designing idea relying on an elaborate format or script before carrying it out.

- I. vanishing point perspective
- II. vanishing point perspective and at 2 vanishing point
- III. vanishing point perspective

11206253 MOSAIC

This course is a practical course. It is designed to provide a historical study of the mosaic in various ages and times and the ways of its manufacturing. It also aims at introducing and training students to use mosaic tools and raw materials. In this course, students will be asked to carry out some projects in mosaic by using color paper. In addition, students will learn the techniques of using stones, marbles, and other works in mosaic production.

11211357 INTRODUCTION TO ART EDUCATION

This course focuses on the functions of general education courses in terms of the meaning of education, definition, and overall essential role in educating society. In particular, this course focuses on the role of art education and its

influence on the individual and society. Furthermore, this course takes up the Greek and Roman perspectives concerning the role of art education and its impact on the individual and society, as well as contemporary theories of art education.

11211458 TECHNIQUES & RAW MATERIALS

This is a theory-oriented course. It aims at introducing students to the study of the mechanics and techniques involved in the production of an artwork whose structure and formation is blended with raw materials used in modern artworks, such as wood, clothes, cardboards and containers of carton, news papers, old magazines, metal boards, wires, and clay threads.

11211459 MODERN ISSUES IN CONTEMPORARY ART

This course deals with modern artistic, social and philosophical issues and how to address these issues within the techniques of modern art. In addition, students study how creative artists handle modern issues and how their works.

11211460 ADVANCED STUDIES IN AESTHETICS

This course is a continuation of other courses on aesthetics and thus it builds upon the foundation of other previous courses in this area. It is designed to tackle more specialized subjects such as the theory of art criticism and aesthetics, the contemporary aesthetic philosophy such as intuitiveness, existentialism, and symbolism, in addition other important aesthetic theories such as the reactionary, psychological, and formation theories. There is also a study of comparative aesthetics.

11211461 POST-MODERN ART

In continuation of the course on Modern and Contemporary Art, this course aims at introducing students to the philosophies of the post-modern school through exposing them to the experiences of local and international artists and discussing their works. Then, each student is to design an art project which goes with the vision and concepts of post-modern arts.

11206251 STAINED GLASS

This course is a practical course. It is a study of glass in terms of its types, ways of cutting it, the types of glass colors, and the ways and techniques of using colors in glass. In addition, this course deals with the techniques of stained glass with lead, copper, and jasper.

Staff Members

Lecturers		
Name	University of graduation	Year of graduation
Mohammad Abu-Sitah	M.A in oil Painting, College of Fine Arts, Alexandria, Egypt.	1979
Lina Harb Hmeidan	B.A An-Najah University M.A Yarmouk University	2002 2009
Kamal Zeidan	B.A., Yarmouk University M.A., University of Tulsa	1993 2007
Teaching assistant		
Bassam Abu Hayat	University of Damascus	1989
Ahmad Al-Haj Hamad	University of Damascus	1989
Esmat Al-Asa'ad	An-Najah University	2001
Raghdah Abu Zaytoun	An-Najah National University	
Lab Supervisor		
Rawan Bishtawi	An-Najah university	2001

{ Graphic Design Program }

The Program's Vision and Mission:

- This program is concerned with qualifying specialized staff of efficient designers on both the academic and practical levels to supply the local and international markets in the fields of advertising and creating trademarks.
- It is also concerned with enabling students to plan and implement comprehensive promotional campaigns in different fields through traditional and new media means.

Program Goals:

The program aims to graduate highly efficient students in their field, who are able to meet the local and international market demand in the field of advertising by supplying the students with the necessary skills.

The goals of the program are the following:

1. Integrating between the commercial and promotional demands of companies, people, and the needs of the local and international markets.
2. Creating awareness of the technological and computerized tools necessary for design and printing.

Specialization Requirements:

- Applicants' high school GPA (grade point average) should be 65% and above;
- Prospective applicants should pass the Placement Test of the Department of **Graphic Design**.

Study requirements to obtain a Bachelor's degree in the Department of Applied Arts:

The Department of Graphic Design offers a unique specialization in Graphic Design which culminates in the awarding of a B.A. in this major. Interested applicants for a B.A. in this specialization should complete 121 credit hours, including university requirements and electives, college requirements and electives, and department requirements.

Learning Outcomes for Graphic Design Upon graduation, students will be:

1. Dedicated to their Department and alma mater.
2. Strongly and artistically educated in applied arts.
3. Endowed with the basic artistic skills in the fields related to aesthetics and functions.
4. Able to use the necessary artistic jargon in applied arts criticism.
5. Aware of the history of applied arts and the ancient and contemporary artistic pat-

terns in the field of graphic design.

6. Aware of the importance of the relationship between aesthetics and functions in applied arts.
7. Qualified to enter the workforce and to compete in it using modern telecommunications.
8. Able to solve any problems in their field in a creative way.
9. Able to contact Arab and international institutions related to applied arts.

Plan for the Graphic Design Program

University Compulsory Courses

The student has to pass all these courses for a sum of 18 credit hours.

Course #	Course Name	Credit	Prerequisite
11000101	Islamic Culture	3	None
11000105	Palestinian Studies	3	None
11000102	Arabic Language	3	None
11000103	English Language 1	3	Pass the level exam or English 100
11000325	English Language 2	3	10103
11000117	Leadership and Communication Skills	1	None
11000108	Community Service	1	None
11000127	Introduction to Computer Science	1	None

The Study Plan for the Graphic Design Program (121 C.H)
Compulsory Courses (91 Credit Hours)

Course #	Course Title	Credit Hour	Prerequisite
11206151	Rules of Two-Dimensional Design	3	
11206208	Theories of Design and Its Methodologies	3	
11206253	<i>Mosaic</i>	3	
11206316	Decor & Carpentry Factories	3	
11206319	Introduction to Three-Dimensional Design	3	
11206352	Models and Anthropomorphic Shapes	3	
11211103	Academic Drawing (2)	3	11211102
11216354	Computer Graphics 4	3	11216213
11216355	Art Graphics 2	3	11216211
11216356	Animated Pictures in Computer	3	
11216457	Art Graphics 3	3	11216355
11216458	Advanced Graphic Design	3	

Course #	Course Title	Credit Hour	Prerequisite
11201101	Introduction to Musicology	2	
11201103	Palestinian Folkloric Music	2	
11206210	The Sociology of Design & Its Psychology	3	
11211101	Introduction to Art	2	
11211102	Academic Drawing 1	3	
11211109	Theory of Colors & Its Applications 1	3	
11211116	Art History and Appreciation 1	3	
11211219	Theory of Colors & Its Applications 2	3	11211109
11211324	Contemporary Islamic & Arab Art	3	
11211328	Aesthetics	3	
11211329	Palestinian Folkloric Arts	2	
11211331	Methodologies of Scientific Research	2	
11216101	Principles of Design	3	
11216102	Typography	3	
11216103	Graphic Design 1	3	
11216104	Computer Graphics 1	3	
11216105	Advertisement Theory 1	3	
11216206	Graphic Design 2	3	11216103
11216207	Principles of Inscription & Printing	3	
11216208	Computer Graphics 2	3	11216104
11216209	History of Graphic Design	3	
11216210	Graphic Design 3	3	11216206
11216211	Art Graphics I	3	11211102
11216212	Principles of Calligraphy & Decoration	3	
11216213	Computer Graphics 3	3	11216208
11216314	Advertisement Theory 2	3	11216105
11216315	Pre-printing	3	
11216316	Graphic Design 4	3	11216210
11216317	Graphic Design 5	3	11216316
11216318	Photographic	3	
11216319	Graduation Research Project (Graphic Design)	1	11216316
11216320	Field Training	2	
11216421	Graduation Project (Graphic Design)	3	11216319

Elective Courses (12 Credit Hours)

Course #	Course Title	C.H	Prerequisites
11206151	Rules of Two-Dimensional Design	3	-
11206208	Theories of Design and its Methodology	3	-
11206253	Mosaic	3	-
11206316	Décor and Carpentry Factories	3	-
11206319	Introduction to Three-Dimensional Design	3	-
11206352	Models and Anthropomorphic Shapes	3	-
11211103	Academic Drawing 2	3	11211102
11216354	Computer Graphic 4	3	11216213
11216355	Graphic Art 2	3	11216211
11216356	Animated Pictures in Computers	3	-
11216457	Graphic Art 3	3	11216355
11216458	Advanced Study in Graphic Design	3	-

Course Description

11211101 INTRODUCTION TO ART

This course introduces students to four main arts (visual, musical, theatrical and architectural) and the focus is on the main relations between those arts. Chosen models of global artistic works are presented in this course and studied thoroughly.

11211328 AESTHETICS

This course focuses on the study of aesthetics and the philosophies, trends, and principles used for the appreciation of beauty. In addition, it looks at the relation of aesthetics with other related objects. Furthermore, this course investigates the multi-faceted concepts of aesthetics, its forms and content, beauty and ugliness.

11201101 INTRODUCTION TO MUSICOLOGY

This course includes the definitions of music and its different interpretations at different levels. It also introduces the students to how to draw a clef sign, multi-music scales, intervals among them and different passages. The course also introduces students to world music, such as symphonies and operas and different types of Arab music as well.

11201103 PALESTINIAN FOLKLORIC MUSIC

This course studies the Palestinian production of music and the pattern and style of this music. It also includes an analysis of folkloric music at the vocal and instrumental levels. It examines the characteristic of instrumental music and its popular properties.

11211329 PALESTINIAN FOLKLORIC ARTS

This course underscores the importance of studying folklore and how this genre inspires popular artists. This course also looks at the processes of glass-blowing, pottery-making, textile industry, etc.

11216102 TYPOGRAPHY

This course is concerned with the aesthetic elements of the Arabic and English letters/orthographies in terms of their relation, types, and functions. Students are expected to draw models of design of these letters in order to learn how to create logos. In addition, this course is intended to teach students to consider the thoughts and concepts of expressionism in expressing plastic art.

11216103 GRAPHIC DESIGN 1

This course is concerned with the collective beauty or the aesthetic perception of the symbol of letters, which can function as a logo for a particular corporation or institution. It is also a priority that students learn innovative and creative ways and mechanisms in graphic designs such as the drawing of logos, registered commercial brands, correspondence papers, identification cards, honors certificates, postal stamps, books and magazine folders, and their publications.

11216104 COMPUTER GRAPHICS 1

This course is designed to develop and sharpen students' skills in computer use and application of design by introducing students to the following software programs and their applications: Adobe Illustrator, Adobe Photo Shop, Quark Express. Students have to apply the knowledge acquired from their exposure to the aforementioned software programs to projects which require the application of computer design.

11216105 ADVERTISEMENT THEORY I

This is a theory-based course. It is an introductory course in advertisement which is designed to introduce students to its inception, definition, development, and fundamentals. In addition, it aims at introducing students to the various media of advertising and their differences. It is also concerned about integrity, respect for intellectual property through copyright law, the code of ethics for careers, the impact and influence of advertisement on economic development, the formation and welfare of communities, advertisement agencies and their hierarchical organization and the work of their departments.

11216208 COMPUTER GRAPHICS 2

This course focuses on the expressive aspect of optical illustration by having students rely on the application of the following computer programs: Illustration painter, Maya, 3 D Max

11211109 THEORY OF COLORS AND ITS APPLICATION

This course is concerned with theories of colors and the artists and art schools they represent. It also provides a comprehensive study of these colors in terms of: their types, classifications, dynamism, their relation and function, and their influence on the eyes of the spectators. This course is also concerned with students' application of these different colors to two/three-dimensional objects, and the basis of the psychological influence of these colors on the students' artistic ability.

11216101 GRAPHIC DESIGN PRINCIPLES

This course introduces the principles of design and its elements (like color, font, area, and mass) and how to deal with two-dimensional shapes and the fields of their applications.

11211331 SCIENTIFIC RESEARCH METHODOLOGY

This course aims to orient students to the tools of scientific research, along with developing skills to qualify the student to be professionally prepared according to the correct scientific standards, as an introduction to implementing the graduation project.

11216318 PHOTOGRAPHY

This course is both a theory-based and a practical course. It is designed to give a brief account of the history of photography and its development. It also introduces students to the tools, instruments, artistic and technological preparations employed in photographing, developing films, and printing, enlarging, forwarding pictures in black and white or color. This course trains students to employ photographic pictures in the service of artwork and different models of graphic designs.

11216206 GRAPHIC DESIGN 2

This course deals with issues of contemporary design and the specific type of designs for factories and business corporations. In addition, this course addresses the ways of dealing with photographic pictures and using them as effectively as possible in graphic designs, canning, product wrapping paper, advertisement, lighted advertisement, and shipping vehicles.

11216207 PRINCIPLES OF INSCRIPTION AND PRINTING

This course is both a practical and theory-based course. It provides students with a brief history of the art of inscription and printing in terms of its core foundations, principles, tools and instruments, and its raw materials. In addition, this course highlights the major stages of development and evolution of the art of printing and looks at various printing techniques and their practical applications by the use and employment of woods, zinc, and aluminum (manually or by machine).

11216213 COMPUTER GRAPHICS 3

This course is designed to develop the concepts and skills necessary for website design. In addition, this course is concerned about teaching and developing students' skills in HTML. Furthermore, this course is concerned about providing a historical account of the inception of the Internet as a new medium of communication.

Moreover, this course is designed to provide students with the rules and principles of developing their skills for the preparation of programs by employing motion/animated pictures and voice with the following programs:

- Macromedia Free hand MX 2004
- Macromedia Dream Weaver MX 2004
- Macro media Fire Work MX 2004

11206210 THE SOCIOLOGY OF DESIGN AND ITS PSYCHOLOGY

This course examines the interchangeable relation between society and design. In addition, this course looks at how design can be used not only to serve the needs of man but how it also has a psychological effect on the artist's creativity.

11211324 ISLAMIC AND ARABIC CONTEMPORARY ART

This course provides a historical and analytical study of Islamic art as an innovative art while focusing on the connection between the artistic product and the philosophy inspired by religion.

11216210 GRAPHIC DESIGN 3

This course is designed to study the different aspects of advertisement campaigns which target various aspects of our life, primarily economic outlooks. It introduces students to different models of distinctive graphic designs for sale advertisements and posters by conducting field campaigns or work and finishing up by formulating a satisfying impression/perception about the advertisement business outlook.

11216314 THEORY OF ADVERTISEMENT 2

This course is theory-based. It is primarily concerned with the following issues: advertisement studies, advertisement of arts, the real purpose of advertisement, the administrative organization of commercial advertisement, and the code of ethics which regulates and governs commercial advertisement. In addition, this course looks at individual property protection laws and the intellectual framework of advertisement, the advertisement campaign and its planning, goals and objectives, market research, consumers, products, and analysis of market research. Finally, this course traces the history of advertisement in Palestine and other Arab countries and the importance of mass media such as radio and T.V. in educating and enlightening the masses and the future of advertisement in Palestine. It also looks at advertisement as a professional career.

11216315 PRE-PRINTING

This course is theory-based. It is concerned with the process of printing in terms of its literature, tools and instruments, and techniques, for the preparation and production of any artwork. In addition, this course includes the following techniques and technologies for the purpose of accomplishing the following tasks:

The ability to sort out colors, classify the type of papers, figure out prices, and take measurements. Furthermore, this course introduces students to other important things for the purpose of preparing students for printing tasks awaiting them, such as knowing the types of ink and their use, and the making and developing of films.

11216209 HISTORY OF GRAPHIC DESIGN

This course is concerned with the art of graphic design in terms of its birth, inception, and development through various ages until its evolution as a full-fledged and autonomous major with its own distinctive characteristics and rules. In addition, this course traces the historical development and evolution of graphic design and its role and relation with economic, political, cultural, art, physical education, and environmental aspects of life. Furthermore, this course introduces students to the methods and techniques for the arrangement of printed materials and the adopted designs used in advertisement and campaigns.

11216320 FIELD TRAINING

This is a training course in which students will be asked to apply the knowledge they have acquired in their classes to real life assignments where they have to go to art and printing organizations in order to gain hand-on experience and training suitable for the type of skills and expertise they have acquired. The purpose of this is to prepare students for the tasks ahead of them in real life and to provide them with an opportunity to gain some practice before applying for a real job. All of this has to be done under the guidance and supervision of their instructors. Students have to turn in a report of work which they have accomplished by the end of the training term.

11216319 GRADUATION PROJECT RESEARCH (GRAPHIC DESIGN)

This course is concerned with students' graduation projects. Students will be asked to prepare and submit a theoretical research project for graduation under the guidance and supervision of their supervising instructors, and it aims to employ the scientific research skills students acquired in this project.

11216317 GRAPHIC DESIGN 5

This course focuses on computer-assisted graphic design, in which students draw on computer application to learn the art of design. In addition, students draw on advanced programs such as Apple Macintosh and IBM to learn and make graphic designs. Students also have to use photography in order to creatively reproduce certain art designs for commercial and advertisement purposes and uses. Such accomplishments can be used to satisfy part of the graduation project requirements.

11216421 GRADUATION PROJECT 5

In the graduation project, students take on most of the responsibility in the planning of the advertisement campaigns of full preparation of market research and consumer, and setting plans and strategies based on previous research and budgets allocated to implement propaganda campaigns based on the findings of research in integrated marketing strategies, which include creative ideas and innovative operational tools.

11211219 THEORY OF COLORS AND ITS APPLICATION (I+II)

This course is concerned with theories of colors and the artists and art schools they represent. It also provides a comprehensive study of these colors in terms of their types, classifications, dynamism, their relation and function, and their influence on the eyes of the spectators. This course is also concerned with students' application of these different colors to two/three-dimensional objects, and the basis of the psychological influence of these colors on students' artistic ability.

11211116 ART HISTORY & APPRECIATION 1

This course is theory-based. It provides a historical study of ancient Middle Eastern arts in the primitive ages during the mandate of the dynasties. It also provides an account of ancient Western arts. In addition, it includes a historical & aesthetic study of Islamic artistic styles such as the Umayyad, the Abbassi, the Umayyad style in Andalus Spain, the Fatimia, the Suljuki, the Ayyubi, the Mongolian, the Moroccan Spanish, the Mamluki, the Safawi, the Ottomans in Turkey, and Islamic art in India.

11216211 GRAPHIC ARTS 1

This course introduces and trains students on the speed art using the black ink, so as to link the hand movement with the naked eye to strengthen students' eyes on following up with the guidelines set up to different forms. It also focuses on the analysis of different visual constructions, the steganography and modulation methods, training students on the use of some techniques in the application that are based on the black ink; such as the Chinese fountain pen, and Flowmaster (and making use of the of silent nature elements), with the enhancement of the students' personal style during the process of analysis and implementation, and training them on printing process and the its stages, in particular the relief printing, the most important ores, methods of drilling, the stages the artistic printed work go through in the process of relief printing, and the characteristics of printed copies.

11211102 ACADEMIC DRAWING 1

This course aims at teaching and training students to acquire the following competencies: to rely on visual and optical facts to depict reality as it manifests itself with an accurate style; to maintain and synchronize movement among the eye, the hand, and the tools or instrument being used to accomplish the assigned task, which entails students ascertaining the percentages and proportions of the objects they are working on; to ascertain the accuracy of distributing the elements within the bounds and framework of the work of art; to adhere and stick firmly to writing scripts/studies; to double-check the shadowy and lighted elements/areas in the objects they are drawing; to ascertain the technicality of using single-point lead pencils; to ascertain the accuracy of the third-dimensional objects within the different structural

formation and the level of sight; to understand the nature of the raw material, its texture, and its pointed direction. In this course, students will be given a series of activities as homework assignments in order to make sure that they have a good grasp and understanding of the concepts they have taken previously.

11216212 PRINCIPLES OF CALLIGRAPHY & DECORATION

This course provides a brief history of the evolution and development of calligraphy and decoration and their leading creators. In addition, this course introduces the rules and principles of calligraphy and decoration and the tools employed in their application. Furthermore, students will be called upon to apply the knowledge they have acquired and use the tools necessary for the application of models in Arabic calligraphy and Islamic embellishment. They will also learn how to use such patterns of calligraphy in different models of design.

11206319 INTRODUCTION TO THREE-DIMENSIONAL DESIGN

This course introduces students to the ways in which they can experience and feel third-dimensional works/objects and other artistic forms by carrying out models of three-dimensional objects and using various types of necessary raw materials.

11206151 RULES OF TWO-DIMENSIONAL DESIGN

This course aims at introducing students to the fundamental principles of second-dimensional design and developing their understanding of such models in terms of components, tools and instruments, and influences by laying out fundamental principles such as color, measurement, the effect, line, and texture, etc.

This course is also concerned with the type of artwork that students are likely to produce as a result of their being exposed to such a literature of principles of design.

This is a practical course. It is designed to teach students many objectives, namely: the principles and fundamentals of architectural drawing; the methods of geometrical projections; and the how-to be of drawing and making sketches, elevations, and architectural sections through the drawing of sketches and models for a small house. In addition, students will have the opportunity to learn the various symbols and marks of raw materials and the means of showing them in projections, elevations, and sections which have to be drawn in addition to showing the types of lines, scale of measurements and drawing, measurement lines. Finally, students should learn how to prepare geometric boards/elevations and arrange them.

11206208 THEORIES OF DESIGN & ITS METHODOLOGY

This course is theory-based. It is designed to introduce the concept of design and the historical stages that it has undergone and to trace its old and modern theories.

In addition, this course provides a study of the traditional, contemporary, and modern methodologies of design and their overall influences. Furthermore, this course provides an account of the influences of minor systems in the development and expansion of methodologies and their potentialities. Moreover, this course is concerned with minor systems which describe the type of relationship between man and machine and the ways to improve such level of relation

11206316 DECOR AND CARPENTRY FACTORIES

This course introduces students to the machinery, tools, instruments, and different raw materials such as wood, metals, etc., used in factories in order to train students to use them to produce different and useful models

11216354 COMPUTER GRAPHIC FOR PRACTICE

This course is designed to help students focus and develop some skills for the preparation of programs which depend on dealing with the users of Interactive

Design by developing and enhancing their necessary skills for the design and development of different programs and online websites by relying on different programs

11216355 Graphic Arts 2
This course is a continuation to what students studied earlier in Graphic Arts 1, with the deepening of the analytical aspect for visuals, developing students personal style during the analytical process which depends on Realism on the one hand, and Steganography and art of modulation for other models of the cellular and silent nature, taking into account the foundations of the good design, training and providing students with new practical skills such as: the styles of (one direction style, hatching, the random drawing and etc.), as well as the enhancement of the students' artistic process and experience, to assure flexibility and fluency, develop the criteria of the art work and its principles, in order to start the implementation of any other projects.

This course aims to provide students with the new skills and techniques in printing, for example, rotogravure, especially the one which is implemented on raw materials (sheet iron, zinc and copper), with the focus on the executive techniques (sharp needle, etc.).

11216457 GRAPHIC ARTS 3

This course trains students to use pencils of different degrees of intelligibility to draw with charcoal and Chinese black or white ink. This task can be accomplished by having students draw sketches and crocks in order to maintain some harmony between the eye and the hand movements, and by having students draw living and non-living objects, figuring out their relationship with each other. In addition, this course will have students do basic printing

tasks such as: printing on zinc and aluminum and printing on lithographic stone. Students will also be called upon to manually implement typing of sketches and crock drawing to produce a number of copies of each sketch.

11206253 MOSAIC

The course talks about the study of mosaic in different ages and the methods of its industry. Then, students will practice using mosaic tools and materials and making their own mosaics projects using colored paper, stones and marble.

11206352 MODELS AND ANTHROPOMORPHIC SHAPES

This course includes introducing the student to how models and shapes are made using different materials (wood, carton, etc.) and to apply this knowledge practically. This includes both interior and exterior designs.

11216356 ANIMATED PICTURES IN COMPUTER

This course is both theory-based and practical. It is designed to study various methods of creating an optical illusion for motion and being able to grasp its overall interpretation. In addition, this course aims at showing students the art of caricature, the fundamental principles of animated/motion pictures in films and 2-D cartoons, and the way to transform a series of drawings showing motion into a computer-assisted film.

11211103 ACADEMIC DRAWING 2

This course aims at teaching and training students to follow the following procedures in carrying out their drawing: relying on optical/visual facts to depict reality as it manifests itself with accuracy; maintaining accuracy in the distribution of elements within the space and general framework with some consideration to the rules/ foundations of forming a piece of artwork; carrying out different drawing/writing models with different goals and objectives to ascertain their influence; understanding the importance of degree variations of different colors in the objects which have to be drawn and their relation to the proximity with other objects; dealing with other models with different textures and features such as clothes, metals, glass, in order to ascertain the distinctive features and properties of the raw material and its relation with void areas; using a variety of raw materials in carrying out certain drawing such as coal, Chinese ink, and water colors, and becoming aware of the artistic properties and features of these colors; focusing on the human body or part of it through drawing a partial statue with or without the head and becoming knowledgeable about such models and drawing of the head and body of the human skeleton.

11216458 ADVANCED STUDY IN GRAPHIC DESIGN

This course is designed to teach and train students to conduct a free, creative and innovative study of selective projects relying on the rules and concepts that students have learned during their study of different courses in this major.

DEPARTMENT STAFF:

Assistant Professor:	
Hasan Inairat	Fine Arts: Interior Design, Kharkiv State Academy of Design and Art, Ukraine, 2005
Mirvat Mohemad Aiash	Ph.D. in Islamic Art- Ornaments, Cairo University, Egypt, 2007
Instructors:	
Mohammed Salameh	MBA-Change & Innovation (Brand & Design Management) IAE – Graduate School of Management Université Paul Cézanne, Aix-Marseille III Aix-en-Provence- France 2010 Graphic Design, Al-Petra University, Amman, Jordan.
Sami Isawi	B.A. Advertisement, Delhi University, India 1994
Ahmed Al. Haj Hamad	Graphics: Inscription, University of Damascus, Syria 1989

{ Ceramic Art Program }

Program vision:

The Ceramic Art program aims to have graduates able to develop ceramic art through modern techniques and contribute to the enrichment of the plastic arts movement. The program seeks to provide the field with Palestinian artists who take it upon themselves to develop Palestinian plastic art globally. It achieves this vision by focusing on the global specialization and on continuously-developed expertise and facilities.

Mission:

This program aims to graduate students with a high effectiveness in the field of visual arts, who are able to conduct artistic (and technical) routes through interconnected networks of theoretical courses dealing with historical, intellectual, aesthetic and creative aspects, methods of aesthetic criticism, and practical skills in the techniques of drawing, composition, construction, ceramic wall sculpture, grilling and settlement methods, and glass paints. Students will benefit from the facilities and modern technology in the Ceramic Arts Department, which also hosts artists for exhibitions and workshops.

General Objectives:

The Ceramic Arts Department aims to provide new specialties and higher degrees, prepare cadres that are specialized for the service of the plastic arts movement, and place students within the context of the international plastic arts movement. The Program's objectives are as follows:

1. Preparing an intellectual student - artistically, aesthetically, and creatively - with high plastic skills in the areas of sculpture, ceramics, and contemporary art techniques.
2. Supply the Palestinian plastic art movement with artists who participate in enriching the Palestinian plastic movement.
3. Raising the level of artistic appreciation in the local community by holding exhibitions, and workshops.
4. Following-up with international artistic techniques and the modern art vision by hosting international artists to share their expertise and interact with them.
5. Raising the local aesthetic level of the visual environment (Public Art).
6. Developing the ceramic artifacts so that they keep up with the aesthetic contemporary appreciation.

The Outcomes of the Ceramic Art Program:

The Ceramic Art Department aims to graduate students who exhibit the following characteristics:

1. Affiliation to their Department, Faculty and University.
2. Educated in the aesthetic plastic culture that is derived from the basics of artwork and theories of aesthetics.
3. Qualified with creative plastic artistic skills, specifically, in the fields of ceramics,

sculpture, in the two- and three-dimensional works.

4. Having their own personal method in self-expression in visual plastic art.
5. Able to employ the plastic visual language in the aesthetic criticism.
6. Familiarity with the history of art and plastic visual movements over history.
7. Aware of the importance of the ceramic arts in the development of the society and defending its cases.
8. Capable of creative thinking.
9. Active in spreading awareness and care in their society and environment through the creative visual arts.
10. Active in adding beauty and aesthetics to the visual arts in their society and environment.
11. Capable of employing modern technologies in the visual arts in their society and environment.
12. Capable of communicating with Arab and international visual artistic institutions of interest in the field of ceramics.

The New Curriculum for Ceramics Program:

The University Compulsory Requirements:

Students must pass all of the requirements in this group:

Course No.	Course Title	Credit hrs.
10032100	Remedial English	0
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English Language 1	3
11000323	English Language 2	3
11000105	Palestinian Studies	3
11000117	Leadership and Communication Skills	3
11000108	Community Service	3
11000127	Introduction to Computer Science	3

The Curriculum for Ceramic Art: 124 Credit Hours.

The Department Compulsory Requirements: 94 Credit Hours.

Course #.	Course Title	Credit.	Prerequisites
11211101	Introduction to Art	2	-
11211328	Aesthetics	3	
11201101	Introduction to Music Education	2	-
11201103	Palestinian Folkloric Music	2	-
11211329	Palestinian Popular Art	2	-
11211207	Painting 2	3	11211106
11211356	Arabic Calligraphy	3	-
11211102	Academic Drawing 1	3	-
11211103	Academic Drawing 2	3	11211102
11221102	Ceramics 1	3	-
11221103	Ceramics 2	3	11221102
11221204	Ceramics 3	3	11221103
11221205	Ceramics 4	3	11221204
11221306	Ceramics 5	3	11221205
11211320	Sculpture 1	3	-
11211435	Sculpture 2	3	11211320
11211116	History and Appreciation of Art 1	3	-
11211109	Theory of Colors and Its Applications 1	3	-
11211106	Painting 2		11211102
11211323	Methods of Teaching Art	3	-
11221307	Ceramics and Mould- Formation	3	-
11221208	Islamic Ceramics	3	-
11211324	Contemporary Islamic and Arab Art	3	-
11211213	Artistic Anatomy	3	11211102
11206319	Introduction to Three-Dimensional Design	3	-
11221413	Ceramic Wall Sculpture	3	-
11221314	Methods of Decoration on Ceramics	3	-
11221101	Ceramics: Raw Materials and Technicalities	3	-
11221209	History of Pottery	3	-
11221310	Advanced Studies in Ceramics	3	-
11211331	Scientific Research Methodologies	2	-
11221411	Graduation Project Research (Ceramics)	1	11221205
11221415	Graduation Project (Ceramics)	3	11221411
11221312	Field Training	2	11211323

Department Elective Requirements: 12 Credit Hours

Course #.	Course Title	Credit	Prerequisites
11211204	Academic Drawing 3	3	11211103
11211205	Academic Drawing 4	3	11211204
11211217	History and Appreciation of Art 2	3	11211116
11211454	Art Criticism	3	-
11211414	Palestinian Plastic Art Movement	3	-
11206259	Metals and Woods 1	3	-
11211458	Raw Materials and Technicalities	3	-
11211459	Contemporary Issues in Modern Art	3	-
11211460	Advanced Studies in Aesthetics	3	11211328
11206151	Principles of Second-Dimension Design	3	-
11216207	Principles of Inscription and Printing	3	-
11221352	Sculpture and Mould-Formation	3	-
11221453	Advanced Studies in Sculpture	3	11221351
11221351	Sculpture 3	3	11211435
11211455	Creative Thinking	3	-
11211219	Theory of Colors and Its Applications 2	3	11211109
11211315	Contemporary and Modern Art	3	11211217
11216212	Principles of Calligraphy and Decoration	3	-
11211311	Compositional Formation	3	11211102
11206253	Mosaic	3	-
11211230	Water Painting and Drawing	3	11211106

Course Description

11211101 INTRODUCTION TO ART

The purpose of this course is to introduce students to the major types of arts (visual, theatrical and architectural). Concentration will be given to the fundamental relationship among these types/forms of arts. The instructor follows two approaches to accomplish the objective of this course. The first approach consists of giving lectures, setting up group discussions, issuing materials on selected models of artwork illustrating its original source, its function, its substance, and its formation. The second approach focuses on selecting and assigning a particular subject of art to each student at the beginning of each semester to research. Students will write a research paper on this topic, to be turned in to the instructor, and they will also deliver a lecture on their topic.

11211328 AESTHETICS

This course focuses on the study of aesthetics, philosophies, trends, and principles, beginning with the relationship of ancient art with aesthetic phenomenon. The course will begin with the Greek philosophers to study the aesthetic phenomenon and its relationship to the artistic product, and this product's relationship with nature. Students will also look at the Roman, Islamic and Christian civilizations, as well as the contemporary view of art and beauty in modern thinking.

11201101 INTRODUCTION TO MUSIC EDUCATION

This course defines music linguistically and morally and interprets the meanings of music as an art, science and language; it also looks at different divisions and musical forms, teaches the writing of these forms on the musical scale, the how-to's of drawing the key, the various musical scales and their dimensions, and how to space music between tones and different stanzas. Students are also introduced to the international musical moulds, such as symphonies and operas, and/ the Arabic moulds, such as poems, muwashshahs, al-dawr, and sama'i.

11201103 PALESTINIAN FOLKLORIC MUSIC

This course studies and investigates Palestinian music production, the pattern and style of Palestinian folkloric music, and popular music analysis at the vocal and instrumental levels. This course examines the characteristics of instrumental music and its popular properties. In addition, this course aims

at studying the forms and models of popular/folkloric music. Finally, it looks at the models of popular songs and the musical instruments used to play these songs. It also looks at the types of these music instruments in terms of their production, vocal structure, and ways of performance.

11211329 PALESTINIAN POPULAR ART

This course is a study of the importance of popular art (anecdotes and materials), the popular art crafts, glass industry, pottery, textiles, minerals, carpets, ceramics, thatch, bamboos, embroidery, the evolution of the Palestinian people's decorative style, and attempts to develop popular heritage. The course also focuses on the possibility of employing the terms of the popular heritage in modern and contemporary art.

11211207 PAINTING 2

Continuing with Painting 1, this course focuses on the various textures of raw materials, presenting them in coexistence with elements of different formations and floors. In addition, there is a focus on the types of leftover elements and their appropriate color paintings distinctively commensurate with the nature of the topic and the elements to be expressed through the configurations of silent nature.

11211356 ARABIC CALLIGRAPHY

This course examines the types and patterns of Arabic Calligraphy in terms of its characteristics and properties. The teacher focuses on Naskh and Ruq'ah scripts, through practical analysis of the form of the letter and its reference, with the help of scholars and materials in writing, providing the trainee with the skills to access professional levels in these scripts.

11211102 ACADEMIC DRAWING 1

This course is designed to train students visually so as to rely on the trained eye to maintain some sort of balance of percentage in their painting/drawing of objects; distributing the target elements fairly and squarely within the bounds of the planned and designated framework of artwork; double-checking the existence of both the shadowy and lighted areas; selecting and using single-point lead pencils; and making sure that there is a third-dimension included in the formation of different objects.

11211103 ACADEMIC DRAWING 2

This course aims to build on what students have studied in Academic Drawing 1, with a concentration on distributing elements within the space and general framework with some consideration to the rules/foundations of forming a piece of artwork. There is an emphasis on understanding the importance of degree variations of different colors in the objects which have to be drawn, and their relation with the level of proximity to other objects. Students use a variety of raw materials in carrying out certain drawing such as coal, Chinese

ink, water colors, and become aware of the artistic properties and features of these colors.

11221102 CERAMICS 1

This course provides students with the practical skills necessary for the process of manual formation/making of ceramics through compression and rope formation techniques or slide formation techniques. In addition, this course aims at training students how to firmly stick parts and articles in order to accomplish the required design, with a great emphasis on the characteristics and quality of clay. It also gives students the opportunity to learn how to deal with problems and acquire the means and ways with which they can preserve their work and follow up with it on a continual basis. All of this will be accomplished by students carrying out created designs which accomplish all these concepts.

11221103 CERAMICS 2

In continuation with Ceramics 1, the purpose of this course is to introduce students to the concept of ornamented/decorative sculpture through the completion of creative designs in this particular form or style. In addition, this course aims at introducing students to the mechanics and hands-on techniques for problem solving, which might confront students in their acquisition of knowledge about ceramic works. In addition, this course introduces students to the ways of emptying out or undoing of carried out works in this way.

11221204 CERAMICS 3

In continuation with Ceramics 2, this course is designed to help students acquire the necessary formation skills on the electrical wheel and the stages by which this work is usually carried out, and the ability to implement creative designs by employing this method. In addition, this course is likely to reinforce students' understanding of these concepts and the skills which have been taught in previous courses, such as visible and deep drilling.

11221205 CERAMICS 4

In continuation with the acquired skills in Ceramics 1, 2, and 3, this is a practical course. It aims at introducing students to the concept of glass coating, its structures, installation, and components. It also aims at teaching students about the chemistry of ceramics in the installation of glass coating and application of different experiments using colored oxide color in order to verify theoretical information. In addition, it provides students with skills of glass-making or glazing, such as sprinkling and diving or immersing, etc. Finally, this course aims at introducing students to the ways of dealing with the colors of under glaze.

11221306 CERAMICS 5

In continuation with the acquired skills in Ceramics (1, 2, 3, 4), this course aims at enabling students to prepare clay for ceramics, exposing students to the different stages which this type of pottery clay undergoes and how it can be molded and reformed. This course gives students the opportunity not only to conduct some experiments and field studies and bring samples of sand, but also to carry out creative ceramic projects relying on the experience which the student has acquired from previous courses.

11211320 SCULPTURE 1

This course is designed to introduce students to the concept of sculpture, its nature, content, and types. In addition, this course aims to provide students with the skills necessary to deal with the mass material of three dimensions through modeling out engineering objects and shapes of three dimensions. It also aims at providing students with sculpture-related skills by carrying out some projects modeled out of and derived from objects of ancient civilizations, such as the Ancient Egyptians and Assyrians.

11211435 SCULPTURE 2

In continuation with what students have studied in Sculpture 1, in this course, students will have the opportunity to learn about co-relief sculpture by carrying out projects on masks modeled or taken from historical art and emulating them, in addition to pouring into simple molds and copying the original work from gypsum after making negative molds of the original works.

11211116 HISTORY AND APPRECIATION OF ART 1

This course is a historical study of the Ancient Eastern and Western world arts and the ancient man's arts, looking at the Egyptians, the Canaanites, the Mesopotamians, the Far East, the Greeks, and the Romans, as well as other ancient civilizations' arts.

11211109 THEORY OF COLORS AND ITS APPLICATIONS

This course aims to introduce the concept of colors, their nature, classifications, characteristics, and theories (such as Chevreul, Munsell, Ezolt, and Newton); mixing pigment colors and light rays on the one hand, and on the other, applying what they have studied in theory in classroom and home projects, to strengthen the skill of using colors and controlling the tools used in their implementation.

11211106 PAINTING 1

This course is designed to provide students with the necessary skills to deal with raw oil color materials and acrylics, taking into account the proper use

of these materials with regards to color purity, and mixing them properly to make various color degrees to promote the concept of the near and far, diminution, and the shadowy and lighted colors. The course focuses on the correct use of the painting brush (rigger), with note to its impact on the roof in a system consisting of the silent nature configurations.

11211323 METHODS OF TEACHING ART

This course is a continuation of Introduction to Art Education, with a focus on the role of the teacher in the process of teaching methods and technical modalities in the implementation of the classrooms lessons, the concept and type of study plans, the characteristics of the successful classroom lesson based on private and public technical goals, and the importance of teaching aids in enriching the teaching process, in addition to how to assess and evaluate the skills implemented by students.

11221307 CERAMICS AND MOULD-FORMATION

This course is concerned with introducing students to the benefits and merits of using moulds in ceramics on the basis that it saves a great deal of time and effort, and it allows the artist to obtain several accurate and precise copies of the same mould with its distinct properties. This can be done through the implementation of the sample of clay pottery and pouring the gypsum into the mould in order to obtain the negative copy, and then preparing the clay solution and pouring it into a mould to obtain the original copy or model.

11221208 ISLAMIC CERAMICS

This course aims at introducing students to the role of Islamic civilization in the development and evolution of the art of ceramics on account of its being an old and applied art. This course profiles the pioneering works of the Muslim artist through his creative innovation of the concept of ceramics with shiny metal. It also provides a display of models and samples illustrating the Islamic role in promoting and developing this type of art.

11211324 CONTEMPORARY ISLAMIC AND ARAB ART

This course is designed to provide a historical and analytical study of Islamic art as an innovative art, with a focus on the link between the art product and philosophy from religion and culture, the most important Islamic painting schools, the leading Muslim figures in this field, with the focus on Al-Wasiti and Behzad. Islamic architecture will be discussed in terms of its elements, types, and different styles, with a focus on applied Islamic arts and the extent of Islamic art's impact on modern Western art.

11211213 ARTISTIC ANATOMY

This course is an anatomical study of the human body and the internal and external anatomical functions of bones, muscles, and the body in all of its movements and details in consistency and movement; in addition

to determining these anatomical and perspective points, considering the different angles of body movements, on the one hand, and physiological changes on the other. Students are introduced to writing exercises and shading to highlight the body in order to enable them to draw the body properly in different modes and movements, even if the design is from their imagination.

11206319 INTRODUCTION TO THREE-DIMENSIONAL DESIGN

This course introduces students to three-dimensional design - how to envision three-dimensional works, its artistic components and elements, and how to design three-dimensional objects. Students work with different and necessary raw materials for the accomplishment of these goals.

11221413 CERAMIC WALL SCULPTURE

This course aims at introducing students to the nature of ceramic wall sculpture by making students prepare wall designs and wall decorative carving projects. The students will make use of the technicalities, skills and concepts acquired in previous courses. Students will also learn how to prepare glass-coating and do glazing works.

11221314 DECORATION METHODS ON CERAMICS

This course aims at introducing students to the history of decoration and its origins throughout the different civilizations, and to the concept of the decorative unit and its ability to find innovative technical formations. This course also seeks to give students the skills to enable them to transfer the decorative units to pottery works and to be able to do carving works transparently and explicitly, taking into account the specificity of the raw material and its external decorative suitability. In addition, this course offers students the opportunity to utilize computer technology in the creation and formation of innovatively decorative designs.

11221101 CERAMICS: RAW MATERIALS AND TECHNICALITIES

This course aims at introducing students to the concept of ceramics, the stages of its production and formation, the characteristics of clay which can be modeled into various shapes and forms, and the stages necessary for its preparation. In addition, this course is designed to introduce students to the various ways of clay formation and the problems faced by the potter during his making of pottery. Furthermore, it introduces students to the types of glass-coating and the methods of glazing.

11221209 HISTORY OF POTTERY

This course is a historical study of the industry of pottery starting from the Canaanite age until modern times, looking at the civilizations inhabiting this region. In addition, this course focuses on studying the most pervasive and prominent components, designs, and decorations of these civilizations in this region. Furthermore, this course concentrates on producing research on

the profession or craft of pottery-making and the people overseeing it, on account of its being an art form and a traditional and popular craft.

11221310 ADVANCED STUDIES IN CERAMICS

This course is a practical course. It is designed to provide students the opportunity to do decorative works as final projects with a great deal of sophistication and advanced-level, drawing on the experiences which the students have gone through in this field. In this course, students will have an opportunity to be prepared for the work of the graduation project. Furthermore, this course is designed to ascertain students' ability and experience to be utilized properly and effectively.

11211331 SCIENTIFIC RESEARCH METHODOLOGIES

The course is designed to introduce students to the principles and methods of scientific research in an academic and scientific style, where they can find the research problem, and then use research methods for finding the necessary information, practicing academic and creative writing methods, quoting, and redrafting, so that they respect the others' thoughts and copyrights and thus become self-creative and distinguished individuals. In addition, the course aims to provide students with the necessary tools and skills for scientific research, based on building a sound approach leading to cumulative and reliable information, to assist them in enriching their cognitive and skills expertise. Part of the course is allocated to assigning every student research in one of the aspects of arts of interest, using the procedures in documentation and scientific research.

11221411 GRADUATION RESEARCH PROJECT RESEARCH (CERAMICS)

In continuation with what students studied in Scientific Research Methodologies, this course focuses on training and preparing students for the final graduation project, and that is done by choosing the research subject and philosophy, preparing the research (to enable students to start on the graduation project directly at the beginning of the next semester), and bringing students in this course to the final stage of configuration, size and techniques in the studies students want to implement in their projects.

11221415 GRADUATION PROJECT

This course aims to employ all that students have acquired in the previous ceramics and sculpture courses in designing and implementing a graduation project on which students are judged for having the needed skills to graduate.

11221312 FIELD TRAINING

This course enables students to deal with the market in the art of ceramics with the tools to marketing works of art. Students are placed in an institution, specialized art workshops, or in primary and elementary schools, where they will share their skills and benefit from dealing with the community and

market; they will also contribute to the implementation of practical projects and proposals. Students may take this course after they have successfully finished 90 credit hours. The number of training hours must not be less than 200 and must be taken during the summer semester without any other courses. In the case of the regular semester, students should sign up for no less than 11 hours, distributed over 2 or 3 days.

11211204 ACADEMIC DRAWING 3

This course is a continuation of previous courses in Academic Drawing 1 and 2, with the focus on the structural format of any object, the whole-part and part-whole relationship in the formation process, and the connection between the object being formed and the philosophy behind its formation, through complete and quick artistic sketches. These practices are carried out on the human body, silent nature, and living nature, so that students graduate with high abilities in drafting the new technical and visual formats.

11211205 ACADEMIC DRAWING 4

This course is a continuation of previous courses in Academic Drawing 1, 2, and 3, and it focuses on training students on forming the human body in different positions, with an emphasis on the percentage and its relationship to the surroundings and daily life activities, using various materials and innovative techniques with emphasis on students' self-vision (the philosophical dimension) toward their art works. Students are assigned to do intensive sketches for life work and manual activities which show the human body in different positions.

11211217 HISTORY AND APPRECIATION OF ART 2

This course studies the Medieval, Renaissance, Baroque, Rococo, and Classical periods, and goes back to Romanticism and Naturalism for the arts of painting, sculpture and architecture.

11211454 ART CRITICISM

This course is designed to illustrate the concepts of art criticism, which are summarized into work assessment or looking into artists' psychological interactions, including the nature of relationship between the artwork, the recipient and critic role. The course puts them all together into an art template. In addition, the course addresses different cases and issues related to the arts and representing different types of art, academic, objective, and self criticism, showing and discussing a collection of articles related to plastic art for Arab writers and critics, through which students get to know the problems of Arab plastic art criticism, its conditions and its location in the world art. The course also critically studies one of the artworks, or addresses an artistic case and reproduces it in the form of a perfect art article.

11211414 PALESTINIAN PLASTIC ART MOVEMENT

This course aims to teach the four factors that affect the Palestinian plastic arts, such as ancient arts in Palestinian, Christian, Islamic, and popular art, and their impact on Palestinian artists' performance, demonstrating the impact of political incidents and their reflection on the methods of expressionism in Palestine. The student will look at the arts in the stages before 1948 and until 1967, and to the creation of the Palestinian Authority and its impact on the arts, including the divisions that contributed in the variety of Palestinian artists' styles regarding their geographical existence - such as the Palestinian artists' methods in occupied Palestine, the West Bank, Gaza Strip, the Arab world and the Diaspora, or the emergence of poster art as an art of resistance distinguishing Palestinian artists from other artists, according to the political influences.

11206259 METALS AND WOODS 1

This course is designed to introduce students to the different metals, making creative designs and attempting to form and implement them on these metals in particular: zinc, aluminum, yellow and red brass, and sheet iron. Students study these metals, the ways of welding, decoration operations, finishing; polishing and painting with silver, nickel, or brass; coloring and oxidation operations with the use of certain acids; coloring with fire burning; training on using the tools and learning correct ways to use inside the workshop; and giving students an idea of drawing with heat on woods and the final finishing on the board with the use of wood paints.

11211458 RAW MATERIALS AND TECHNICALITIES

This course is designed to study and illustrate the technicalities and materials (photography technology), to come up with artwork that is full of local materials which go along with today, such as wood, masonite, types of fabrics, pieces of cartoons, old newspapers and magazines, metal boards, ropes, wires, clay, etc.

11211459 CONTEMPORARY ISSUES IN MODERN ART

This course addresses artistic, social, and philosophical contemporary issues, and how to deal with these issues within the methods of modern art, with a study on how creative artists deal with contemporary issues and how these issues affect each artist's work. (Theoretical Course)

11211460 ADVANCED STUDY IN AESTHETICS

In continuation to what students studied in the Aesthetics course, this course shall deal with more specialized topics, such as the theories of aesthetic art criticism, philosophy of contemporary beauty, and the intuitional, existential and symbolic tendencies, in addition to the theories of aesthetics, such as the emotional, psychological, formalistic theories, and topics in compared aesthetics.

11206151 PRINCIPLES OF SECOND DIMENSION DESIGN

This course provides students with the basic principles in second-dimension design, enhancing the understanding of the nature of design, its elements,

mechanism and impact through the presentation of the principles of basic designs - such as color, measurement, rhythm, line, texture, etc., and the extent of influence in the humanitarian reaction of design and format.

11216207 PRINCIPLES OF INSCRIPTION AND PRINTING

This course introduces a summary of the history of the art of printing and inscription, studying the principles, basics, materials and raw materials of printing and inscriptions, and the stages of development; studying the different printing technicalities with practical applications and using linoleum and others manually and silk printing mechanically, offset printing; and using a series of practical, inscriptional and field work practices.

11221352 SCULPTURE AND MOULD FORMATION

This course aims to introduce students to the types of simple and partitioned moulds and the distinctive characteristics of each one of the ways of its production, through the execution and accomplishment of sculptural works and through the pouring into moulds by using different raw materials such as gabsine, paint, and cement - in addition to knowing the partition of a mould for a specific raw material and its characteristics.

11221453 ADVANCED STUDIES IN SCULPTURE

This course enables students to deal with masses and voids through the implementation of sculptural designs of their own that take into account abstract patterns providing basic characteristics of complete sculptural design; and employing the element of texture in giving the design its special art force.

11221351 SCULPTURE 3

In continuation with what students studied in Sculpture 1 and 2, students will be asked to do some designs of the human body through performing complete sculptural projects of human body parts, such as the head and body motion, going through the various steps necessary for sculptural works. It also provides students with the opportunity to acquire the skills necessary for making and modeling out partitions of sculptural molds from gypsum.

11211455 CREATIVE THINKING

Creative thinking is the first step toward innovation, and to learn how to innovate, we need to know how to generate thoughts. Hence, this course aims to provide students with the skills necessary for producing creative ideas, as creativity in all its aspects is a collection of skills that can be learned and acquired. Students will practice these skills by identifying the obstacles that hinder creative thinking, doubling students' abilities to produce creative ideas, and identifying with creativity motivations (both direct and indirect ones), as well as practicing and identifying a series of creative thinking technicalities on the individual and group levels, in order to generate ideas that go along with the needs of each department's students, which includes advancing the tools of mental and visual thinking on the practical and theoretical levels.

11211219 THEORY OF COLORS AND ITS APPLICATIONS 2

This course aims to confirm all the information and skills for the prerequisite of Theory of Colors and Its Applications 1, which depends on the construction and analysis of colors within a specific technique, to come up with a vision of innovative color schemes through the use of various means to produce a certain work of art that shows particular color schemes with artistic technical values.

11211315 CONTEMPORARY AND MODERN ART

This course includes a study of the reasons of the emergence of modern art, presents the main art schools and art movements and their disciples and artists, and studies their methods through presenting their works; studying them from the beginnings of impressionism and the subsequent schools until the emergence of post-modernist schools.

11216212 PRINCIPLES OF CALLIGRAPHY AND DECORATION

This course is a summary of the history of calligraphy and decoration, and their evolution and important creators/inventors. The course introduces the rules of calligraphy and decoration, their principles, and the tools used in implementation; this is done by carrying out practical applications in the fields of Arabic calligraphy and Islamic decoration, as well as methods of implementation in the field of design.

11211311 COMPOSITIONAL FORMATION

This course covers the practical applications to confirm the concepts of compositional formation, linkages (including harmony, antagonism, health vision, construction, management, movement, the rhythm of powers underlying in bodies) and the relationship of the elements with one another, which is based on the following artistic principles: the concept and types of construction, the vision, and the golden ratio across ages.

11211230 DRAWING AND WATER PAINTING

This course aims to teach the techniques of water drawing. Students will identify the different means of expression and use a variety of painting tools, such as the paintbrush and its techniques, the blotting paper on surfaces that go along with the nature of the war materials, and will take into account the appropriate care for the specialty and transparency of water colors. The course addresses different topics of the silent nature and the natural landscapes.

11206253 MOSAIC

This course includes the study of mosaics through different ages, the modalities for its industry, and training on using the tools and raw materials of mosaics; students will implement mosaics of their own, using colored paper, stones and marble.

Teaching Staff

Instructor	
Name	University of Graduation
Kamal Zeydan	The University of Tulsa, Oklahoma, USA.
Leena Humedan	Yarmouk University
Mohammad Abu Satteh	Faculty of Fine Arts, Alexandria University
Research and Studies Coordinator	
Name	University of Graduation
Bassam Abu Al-Hayyat	University of Damascus
Ismat Al-Asaad	An-Najah National University
Ahmad Al-Haj Hamad	Damascus University
Laboratory Supervisor	
Name	University of Graduation
Rawan Bishtawi	Faculty of Information Technology, An-Najah National University.

{The Curriculum for Musicology}

The Department of Musicology offers a unique specialization in Musicology and awards interested students a B.A. in this major. All students who want to obtain their Bachelor's in this specialization should complete 123 credit hours, including the University compulsory requirements and the Department's compulsory and elective requirements.

The Program Vision and Mission:

The Department of Musicology in the Faculty of Arts aspires to become a pioneering department among Palestinian universities and faculties, for it offers a uniquely high-quality music education in musicology, and provides local and civil institutions with qualified cadres in the fields of musicology, which enables graduates to enhance and improve the desired cultural and leading role. The Department preserves the Palestinian musical legacy and the Islamic and Arabic culture, as it also works to spread awareness and international musical culture, stimulates students to do research in the fields of music, and encourages them to achieve scientific and musical developments, which leads to improve the community and aids in spreading the musical knowledge in all its aspects, taking into account the promotion of national affiliation.

The Department pursues the earnest and diligent quest to improve the quality of education, encourage students to create and excel in music, spread the sophisticated art of music, and fill the country's needs of qualified cadres and human resources to teach music, not through the educational process, but through a comprehensive vision toward qualitative development in various areas of music.

General Objectives:

The Department of Musicology seeks to continuously expand its specializations, preparing qualified cadres to serve the local community using modern teaching methods. The general objectives are:

1. Encouraging students to excel and create.
2. Spreading awareness and musical culture.
3. Providing students with the skills to play musical instruments.
4. Providing students with skills and knowledge in musical education and the basic musical theories.

The ILOs:

The program seeks aims to graduate students who are:

1. Able to employ the musical vocabulary needed for musical criticism.
2. Able to employ the modern techniques in the field of music.
3. Educated students who are acquainted and familiar with the fields of arts.
4. Capable of spreading awareness and musical culture in their community and envi-

ronment.

5. Qualified to enter the labor market and establish musical bands and choirs, as well as acquire the basic skills in musical production.
6. Capable of communicating with Arab and international institutions of interest in the fields of musicology.
7. Qualified to teach courses in musical education for all levels.
8. Able of following-up with the updates in the fields of musical education and musical performance.
9. Equipped with the basic musical skills in Arabic and Western music in the aspects of arts and aesthetics.
10. Aware of the history of music and its development from ancient civilizations to modern music.

The New Curriculum for the Department of Musicology

The University Compulsory Requirements:

Students must pass all of these courses (18 credit hours):

Course No.	Course Title	Credit Hours
10032100	Remedial English	0
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English Language 1	3
11000323	English Language 2	3
11000105	Palestinian Studies	3
11000117	Leadership and Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1

The New Study Plan for the Musicology Program, 122 credit hours.

The Department Compulsory Requirements (92 credit hours):

Course No.	Course Title	Credit hrs.	Prerequisites
11201101	Introduction to Musicology	2	-
11201102	Introduction to Music Education	3	-
11201103	Palestinian Music Folklore	2	-
11201107	Solfege and Rhythm 1	3	-
11201112	Piano 1	1	-
11201104	History and Appreciation of Music 1	3	-
11201105	Music History and Appreciation 2	3	11201104
11201106	World Music Rules	3	-
11201108	Solfege and Rhythm 2	3	11201107
11201113	Piano 2	1	11201112
11201123	World and Arab Musical Instruments	3	-
11211328	Aesthetics	3	-
11201209	Solfege and Rhythm 3	3	11201108
11201214	Piano 3	1	11201113
11201215	Specialty Instrument 1	3	-
11201221	Harmony 1	3	-
11201231	Free Instrument	3	-
11211101	Introduction to Arts	2	-
11201210	Solfege and Rhythm 4	3	11201209
11201216	Specialty Instrument 2	3	11201215
11201222	Harmony 2	3	11201221
11201228	Computer Musical Techniques 1	3	-
11201317	Specialty Instrument 3	3	11201216
11201329	Techniques in Sound Engineering and Modern Music Distribution	3	11201228
11201311	Oriental Solfege	3	11201320
11201324	Western Music Analysis	3	11201221
11211331	Methodologies of Scientific Research	2	-
11201318	Specialty Instrument 4	3	11201317
11201320	Arabic Music Rules	3	-
11201325	Methods of Teaching Music and Field Training 1	3	-
11201326	Muwashahat 1	3	-
11201419	School Chants and Songs	3	-
11201427	Graduation Project	3	-
11201430	Arabic Music Composing Rules	3	-

Department Elective Courses (12 credit hours):

Course No.	Course Title	Credit hrs.	Prerequisites
11201455	Music Improvising Techniques	3	-
11201256	Counter Point	3	-
11201357	History of Islamic and Arabic Music	3	-
11201458	Analysis of Oriental Music	3	-
11201360	Ensemble 3	3	11201353
11201461	Muwashahat 2	3	11201326
11201462	Harmony 3	3	11201222
11201363	Computer Musical Techniques 2	3	11201228
11201459	Specialty Instrument 5	3	11201318
11201451	Methods of Teaching Music and Field Training 2	3	11201325
11201353	Ensemble 2	3	11201352
11201352	Ensemble 1	3	-
11201254	Methods of Developing Singing Voice	3	-

Course Descriptions:

11201101 INTRODUCTION TO MUSICOLOGY (ART OF ELOCUTION):

This introductory course focuses on a variety of topics, including the linguistic and non-linguistic definition of music, the interpretation of the meaning of music as science, art, and language, the types and forms of music, the writing and composing of these different types, forms of musical notes and tones, and their performance on theater. In addition, this course introduces students to the manner of drawing a clef sign, multi-music scales, intervals among them, intervals among tunes, and different passages. This course also focuses on introducing students of the arts to types of world musical forms such as the opera and symphony, and Arab musical forms such as Al-qasida, al-muwashah, and other performing and listening art forms.

11201102 INTRODUCTION TO MUSIC EDUCATION:

This course focuses on introducing students to the role of music in education through different historical periods of time, regarding the meaning of music education, its goals, and its influence on the physical, psychological, mental, and social state of affairs of the individual. In addition, this course underscores the merits and values of music and takes up some contemporary theories of music education, particularly the ones which pertain to Kудay, Carl Orff, and Dal Kruz.

11201103 PALESTINIAN MUSIC FOLKLORE:

This course studies and investigates Palestinian music production, the pattern and style of Palestinian folkloric music, and popular music analysis at the vocal and instrumental levels. This course examines the characteristics of instrumental music and its popular properties. In addition, this course aims at studying the forms and models of popular/folkloric music. Finally, it looks at the models of popular songs and the musical instruments used to play these songs. It also looks at the types of these music instruments in terms of their production, vocal structure, and ways of performance.

11211101 INTRODUCTION TO ART:

The purpose of this course is to introduce students to the three major types of arts (visual, theatrical, and architectural). Concentration will be given to the fundamental relationship among these three types/forms of arts. The instructor follows two approaches to accomplish the objective of this course. The first approach consists of giving lectures, setting up group discussions,

issuing materials on selected models of artwork that illustrate its original source, its function, its substance, its style, and its formation. The second approach focuses on selecting and assigning a particular subject in the arts to each student at the beginning of each semester. Students will conduct research and deliver a lecture on their topic, as well as submit a hard copy to the instructor at the end of the course.

11201104 MUSIC HISTORY AND APPRECIATION 1:

This course is a study of the history of music from early music times until the end of the classical period. This course provides students with the opportunity to learn extensively about the development of music and the musicians who have had great influence on this development. In addition, this course focuses on the most accomplished works on music during the same period. Furthermore, students will have the opportunity to become acquainted with musical forms and schools, and their overall impact on the development of music as a science and as an art.

11201105 MUSIC HISTORY AND APPRECIATION 2:

This course traces the history of music since the inception of the Romantic period, to the various music schools which appeared in the beginning of the 20th century, and finally up to and the contemporary classical music. Furthermore, this course provides students with the opportunity to learn about the development of music and the musicians who have great influence on this development, along with the major musical publications in the same period. And finally students will become acquainted with musical forms and musical schools.

11201106 WORLD MUSIC RULES:

This course is an investigation of the fundamentals of music and its theories, musical tunes and their names, music clefs and their types, music signs and their forms, music intervals, music courses, marks of transformation, music scales and their types, rhythm and meters, the speed of tunes and their phonetic terms, signs of abbreviation, reiteration, and legato, signs of staccato, signs of embellishment, and signs of performance method.

11201320 ARABIC MUSIC RULES:

This course aims at introducing students to Arabic music scales such as al-maqamat and their genres and structure. This course is also a study of Arabic meters and Arabic instrumental and singing forms.

11201107 SOLFEGE AND RHYTHM 1:

This course aims at introducing students to the theoretical and practical foundations for the development of their hearing and rhythmic abilities. It also aims at introducing students to the various rhythmic forms in the simple and compound music scales. Students have to do some exercises on singing

Solfège. They will be also asked to read music notes and perform some simple and compound music forms.

11201108 SOLFÈGE AND RHYTHM 2:

This course aims at introducing students to various rhythmic forms in brief and compound periods of time. Students will also do some singing exercises in various rhythmic forms. They will also engage in performing different rhythmic forms in simple scales by using some tools and instruments in order to acquire competence in rhythmic sense. Furthermore, students will have the opportunity to learn how to distinguish harmonious and disharmonious types of music pieces when it is played out.

11201209 SOLFÈGE AND RHYTHM 3:

This course provides students with some training and exercises in reading, writing, and composing of music along with dictation. In addition, students also learn the types of music clefs and their melodies and rhyming. This course surveys the exceptions in the time intervals of simple and compound meters. It also aims at enhancing and maximizing students' instant reading abilities

11201210 SOLFÈGE AND RHYTHM 4: T

This course provides students with advanced exercises and training in reading, writing, and dictation in music in terms of rhythm and melody. It also introduces students to the internal partitions of a music note and helps student to distinguish the trio form of music notes or music composition and its types and to be able to recognize diacophony songs.

11201311 ORIENTAL SOLFÈGE:

This course involves the performance of several melodic exercises in which a number of Arabic rhythmic maqams will be used. These include rast, nahawand, bayati, siga, huzam, suznak, saba, al-kurd, and al-Hijaz.

11201112 PIANO 1:

This course aims to provide students with the skill of playing the piano, the correct posture- playing, exercises with both hands, playing some musical scales, and short and simple pieces of the world musical heritage.

11201113 PIANO 2:

This course is designed to provide students with the skill of playing the piano by mastering the techniques of musical expression,, playing new scales as well as broken compositions, and cross hands by playing some musical pieces of the world heritage.

11201214 PIANO 3:

This course aims to provide students with the skill of playing the piano and basic skills such as syncopation, legato, staccato, etc.

11201215 SPECIALTY INSTRUMENT 1:

This course addresses the principles of playing instruments chosen by the student.

11201216 SPECIALTY INSTRUMENT 2:

This course is a practice course in which students have the opportunity to practice playing on musical instruments to acquire some competence. This course is designed to teach students the methods of acquiring the technical training necessary to play simple music pieces on musical instruments.

11201317 SPECIALTY INSTRUMENT 3:

This course is designed to provide students with a more technical training on musical instruments so that students can play different pieces of musical forms on various musical instruments.

11201318 SPECIALTY INSTRUMENT 4:

This course is a continuation of previous courses in this field, in which students have to learn and acquire technical training and playing techniques. Students are expected to play full music pieces on the musical instrument which he/she desires.

11201221 HARMONY 1:

This course deals with the science of sound/voice harmony. It investigates the theoretical and practical characteristics of musical chords as a science which is concerned with the composition of tones. In this course, students will be introduced to the structure and types of musical chords and how musical melodies are formed into multiple sounds in a harmonious way among themselves.

11201222 HARMONY 2:

This course is a study of the composition of tones and chords. It is about teaching students how musical melodies are formed into multiple sounds in a harmonious way among themselves. It also introduces students to the study of melodies which sound odd or disharmonious with other tones and melodies.

11201123 ARAB AND WORLD MUSICAL INSTRUMENTS:

This course is a study of orchestral and classical Arab instruments in terms of their types (wind, string, reed, and percussion), their texture, vocal range, characteristics, techniques of using them and their role in Arab orchestra and bands.

11201325 METHODS OF TEACHING MUSIC AND FIELD TRAINING 1:

This course includes theoretical and practical methods for teaching music in elementary and secondary schools, with a focus on teaching music to students in the first grades, as well as the most important methods of education so as

to improve the students' educational and learning capabilities. Furthermore, the course includes field training for students with follow-up from the course instructor. There are 60 practical hours in this course, and the rest are theoretical.

11201419 SCHOOL CHANTS AND SONGS:

This course aims to introduce students to school chants and songs, by training them on playing, singing, and methods of teaching songs and chants in schools.

11201324 WESTERN MUSIC ANALYSIS:

This course analyses various musical forms and then moves to carry out a meticulous dissection of music pieces in terms of melody and its kinds, rhythm, meters, and expressive characteristics; the analysis of simple duet form and simple trio form; compound duet form and compound trio form. The course ends with a look at musical variations and sonata forms.

11201430 ARABIC MUSIC COMPOSING RULES:

In this course, students study the theories of international music composition, starting with the construction of melodic cell, and continuing with the making of harmony and transformation, short and long tempo, the similarity in the melody, rhythm, counterpoint, and the accompanying organum. Students learn how to tie up such knowledge with the idea of making new forms of musical composition, such as chanting melodies and the simple music of taqtuqa.

11201326 MUWASHAHAT 1:

This course introduces students to an art genre and music melodies called 'Al-Muwashahat,' in terms of its composition, forms, and development. In addition, students will study and learn its singing and they are expected to memorize twenty simple mushahat in different rhythmic and Maqamat.

11201228 COMPUTER MUSICAL TECHNIQUES 1:

Students learn how to use music software, through which they can learn many skills, such as software music notation, building new melodic patterns that accompany the original melody, distributing melodies on different musical instruments in accordance with the nature of the instruments, providing students with general knowledge of the MIDI with a quick review on the its delivery.

11201329 TECHNIQUES IN SOUND ENGINEERING AND MODERN MUSIC DISTRIBUTION:

This course aims to provide students with some skills and sound engineering tools in terms of sound recording, sound and wav editing, sound mixing, and a general review of the tools and programmes of modern musical distribution (digital audio workstation), and daw software.

11201427 GRADUATION PROJECT:

This course is concerned with the requirements and completion of students' graduation projects. It states that a student has to coordinate with the instructor of the course about the assignment he/she will take up, provided that the student carry out and perform his project in the most important Arabic music form such as almuwashah, dawr, song, audible, and small pieces of modern music. The time length of this project should not exceed 30 minutes.

11201231 FREE INSTRUMENT:

This course trains students on how to play a musical instrument that is not the specialty instrument, where he/she can learn new techniques in playing this new instrument.

11211328 AESTHETICS:

This course focuses on the study of aesthetics and the philosophies, trends, and principles used in the appreciation of beauty. In addition, it looks at the relation of aesthetics with other related subjects. Furthermore, this course investigates the multi-faceted concepts of aesthetics, its forms and content, beauty and ugliness. This course focuses also on the meaning of tragedy and comedy in art.

11211331 METHODOLOGIES OF SCIENTIFIC RESEARCH:

This course introduces students to the principles and methodologies of scientific research in an academic and accurate scientific style, where students can find a research problem and study all the necessary tools to select the information with regard to the subject of the research. Students also are trained on the methods of academic and creative writing styles, documentation, citation, and drafting, where they can respect others' rights of intellectual property, and constitute a creative and distinguished character. The course also aims to provide students with the tools and skills that aid them in conducting a healthy approach to research that leads to accurate and honest facts, enriches the students' cognitive and psychomotor experiences, and allocates a part of the process to giving students specific areas of study that attract their interest to conduct research on, following the scientific research and documentation policy.

11201455 MUSIC IMPROVISING TECHNIQUES:

This course is designed to help students learn how to compose musical sentences promptly and instantly through the completion of a finite sentence, performing a particular subject on a musical instrument, and creating harmonious music compositions for a particular known melody. In addition, this course underscores the idea of sharpening and improving students' technical skills through impromptu playing in accord with various music rhythms.

11201256 COUNTER POINT:

This course introduces students to the science of multi-sound articulation, and trains students to acquire the principles of composing strict polyphony such as ‘canon,’ two melodic sounds, two-band fuge and organum.

11201357 HISTORY OF ARAB AND ISLAMIC MUSIC:

This course traces the history of music during Al-Jahilia period or the pre-Islamic era until this time. It highlights and underscores the most visible symbols of Arab music and various rhythmic forms, primarily Al-muwashah, (post-classical forms of Arab poetry), Al-taqtuqa, Al-qasida, poems, etc. It will also point out the most outstanding publication of Arab music that appeared in the Umayyad and Abbassid periods, and their influence on the evolution and development of music in the West.

11201458 ANALYSIS OF ORIENTAL MUSIC:

This course deals with the forms of composing Arabic music in terms of its composition and formation. In addition, this course aims at improving and maximizing students’ abilities in following-up on construction forms of this Arabic composition of music through exposure to the written and audible script of different music forms.

11201352 ENSEMBLE 1:

This course introduces students to the types of small musical bands such as duets, trios, quartets, and quintets. In addition, this course introduces students to chamber bands and affords them the opportunity to participate in such chamber bands.

11201353 ENSEMBLE 2:

This course introduces students to the types of small chorales such as duets, trios, quartet form, etc. In addition, students will be introduced to chambers choirs/chorals where students have to perform and practice playing with these chorals.

11201360 ENSEMBLE 3:

In this course students have to perform some classic Arab music pieces, where they perform some electric and Arabic singing forms.

11201461 MUWASHAHAT 2:

In this course students will have the opportunity to memorize some Muwashahat, Adwar, Taqatiq, and monologues in a variety of Maqamat forms. In addition, students have to learn to perform a rehearsal of no less than 15 pieces of muwashahat.

11201462 HARMONY 3:

This course includes drills and training exercises for students to use Maqamats in harmonic and diatonic form. In addition, it provides students with training exercises in unfamiliar melodies.

11201363 COMPUTER MUSICAL TECHNIQUES 2:

This course introduces students to the principles of the sequencer through specialized programmes, and it also provides an overview on how to build certain melodic forms for different musical instruments (strings and percussion).

11201459 SPECIALTY INSTRUMENT 5:

This course uses some music pieces to measure students' abilities in performance; it uses such music pieces to measure students' sense of expression and articulation. In addition, it includes some music pieces whose purpose is to train and develop students' performance skills in general, in addition to giving students five musical pieces with different tempo and forms.

11201451 METHODS OF TEACHING MUSIC AND FIELD TRAINING 2:

This course includes theoretical and practical aids with regard to the teaching styles of music for the elementary and secondary schools, with a concentration on teaching kids music in the first grades, as well as teaching them the most important teaching methods, and improving students' educational and learning capacities. The course includes a programme of field training in the schools of the Ministry of Education under the supervision of the course instructor and the school teacher, in the amount of 60 credit practical hours; the rest are theoretical. Students may enroll in this course after they have successfully completed 90 credit hours.

11201254 METHODS OF DEVELOPING SINGING VOICE:

This course highlights on the methods conducted in developing the singing voice and recognizing the human voice in terms of its characteristics and musical properties; improving the articulation system, and the ability to control the breath during singing. This is all through rehearsals and different musical exercises that expand the phonetic span, showing the strength of the singing voice, and acknowledging the styles of singing performance.

Staff Members:

Instructor		
Name	University of Graduation	Graduation
Ahmad Mousa	An-Najah University	1995
Khalifa Jad-Allah	Yarmouk University, Jordan	2007
Mahmoud Rashdan	Yarmouk University, Jordan	2008
Rami Arafat	Helwan University, Egypt	2010
Nassir Nafiz Asmar	Academy of Arts, Egypt	2010
Teaching and Research Assistants		
Name	University of Graduation	Graduation
Ammar Qadamani	Faculty of Arts, An-Najah University	1998
	Faculty of Educational Sciences, An-Najah University	2004
Ibrahim Kharroubi	Faculty of Musical Education, Helwan University, Egypt	1982
Khalid Saddouqq	Faculty of Fine Arts, An-Najah University	1994
Ahmad Abu Dayyieh	Faculty of Fine Arts, An-Najah University	1993
Laboratory Supervisor		
Name	University of Graduation	Graduation
Rawan Bishtawi	Faculty of Information Technology, An-Najah University	2007

{ The Interior Design Program }

Vision and Message:

Interior design deals with the blueprints and designs for the interior parts of residential and public buildings according to artistic and architectural criteria. It also deals with finding modern and practical solutions to make these buildings usable for different activities.

Objectives:

This program aims at producing high-qualified students who are capable of meeting the needs of the local and international community, providing them with the basic functional skills needed in the field of interior design to pursue higher education and keep up with the global evolution in the field.

The objectives of this program can be summarized as the following:

1. Balancing between the functional, aesthetic, and economic needs, while reflecting taste and social culture.
2. Dealing with internal spaces to create a suitable atmosphere.
3. Achieving mental peace by distributing and employing the elements of interior design, including furniture, light, shapes, space, raw materials, plastic art, construction materials, etc.

Interior design complements architecture, as the two make one functional unit.

The Interior Design program consists of a group of theoretical and practical courses which include the study of internal spaces and their contents, colors, natural and artificial lighting, furniture design, raw materials technique, natural ventilation, and the study of the psychological impact of the elements of interior design on the users of interior spaces.

Prospective applicants to this department must meet the following two conditions:

1. Applicants' high school GPA (grade point average) should be 65% and above;
2. Prospective applicants should pass the Placement Test of the Department of Applied Arts in Interior Design.

The academic requirements to attain a B.A from the Department of Applied Arts:

The Department of Applied Arts in Interior Design offers a unique specialization in Interior Design, which culminates in the awarding of a B.A. in this major. Interested applicants for a B.A. in this specialization should complete 121 credit hours, including University requirements & electives, college requirements and electives, and department requirements.

ILOs:

The Interior Design Department aims at producing students with the following qualities:

1. Loyal to their department and university.
2. Highly educated in the field of applied arts.
3. In possession of the basic artistic skills in the artistic field, both functional and aesthetic.
4. Capable of employing artistic jargon in applied art criticism.
5. Well-learned in the history of applied arts, as well as in the ancient and modern artistic styles in the area of interior design.
6. Aware of the importance of a successful relationship between the aesthetic and the functional aspect in the field of applied arts.
7. Qualified to enter the labor market and compete in it because they possess the means of modern communication.
8. Capable of solving new problems in their field with a creative style.

The new Interior Design course plan.

University requirement courses:18 credit hours

Department requirement courses: 91 credit hours

Department elective courses: 12 credit hours

Course #	Course title	C.H	Prerequisites
11201101	Introduction to Musicology	3	
11201103	Palestinian Folk Music	3	
11206101	Principles of Design	3	
11206102	Architectural Drawing	3	
11206103	Interior Design 1	3	
11206104	Perspective	3	
11206105	Shading, Shadows, and Lighting	3	
11206106	Design via Computer 1	3	
11206207	Interior Design 2	3	11206103
11206208	Theories and Methods of Design	3	
11206209	Design via Computer 2	3	11206106
11206210	The Sociology and Psychology of Design	3	
11206211	Interior Design 3	3	11206207
11206212	Technology of Raw Materials	3	
11206314	Interior Design 4	3	11206211
11206315	Detailed Plans	3	
11206316	Decor & Carpentry Factories	3	
11206318	Interior Design 5	3	11206314
11206319	Introduction to 3-Dimensional Design	3	
11206320	Quantities & Specifications	3	
11206321	Graduation Research Project	1	11206314
11206322	Field Training	3	
11206417	Light and Sound Techniques	3	
11206423	Graduation Project	3	11206321
11206424	The History and Design of Furniture	3	
11211101	Introduction to the Arts	3	
11211102	Academic Drawing 1	3	
11211109	The Theory of Colors and its Application	3	
11211116	Art History and Appreciation 1	3	
11211324	Islamic and Arabic Contemporary Art	3	
11211328	Aesthetics	3	
11211329	Palestinian Folk Art	3	
11211331	Research Methodology	3	

University requirement courses:

Students must take all of the courses in this group, consisting of 18 credit hours.

Course code	Course title	Credit hours
10032100	English 100	0
11000101	Islamic Education	3
11000102	Arabic Language	3
11000103	English 101	3
11000105	Palestinian Studies	3
11000108	Community Service	1
11000117	Leadership and Communication Skills	1
11000127	Introduction to Computer Science	1
11000323	English 102	3

Department elective courses (12 credit hours)

Course #	Course title	C.H	Prerequisites
11206151	Basics of 2-Dimensional Design	3	
11206251	Stained Glass	3	
11206253	Mosaic	3	
11206259	Metals and Woods 1	3	
11206352	Objects and Models	3	
11211103	Academic Drawing 2	3	11211102
11211219	Theory of Colors and its Application 2	3	11211109
11211315	Modern and Contemporary Art	3	11211217
11211321	Open Landscapes 1	3	11211102
11211414	Palestinian Plastic Art Movement	3	
11211454	Art Criticism	3	
11216212	Principals of Calligraphy and Decoration	3	

Course Description

11211101 INTRODUCTION TO ART

The purpose of this course is to introduce students to the three major types of arts (visual, theatrical, and architectural). Concentration will be given to the fundamental relationship among these types/forms of arts. The instructor follows two approaches to accomplish the objective of this course. The first approach consists of giving lectures, setting up group discussions, issuing materials on selected models of artwork which illustrate the original source of the artwork, its function, its substance, its style, and its formation. The second approach focuses on selecting and assigning a particular subject in art to each student at the beginning of each semester; the student will conduct a research paper on that topic and give a presentation on it. A hard copy of this research paper will be turned in to the instructor at the end of the course.

11211328 AESTHETICS

This course focuses on the study of aesthetics and the philosophies, trends, and principles used for the appreciation of beauty. In addition, it looks at the relation of aesthetics with other related subjects. Furthermore, this course investigates the multi-faceted concepts of aesthetics, its forms and content, beauty and ugliness. This course focuses also on the meaning of tragedy and comedy in art.

11201101 INTRODUCTION TO MUSICOLOGY

This introductory course focuses on a variety of topics, including linguistic and non-linguistic definitions of music; the interpretation of the meaning of music as science, art, and language; the types and forms of music; the writing and composition of these different types; forms of musical notes and tones; and their performance in theater. In addition, this course introduces students to the manner of drawing a clef sign, multi-music scales, intervals among them, intervals among tunes, and different passages. This course focuses also on introducing students of the arts to the types of world musical forms, such as opera and symphony, and Arabic musical forms, such as al-qasida, al-muwashah, and other performing and listening art forms.

11211331 PALESTINIAN FOLK ART

This course underscores the importance of studying folklore and how its study is relevant to popular artists. In addition, this course looks at the processes of glass-blowing, pottery-making, , inscription, metal-carving, ,

porcelain, popular embroidery, and the textile, carpet, straw and bamboo industries. Furthermore, this course is an attempt to develop the local folkloric ornamentation unit and folkloric heritage.

11201103 PALESTINIAN FOLK MUSIC

This course studies and investigates the Palestinian production of music, the pattern and style of Palestinian folkloric music, and popular music analysis at the vocal and instrumental levels. This course examines the characteristics of instrumental music and its popular properties. In addition, this course aims at studying the forms and models of popular/folkloric music. Finally, it looks at the models of popular songs and the musical instruments used to play these songs. It also looks at the types of these music instruments in terms of their production, vocal structure, and ways of performance.

11206316 DÉCOR AND CARPENTRY FACTORIES

This course introduces students to the machinery, tools, instruments, and different raw materials such as wood, metals, etc., which are used in factories in order to train students to use them to produce different and useful models that are deemed necessary for the development of their skills in internal design.

11206104 PERSPECTIVE

This course provides students with instructions which enable them to draw the perspective for the designing idea relying on untested blueprint procedures. It also provides students with better opportunities to apply certain designs which help students pass the theoretical stage of drawing to become more creative and confident at the assigned tasks. Furthermore, this course aims at nurturing the creative imagination of students to develop their artistic appreciation and authentic sensitivity so that they appreciate the values of different designs. Moreover, this course is an opportunity for students to learn all types of vanishing point perspectives. Finally, this course looks at the merits of teaching students how to draw one-dimensional, two-dimensional, and three-dimensional objects; as well as other ways to expand the student's understanding. Students will be supplied with a large amount of information, enabling them to draw the perspective for a designing idea relying on an elaborate format or script before carrying it out.

11206103 ARCHITECTURAL DRAWING

This course is designed to teach students the fundamentals of architectural drawing. Students will be exposed to samples of geometric projections, complete lines and sketches, elevations, and architectural sections by practicing the drawing of various samples and sketches. In addition, students will learn the symbols of the elements and materials of construction and make them visible in projections, elevations, and sections. Furthermore, students

will learn types of lines, drawing scales, dimension lines, preparation and arrangement of geometric posters or engineering–related posters.

1126102 PRINCIPLES OF DESIGN

This course is designed to introduce students to the types, forms, raw materials, tools and models of design. In addition, it introduces students to the conceptual idea of design, its foundations, elements, characteristics and features (such as color, line, space area, mass, void, equilibrium, motion, distribution, correspondence, and space). Furthermore, this course introduces students to the ways of dealing with objects or shapes with two-dimensions or three-dimensions and their application. It also introduces students to a variety of models and patterns of design and their connection with aesthetics and beauty.

11206105 SHADING, SHADOWS, & LIGHTING

This course is concerned with introducing students to the drawing of shadowy projections and shadows in the second and third dimensions. In addition, students have to learn the process of lightening and brightening a particular object or drawing by using various color techniques, such as white and black, watercolors, colored wood, bass, colors and markers.

11206319 INTRODUCTION TO THREE-DIMENSIONAL DESIGN

This course introduces students to the ways in which students can experience and feel third-dimensional works/objects and other artistic forms by creating models of three-dimensional objects, and using various types of necessary raw materials.

11206103 INTERIOR DESIGN 1

This course is a practical course. It deals with a residential interior design, particularly an apartment in an apartment complex, through which students can learn a great deal about the speed of moving in and out, the distribution and arrangement of furniture, the elements of architecture, the lighting, the colors, complementing and embellishing materials and their relation with each other and with the external environment, and the pattern of formation. In this course, students are expected to acquire knowledge about ground projections, sections, elevations, executive drawings, binoculars, and models, and then apply such knowledge by designing models and shapes of them. Finally, students have to submit a research proposal about their project.

11206106 COMPUTER DESIGN 1

This is an introductory course of computer applications in art. In addition, it introduces students to the multi-faceted computer applications in file management, Word and other famous design programs such as Photo Shop.

11206320 QUANTITIES AND SPECIFICATIONS

This course is a physical science course connected with materials and their properties and characteristics, and is tied to the principles of mathematics and arithmetic. It is strongly related to architectural design and designs of executive drawings. In addition, this course constitutes an essential component of interior design. Students will learn a great deal about the specifications of building materials and estimation of quantities. They will also learn about functional aesthetic, economic and human aspects of architecture.

11206208 THEORIES AND METHODS OF DESIGN

This course is theory-based. It is designed to introduce the concept of design and the historical stages that it has undergone and to trace its old and modern theories. In addition, this course provides a study of the traditional, contemporary, modern methodology of design and their overall influences. Furthermore, this course provides an account of the influences of the minor systems in the development and expansion of methodologies and their potentialities. Moreover, this course is concerned with the minor systems, which describe the type of relationship between man and machine and the ways to improve such a level of relation.

11206207 INTERIOR DESIGN 2

This course is a practical course. It introduces students to the concept of interior design for social and tourist centers, particularly hotels, restaurants, resting places, and multipurpose centers. This course also aims at introducing students to the concept and application of design and the ability of students to express it or display it in the interior space provided through teaching and training students of how to lay out models of interior design, ground projections, sections, elevations, executive drawings, binoculars, and models. Finally, students will be asked to do a small research proposal on their project for this course.

11206212 TECHNOLOGY OF RAW MATERIALS

This course is theory-based. It is designed to introduce students to the physical characteristics of the elements, which constitute and are being used in interior design.

It also looks at the ways and means of using such materials in interior design. These materials can be divided into three major types:

1. Woods: Students will learn about woods in terms of their types, characteristics, and ways of using them, connecting them, and tying them up; as well as external polishing.
2. Metals: Students will learn about metals in terms of their types, characteristics, connecting, welding, and manufacturing.
3. Plastic: Students will learn its types, physical characteristics, and its technical application in interior design.

1126315 DETAILED PLANS

This course is designed to teach students to sharpen their ability to express their executive views on interior design projections through the display of a completed product of a particular design, in conjunction with detailed maps and sketches for the intended project. The expectation is that students have to show their innovativeness in the product they set out to design for a particular project.

11206211 INTERIOR DESIGN 3

This is a practical course. It aims at studying the interior design for commercial and industrial centers, trade markets, department stores, clinics, offices, and factories. In this course, students will be introduced to the distinctive features and characteristics of interior designs for these projects and purposes, and the application of such design in the internal space and the study of its finishes and accessories. Furthermore, students have to provide the ground projections and sections. In the end, students must provide a short research proposal on their project along with some models.

11206209 COMPUTER DESIGN 2

This course is designed to acquaint students with computer applications for producing different models of designs, specifically the following software programs: Corel Draw, Corel Paint, Corel Move, Corel Trace and Voice Passed programs.

11206210 THE SOCIOLOGY & PSYCHOLOGY OF DESIGN

This course is theory-based. It examines the interchangeable relation between society and design. In addition, this course looks at the ways in which design can be pointed towards serving the necessary needs of man. Furthermore, it looks at the psychological effects that design may have on both individuals and the artist's creativity.

11206417 LIGHTING AND SOUND TECHNICALITIES

This course is concerned with the techniques of using light and sound in interior design by pointing out the relation of these techniques with void and mass. In addition, this course looks at the ways in which these techniques can be most effectively and artistically used.

11206417 FURNITURE: HISTORY & DESIGN

This course is both theory-based and practical. It is concerned with the inception and development of furniture in different historical ages. In addition, it trains students to distinguish between and among various furniture styles and their characteristics. Furthermore, this course deals with the foundations, styles, and furniture design techniques. Moreover, it focuses on the development of furniture from the perspective of the design movements in the 20th century and its use of various materials.

11206318 INTERIOR DESIGN 4

This is a practical course. It aims at introducing students to the type of interior design geared for cultural, recreational, entertainment, environmental, public and decorative monuments; as well as theaters and clubs. This course presents models and samples of ground projections, sections, elevations, executive drawings, binoculars, and various models of different designs. At the end of this course, students have to submit a short research proposal on the intended project.

11206322 FIELD TRAINING

In this course, students get field training after having finished their 3rd year (90 credit hours) as a preparation for them to have practical experience to complement the theoretical courses they have studied in the faculty. The training involves working in companies and institutions - both public and private - that work in the field of interior design. This course includes a minimum of 200 hours of training which can take place in either a summer course or a regular course provided that the student is taking a maximum of 11 credit hours in that course (including the training), under the supervision of an instructor from the Department.

The prospective outcomes of this course are the following: students comprehending the application on ground, recognizing the raw materials available in the local market and how to employ them in the area of interior design, and finally, getting to know the basics of working in companies such as dealing with customers and reinforcing group work and team spirit.

11206318 INTERIOR DESIGN 5

This is a practical course. It is concerned with laying out the interior designs for the construction of public buildings such as train stations, airports, universities, and other means of transportation such as trains, airplanes, and ships. In addition, this course is designed to expand and reinforce students' understanding of interior design and its relation with neighboring specializations. Furthermore, this course is designed to meet the needs of the designer who is connected with establishments and organizations. In this course, students will be asked to provide ground projections, sections, elevations, executive drawings, binoculars, and models. Finally, students have to submit a short research proposal on the intended project.

11206321 GRADUATION RESEARCH PROJECT

This course provides a complete description of the requirements of the Graduation Research Project, which students have to fulfill in order to graduate. In this course, each student is required to submit a theoretical research proposal of his graduation project which he/she selects with the approval of his/her supervisor. The focus of this graduation project has to

be on a topic in the student's major. A committee will be appointed from the same college to supervise and evaluate the student's research proposal before he/she sets out to finish it completely.

11206423 GRADUATION PROJECT

This course includes selection of the theoretical research proposal that provides an advanced study of an integrated practical project. This includes the aesthetic, technical and functional aspects, drawing on the general location, distribution of furniture and available spaces in the building. Before beginning the graduation project, the student should submit for approval a detailed proposal including methods, resources and references.

11211102 ACADEMIC DRAWING 1

This course is designed to train students to acquire some drawing skills in pencil, charcoal, and acrylic. In addition, students are called upon to hone the following skills to become adept at the tasks of drawing they may be engaged in: to learn how to record factual material and avoid relying on invisible things; to maintain a harmonious relationship and synchronize the movement among the eye, the hand, and the tool being used for the task at work. In order to accomplish such a task, students should ascertain the following points: maintaining some sort of balance of percentage in their painting/drawing of objects; distributing the target elements fairly and squarely within the bounds of the planned and designated framework of art work; double-checking the existence of both the shadowy and lighted areas; selecting and using single-point lead pencils; making sure that there is a third-dimension included in the formation of different objects; and understanding the nature and texture of the raw material being used along with its pointed directions. This course requires that students carry out a series of activities given to them as homework assignments in order to make sure that students have a good grasp of art concepts they had taken previously.

1121116 HISTORY AND APPRECIATION OF ART 1

This course is theory-based. It includes a study of art in the Renaissance Age in Europe and the different schools of art such as classicism, romanticism, surrealism, and realism. In addition, this course provides an adequate account of contemporary art trends in the 20th century.

11211324 CONTEMPORARY ISLAMIC & ARAB ARTS

This course is theory-based. It provides a historical and analytical study of Islamic art as an innovative art. It also provides a study of the characteristics of the Islamic arts, its relation with the Islamic faith, and the most important Islamic artistic decorations. In addition, this study presents models of Islamic artistic styles, Islamic architectural elements, Islamic painting, Islamic applied arts, and contemporary plastic arts in the Arab World. Furthermore, this

course provides an account on the most prominent Arab artists and their creative artistic works with an analysis of these artistic works to be displayed on slides. Students who sign up for this course are expected to conduct a research paper on one of the prominent Arab artists.

11211109 THEORY OF COLORS & ITS APPLICATION I

This course introduces students to the theories of colors by the prominent artists of different art schools. In addition, this course provides a comprehensive study of the nature of colors, their classification and types, the dynamic aspects of colors, the psychological basis and functions, and the influence of colors on the eyes of the spectators. Furthermore, this course requires that students apply some of these weaving processes to experience the influence of colors and the ways of using these colors in two or three-dimensional objects.

11211331 RESEARCH METHODOLOGY

This course aims at preparing students for higher education and scientific research in general, and for the writing of their graduation project. This is done by tackling the different theories and methods of research found in the social sciences, which include library research, making reference lists, giving brief descriptions of them, and studying references of books of art criticism. In addition to using art drawings and elaborating on them, students are required to conduct research on a scientific topic of their choice from any time period.

11211321 OPEN LANDSCAPES

This course is given outside the classroom. All students and teachers go out to explore nature and find aesthetic values in landscape in villages and old traditional places. During their sightseeing, students have to identify natural elements and artistic foundations of a work of art by attempting to draw different objects and sketches with different raw materials, paying keen attention to fleeting artistic formation. In this course, students become used to experiencing the aesthetic values present in the local environment.

1121141 Palestinian Plastic Arts Movement

This course is theory-based. First, it investigates the major factors of any artistic work by tracing the history of plastic arts in the Arab World in general, and in Palestine in particular before 1948. Second, it examines the art movement during the rise of the Palestinian revolution after 1967, which witnessed the initial establishment of a Palestinian Plastic Movement in the occupied territory. Third, this course will identify prominent artists of the occupied lands and provide an analysis of their artistic accomplishments, the local art exhibition and galleries; and finally, it provides a new perspective of the current and future direction for the Palestinian Plastic Movement.

11211219 THEORY OF COLORS AND ITS APPLICATION 2

This course introduces students to the theories of colors by prominent artists of different art schools. In addition, this course provides a comprehensive study of the nature of colors, their classification and types, the dynamic aspects of colors, the psychological basis and functions, and the influence of colors on the eyes of the spectators. Furthermore, this course requires that students apply some of these weaving processes to experience the influence of colors and the ways of using these colors in two or three-dimensional objects.

11211315 MODERN AND CONTEMPORARY ART

The first part of this course deals with the history of art, particularly in the area of plastic, applied, and architectural arts. It also focuses on the most prominent schools and movements of arts and their creators that had taken place after the Renaissance age and until the first part of 20th century. The second part of this course focuses on plastic, applied, and architectural arts in contemporary times or after the modern art period and the schools and movements of arts that are linked and associated with the ideas of modernity and its motives, objectives, and creators.

11211454 ART CRITICISM

This is a theory-based course. It is a study of the history and foundations of art criticism which is used in the process of evaluation and discovery of aesthetic elements in works of art through the study and analysis of an artist's individual thoughts and principles in aesthetics, and the possibility of applying them socially.

11206251 STAINED GLASS

This course is a practical course. It is a study of glass in terms of its types, ways of cutting it, the types of glass colors, and the ways and techniques of using colors in glass. In addition, this course deals with the techniques of stained glass with lead, copper, and jasper.

11206253 MOSAIC

This course is a practical course. It is designed to provide a historical study of mosaic in various ages and times and the techniques of its manufacturing. It also aims at introducing and training students in the use of mosaic tools and raw materials. In this course, students will be asked to carry out some projects in mosaic by using color paper. In addition, students will learn the techniques of using stones, marbles, and other works in mosaic production.

11206352 OBJECTS AND MODELS

This course is designed to introduce students to the ways and rules of making models of various objects made of woods and cartons by using different raw materials and applying what they have learned in this and other pertinent

courses. In addition, students have to do a research project on models of internal and external design as a fulfillment of course requirements.

11216212 THE PRINCIPALS OF CALLIGRAPHY AND DÉCOR

This course is designed to provide a brief account of the history and development of calligraphy and decoration and their prominent artists. In addition, this course introduces students to the basic rules and principles of calligraphy and decoration, along with the tools and instruments used in carrying out different drawing or design assignments. In this course, students are expected to apply the rules and methods which they have learned in carrying out assignments in Arabic and Islamic styles of calligraphy, and they are also called upon to employ this knowledge in different models of design.

11206151 RULES OF TWO-DIMENSIONAL DESIGN

This course is both theory-based and a practical course. Thus, it provides students with the fundamental principles of the two-dimensional object. It also develops students' understanding of its nature, components of design, its mechanisms, tools, techniques, and its influences by pointing out and displaying the principles and rules of design such as colors, measurements, impact, line, and textures. Furthermore, this course examines the reaction of human being to various designs and shapes and the application of their techniques.

11221103 ACADEMIC DRAWING 2

This course trains students of the fine arts to acquire knowledge of the following processes when they engage in academic drawing: use factual materials to report the reality as it manifests itself by relying on a recording style for accuracy; distribute the elements within the bounds of the given framework with great care for the basic foundations for any work of art; carry out different studies on calligraphy with different objectives and goals; understand the methods of drawing in pencil, charcoal, and acrylic, and the degree of coloring and its relation with the object being drawn in terms of its proximity; carry out a drawing of models with different goals and objectives for the sake of knowing the effect of calligraphy; deal with models of different textures such as clothes, metals, glass, to ascertain the distinctive properties and characteristics of a particular raw material and its relation with void/empty space; use and employ raw materials such as coal, Chinese ink, and water colors, in order to figure out their artistic properties and characteristics; and finally, focus on the statue of the human being or part of it by drawing a partial statue, or a statue without a body.

The expectation is that students in this course must carry out some drawing of the head and body of human being.

11206259 METALS AND WOODS 1

The purpose of this course is to introduce students to the types of metals, the making of innovative designs on different metals, (e.g., zinc, aluminum, yellow and red copper), and plates. It also acquaints students with the characteristics and properties of these types of metals and techniques of their welding, decoration processes, finishing, polishing, silver, nickel, or cooper coating, coloring processes, oxidization with certain acids, coloring with fire, or burning. It also teaches and trains students to use tools and instruments necessary at specific workshops. Finally, it teaches students how to draw on woods by heating and making final finishes on boards/paintings by using wood paints.

Name :	University of Graduation	Year of graduation
Assistant professors		
Hassan Na'airat	Kharkov University, Ukraine	2005
Mervat Ayash	Cairo University , Egypt	2007
Mohammad Jaber	University of Brussels, VUB	2012
Hani Al-Faran	Damascus University, Syria	2011
Lecturers		
Ehab Abu-Hnod	Halawan University, Egypt	2006
Research Assistants		
Rowa'a Sawalha (on scholarship)	An-Najah University	2000
Omar Einabusi	An-Aajah University	2000
Lab Supervisor		
Rawan Bishtawi	An-Najah University	2007

The faculty of Law aspires to prepare law students to achieve a high status of legal knowledge and culture, a strong ability to analyze different legal issues and knowledge of legal jurisprudence for different branches of law.

The Message:

The law program aims at providing an exquisite academic environment in the field of legal sciences that is based upon academic, analytic, empirical and comparative research. This is to be achieved through the legal courses in both the general and private law branches, in a way that guarantees meeting the needs of society and the Palestinian market through preparing qualified experts and specialists that are able to treat the mission entrusted to them according to the expected quality and accuracy in an advanced frame of their work.

The Program's Vision:

The program aims at preparing specialized cadres in the field of legal sciences, where the student will be able to deal properly with the current legal principles through owning scientific thinking skills, and training on mental debating skills, critical analysis, thinking, following scientific methodologies in all fields whether it be in law or preparing specialized legal scientific research where the researcher reflects her/his proper analysis of the text.

The Goals:

The law program aims to:

1. Develop legal methodology and critical analysis through enabling the student to conduct legal research according to a sound scientific methodology.
2. Focus on national laws and compare them with comparative laws.
3. Enhance research abilities, control legal phrasing and analyze legal decisions.
4. Connect the theoretical knowledge with real life practice.
5. Qualify researchers to continue their higher education and instill the spirit of life-long learning in the student.
6. Qualify lawyers to work in the public and private sectors.
7. Meet the needs of the Palestinian society, especially to raise awareness in legal matter and the legal culture in the fields of practicing rights and the basic freedoms.
8. Support academic research in the field of law, and help develop the prevalent legal systems in the Palestinian society since the Ottoman age until the Israeli occupation in a way that serves a unified legislative and national policy.
9. Establish legal experts that are capable of studying and understanding the prevalent legal systems and the new legislative developments, and enact new Palestinian legislations.
10. Develop the right morals that a law person should have.

The Program's Intended Outcomes:

The program aims to achieve the following outcomes for students:

1. Acquiring the necessary legal faculty to build a legal personality.
2. Acquiring the necessary legal knowledge to carry out legal functions.
3. Acquiring the ability to comprehend and analyze legal texts.
4. Being able to phrase contracts, conclude deals and offer legal consultations.
5. Acquiring the ability to prepare academic research and specialized research in law.
6. Being able to solve legal conflicts.
7. Getting to know comparative laws and benefiting from the experiences of other countries in the new and developing topics.
8. Competing for jobs and positions in the public and private sectors.
9. Being able to influence the society and interact with all its sectors.
10. Being able to employ the modern electronic technologies in their work.

The Faculty's Principles:

The faculty commits to a vision and a message that corresponds to the message of the university according to the following principles:

1. Justice
2. Equality
3. Freedom
4. Non-discrimination
5. Cooperation
6. Respect of the basic human rights and freedoms
7. Independence
8. Commitment to the ethics of the law profession (dignity and righteousness)
9. Responsibility for mistakes

The Study Plan to Grant a B.A degree in Law

Students wishing to obtain a B.A degree in Law must successfully complete 138 credit hours according to instructions granting bachelor's degree and the academic plan conditions at the faculty of Law.

The required credit hours are distributed as follows:

Type of Requirements	Credit Hour
University	18
Faculty: Compulsory	96
Faculty: Elective	21
Practical Courses	3
Total	138

Requirements for obtaining a B.A degree in Law

First: University Requirements (18 C.H)

Course #	Course Title	Credit Hour	Prerequisite
11000101	Islamic Culture	3	None
11000105	Palestinian Studies	3	None
11000102	Arabic Language	3	None
11000103	English Language (1)	3	Pass the level exam or English 100
11000325	English Language (2)	3	10103
11000117	Leadership and Communication Skills	1	None
11000108	Social Services	1	None
11000127	Introduction to Computer Science	1	None

Second: Faculty Requirements: (96 C.H)

Course #	Course Title	Credit Hour	Prerequisite
11101110	Introduction to Law	3	None
11101111	Principles of Commercial Law	3	None
11101112	Civil Law (Sources of Obligation)	3	None
11101113	Principles of Public International Law	3	None
11101114	Penal Law/ General Section 1	3	11101110
11101116	Administrative Law I	3	11101110
10401140	Fundamentals of Jurisprudence	3	11101110
11101115	Civil Law (Sources of Obligation 1) --	3	11101110
11101210	Civil Law “Conditions of commitment”	3	11101115
11101215	Commercial Law (Companies and Bankruptcy)	3	11101111
11101310	Commercial Law (Banking & Commercial Papers)	3	11101215
11101311	Civil Procedures	3	11101313
11101312	Law of Evidence	3	11101311
11101313	Civil Law (Nominated Contracts I)	3	11101210
11101410	Private International Law	3	11101311
11101411	Rights in Rem	3	11101313
11101211	Penal Law (General Section II)	3	11101113
11101314	General Finance and Tax Law	3	11101116
11101315	Penal Procedures Law	3	11101317 , 11101316
11101316	Crimes against the Person	3	11101211
11101317	Crimes against Property	3	11101316
11101318	Administration Law II	3	11101116
11101412	Administrative Judiciary	3	11101318
11101212	Research Methodology (Methods and Application)	3	-
11101319	Labor Law	3	11101313
11101320	Enforcement Law	3	11101312
11101321	Insurance Law	3	11101313
10401241	Personal Status Law I	3	10401140
10401342	Personal Status Law II		10401342
11101413	Laws of Land and Real Estate	3	11101313
11101322	Arbitration Law	3	11101313
11101323	Intellectual Property	3	11101110

Third: Faculty Elective Courses (21 C.H)

Course #	Course Title	Credit Hour	Prerequisite
11101313	Nominated Contracts II	3	11101324
11101110	Internet and Electronic Transactions Laws	3	11101325
11101111	International Commercial Law	3	11101326
11101111	Marine and Aerospace Law	3	11101327
11101110	Forensics	3	11101328
10001002	Language skills	3	10301320
11101110	Palestinian Legislative History	3	11101329
11101411	Rights in Rem: Dependency	3	11101330
11101313	Donation Contracts	3	11101331
11101313	Updated Contracts.	3	11101332
-	Legal Ethics	3	11101333
11101213	Human Rights	3	11101113
11101334	Diplomatic Law	3	11101113
11101335	Constitutional Law 2 (Political Systems)	3	11101112
11101419	Constitution of Palestine	3	11101335
11101414	Criminology	3	11101211
11101216	International and Regional Organizations	3	11101113
11101214	International Humanitarian Law	3	11101113
11101336	Local Administration "Local Governance"	3	11101318
11101420	EU Law	3	11101113
11101415	Environmental Legislations and Urban Planning	3	11101110
11101211	Crimes Violating the State Security	3	11101337
11101311	Legal Phrasing	3	11101338
11101110	The Law of the Israeli Occupation State	3	11101339
11101113	The International Refugee Law and Palestinian Refugees	3	11101340
11101313	Health and Medical Responsibility Law	3	11101341
11101313	Laws and Methods of Appeal	3	11101342

Fourth: Practical Courses: (3 C.H) The student chooses from the following courses only:

Course #	Course Title	Credit Hour	Prerequisite
11101416	Practical Legal Applications	3	11101311,11101315
11101417	The Legal Clinic	3	11101311,11101315
11101418	Moot Courts	3	11101315,11101311

Course Description

11101110 INTRODUCTION TO LAW

This course aims to introduce students to the nature and historical development of law, and how to formulate its rules and identify the goals, properties and sources of these rules, as well as categorize legal principles, apply and interpret them.

Students also study the theory of justice in this course, where justice is defined, with its types, parties, place and sources, and how to protect it.

11101111 PRINCIPLES OF COMMERCIAL LAW AND COMMERCIAL CONTRACTS

In this course students study the nature and development of commercial law, merchandising and general laws that regulate business.

11101115 CIVIL LAW (SOURCES OF OBLIGATION I)

This course introduces students to the foundations of civil law. It particularly focuses on individual and pecuniary rights and sources of obligation. The course defines contract law, including types of contracts, conditionality, individual will, detrimental acts, and responsibilities. The course also covers dishonest assistance, misrepresentation and unjust enrichment.

11101113 PRINCIPLES OF PUBLIC INTERNATIONAL LAW

This course mainly focuses on general theories, sources of international law and the development of law making processes. Emphasis will be placed upon the role of law in times of peace and war. Students learn about States' rights and duties within this framework, and the legal means of settling inter-state conflicts. (Palestine and the International Law).

1101114 CRIMINAL LAW "GENERAL SECTION I"

This course discusses general legal rules applicable to criminal convictions. It addresses reasons for disclosure and the liability of the culprit, instigator and accomplice. Students will examine the personal and territorial jurisdiction of penalty law.

11101112 CONSTITUTIONAL LAW I "GENERAL THEORY"

This course provides a definition of constitutional law. The course introduces students to different constitutional systems, methods of granting power, electoral procedure, individual rights and public freedoms. The separation of powers between the legislature, judiciary and executive- is examined,

addressing the philosophy behind the separation and the respective responsibilities and areas of influence of each of these organs of government.

11101114 ADMINISTRATIVE LAW I

This course provides students with a definition of administrative law, and knowledge of its origins and sources. The rules governing public authorities and public spending will be examined.

10401140 FUNDAMENTALS OF JURISPRUDENCE

The meaning and definition of Fiqh, its evolution, purpose and varied aspects will be examined. The course will discuss types of governance, license and determination, the topic concerning the Holy Koran in terms of signs and the use of words and characters. Topics related to Sonnah, unanimity and measurement (definitions, uses and conditions) as well as reason and consequences will be discussed. Subsidiary evidence will also be covered such as desirability and reclamation.

11101210 CIVIL LAW “CONDITIONS OF COMMITMENT”

This course is a study of the effects of obligation in terms of explaining optional implementation means, namely, payment, settling of accounts, unity of pecuniary; means of compulsory implementation, namely, real implementation, implementation through compensation; means of protecting execution, urgent case-direct and indirect trials, modified definitions of obligation effects, right to imprison, conditions, terms and clearance – impossibility of execution – passing of time preventing from hearing lawsuits.

11101321 PERSONAL STATUS LAW

This course tackles two subjects: divorce and marriage. Topics covering marriage include definition, wisdom behind it, legality, engagement, elements of marriage contract, legal conditions for its completion, conditions tied to contract, effect of marriage contract on dowry, adequate support of wife, fair treatment of wife in case of polygamy; loyalty to husband and decision-making at home. In the second part of the course, students will learn about divorce, its divisions, khulu’ (initiating divorce by wife), its prescriptions or rules; custody (of infant) and its rules, and kinship expenses

11101215 COMMERCIAL LAW (COMPANIES AND BANKRUPTCY)

This course covers a number of topics including the definition of commercial companies, their types, their dissolution, their divisions, the way of establishing them, their registration, administration (management) and liquidation. Furthermore, the course provides definition of bankruptcy, its causes, conditions, types, position of law towards it, penalty imposed on bankrupt traders, in some cases, particularly when it is criminal bankruptcy.

11101310 COMMERCIAL LAW (BANKING & COMMERCIAL PAPERS)

This course covers a number of topics including the definition of commercial papers, their characteristics, types, policies (order bills), checks, the establishment of commercial drafts and their exchange and the guarantee of their payment and the expiration of obligation cited in them. In addition, the course tackles banks in terms of their definition, and their role in economy, development, in external and internal trade as well as loans, their conditions, interests and their kinds.

11101311 CIVIL PROCEDURES

This course covers the implementation of civil procedures law, in terms of time and place, and the important principles on which the litigation system is based, formation of courts, degrees of litigation in these courts, including urgent litigation. The course also deals with the rules of jurisdiction, conflict of jurisdiction and its types and international jurisdiction of judiciary. Furthermore, the course will examine lawsuit theory and litigation procedures; bringing legal action, its conditions, notifying the appellee, trial proceedings, consideration of the case, aspects of its use, requests, motions of defense, intervention, adjournment of the lawsuit case and its termination, sentences and their types, determination of their effects and ways of appealing against them.

11101312 LAW OF EVIDENCE

This course covers the law of evidence according to the different Fiqh schools. It also includes a study of evidence: written evidence, testimony, and the new argument of Quran in proof, besides admission, the right, preview, and experience in accordance with the rules set out in civil law and evidence law.

11101320 ENFORCEMENT LAW

This course studies the powers of the executive council; its responsibilities, authority, structure and competence. Along with methods of enforcement, it also covers executive bonds and methods of executing the local and foreign judgments, funds that may be excluded, custody and consequences.

11101313 CIVIL LAW (NOMINATED CONTRACTS I)

This course is a study of the most common contracts: Lease and sale contracts. The course will provide students with a definition of sale contracts, their characteristics, elements, rules, impacts and expiration. The course will discuss proprietor and tenant law.

11101410 PRIVATE INTERNATIONAL LAW

This course begins with the definition of private international law, its sources, its nature, general theory of law conflict, analysis of evidence base and schools, concerning the theory of conflict of jurisdiction and types of this latter.

11101411 RIGHTS IN REM

The course provides details about proprietorship rights, means of protection and restrictions on it. Then the course discusses specific types of ownership that include public ownership, upper and lower ownership, mutual wall, and apartment and floor ownership. The course will also dwell on reasons for acquiring property after death and reasons for ownership in case of life. The course ends with adjacency rules.

11101211 PENAL LAW (GENERAL SECTION II)

Topics covered in this course include penalty, in terms of its importance, objectives, divisions, types, completion of punishment and suspension of punishment execution; comparison between penalty and other types of punishments, exemption from punishment, reasons for light and strict punishment, precautionary measures; their concept, types and expiration.

11101316 CRIMES AGAINST THE PERSON

This course addresses crimes against persons such as murder of different types (premeditated murder, depraved, felony murder) and crimes of abuse, indecent assault, rape, abortion, crimes against freedom, threats, defamation as well as crimes like (forgery, bribery).

11101317 CRIMES AGAINST PROPERTY

This course will address the crimes against property such as theft and embezzlement, fraud and the crime of giving a check without balance and methods of credit.

11101314 GENERAL FINANCE AND TAX LAW

This course includes a study of general foundations and bases organizing revenues, expenditures, public budget, and a practical study of it. The course is also a study of the principles of public finance, theory of taxes and its goals with emphasis on taxing regulations that are effective in the Palestinian areas. The course also highlights the role of taxes in striking the necessary balance between revenues and social justice.

11101315 PENAL PROCEDURES LAW

This course begins with a definition of this law and its relationship with other laws particularly Law of Penalty. The course also explains the scope of procedure rules, different stages of penalty lawsuits and starting from preliminary investigation and its proceedings. The course will study lawsuits resulting from crimes, public right lawsuits, parties involved, restrictions and reasons for their termination. In addition, the course teaches civil lawsuits resulting from penalty lawsuits in terms of their dependence on them, their conditions and effects. There is also a study of penalty judiciary in terms of its formation, and bases of its organization, proceedings of penalty courts and fundamentals, ways of providing evidence, types of sentences and ways of contesting them, both ordinary and extraordinary.

11101318 ADMINISTRATION LAW II

This course addresses public jobs, and administrative decision in terms of its elements and the bases governing it, in the light of abrogation and non-retroactivity. The course also examines administrative contracts in terms of their types and rules.

11101412 ADMINISTRATIVE JUDICIARY

This course introduces administrative judiciary, traces its development and explains the principle of legitimacy, the laws of guaranteeing its implementation, and determining types of controlling the administration, particularly judiciary control, its types, its development and organization. The course will provide examples, namely, from Egypt, France and Jordan. Students will also be introduced to Supreme Court of Justice in Jordan, its specialization, lawsuit abrogation, its definition, its characteristics, conditions for its acceptance, aspects of its cancellation and its judgment.

11101212 RESEARCH METHODOLOGY (METHODS AND APPLICATION)

This course aims at teaching students how to use the library, and how to document sources and references when they write academic papers. The course also teaches students how to collect data, and analyze and classify them. In addition, the course introduces methods of research and technological resources used in research.

11101319 LABOR LAW

This course introduces Jordanian Labor Law. Topics covered include definition of the law, its historical development, its sources, contracts based on it, conditions for their validity, subsequent obligations on employer and employee, reasons for termination of an individual's work contract, collective labor contract, union organizations, ways of settling labor disputes with special reference to the most important rights, and advantages and disadvantages of these unions.

11101322 ARBITRATION LAW

This course deals with commercial arbitration as an alternative means of resolving disputes. Conditions of an arbitration agreement are covered along with procedures, issuance of an award, objections to implementation, and appeal. All this is in the context of Palestinian Arbitration Law. The course deals with the definition of international commercial arbitration and what distinguishes it from domestic arbitration, and its role in international trade relations.

11101413 LAWS OF LAND AND REAL ESTATE

The main part of this course is concerned with land law. This includes classification of estates, registered and unregistered conveyance, co-ownership and trusts of land, leases, licenses, easements, covenants and mortgages.

11101323 COMMERCIAL, INDUSTRIAL AND INTELLECTUAL PROPERTY

This course provides a historical background about the origin of commercial, industrial and intellectual property, means of its protection at the international level (Paris Treaty), history of legislation, pertinent to it, during the Ottoman rule, the Jordanian rule; patent law, registration system, nature of patent right or intellectual property, ways of using and protecting it, fees, industrial models, rules governing trade names and titles, commercial and intellectual property, how to sell, and use rights to others.

10401342 PERSONAL STATUS LAW II

Topics covered in this course include legacy and rights pertinent to it, reasons and conditions of inheritance, men and women heirs, reduction of heirs' shares, distribution of remaining shares among heirs, greed, and abolishment, as well as kinship inheritance. Another topic covered in this course is the will in terms of its wisdom, pillars, conditions, voiding, retraction, acceptance, rejection and obligatory will. The last topic is wakf (endowment). The course will look at the meaning, conditions and rules governing wakf.

11101321 INSURANCE LAW

This course covers the fundamentals of insurance, its emergence, evolution and types of insurance; in addition to studying the effects, and obligations of the insurer and the insured according to the insurance contract. Legal solutions, direct matter and obsolescence will also be covered

11101251 COMMERCIAL LAW (FOR STUDENTS OF ECONOMICS)

In this course, the student studies the principles of commercial law regarding its definition, commercial deeds, stores and merchants.

In addition, this course tackles the general rules for commercial companies, bankruptcy and general rules for commercial paper bill of exchange (withdrawal documents and checks) and banking operations such as: current, account banking deposits and documentary credit.

11101324 NOMINATED CONTRACTS II

This course includes a detailed examination of the four civil contracts, Agency, Guarantee, Contracting and Assignment. In the first type of contract, the course examines the creation of the Agency and its implications and expiration. In the second type of contract, students are introduced to the meaning, elements, types and effects of the contract, particularly between the guarantor and the lender, and between the guarantor and the borrower. In the third type of the contract, the course will focus on the contractor's obligations vis-à-vis the employer's obligations, and expiration of contracting contracts. In the fourth contract, the course addresses the types of agency and its creation, implications and expiration.

11101326 INTERNATIONAL COMMERCIAL LAW

This course examines the international trade law, its sources and evolution. The most important international trade contracts are addressed, including: the international sale of goods, as well as the most international conventions and norms in international trade law.

11101325 INTERNET AND ELECTRONIC TRANSACTIONS LAWS

This course aims to identify the importance of electronic commerce and the evolution of international laws in this area. Students will study the establishment of the electronic contract and the problem this can cause in relation to validity.

11101330 RIGHTS IN REM: DEPENDENCY

This course covers the study of mortgage insurance and possession in terms of construction, effect and expiry. It also includes research into privilege rights, including privilege rights on real estate.

11101331 DONATION CONTRACTS

This course is an analytical study of the gift, bare trust, and the loan in terms of establishment, legal effect and expiry. It also includes a study of Fiqh's different points of views on such contracts.

11101332 UPDATED CONTRACTS.

This course covers the study of the most important drafts of the commercial contract such as project finance contracting, commercial credit contract, concession contracts, and intellectual property and technology transfer contracts.

11101327 MARINE AND AEROSPACE LAW

This course introduces the students to the shipping legal system, identity, nationality and its registration. Students will also learn about ship ownership, rights in rem pertinent to it, its confiscation, and reasons behind the action and the manner of its implementation. Furthermore, students will learn about ship navigators, namely, ship proprietor, its captains, and its maintenance officer. In addition, students will be introduced to contracts organizing marine activity: marine work contracts, marine insurance contracts, ship-rescue contracts, marine responsibility in terms of collision, insurance and rescue.

It also covers the aerospace law that governs the legal relations resulting from the use of space to organize space navigation, and how to use civil planes according to the international charts that organize space navigations, as well as the mutual use of space between countries, and the treaties against plane kidnapping and its local and international sanctions.

11101335 CONSTITUTIONAL LAW 2 (POLITICAL SYSTEMS)

It deals with the genesis of constitutional rules, the evolution of the system of constitutional governance and general constitutional fundamentals in Palestine, and how the constitutions of Palestine are put forward, their nature, objectives, and their organization of public authorities in terms of Jurisdiction and relationship. It also addresses the nature of the constitutional system in Palestine, the real practice of political sovereignty, and the features of the current constitutional system.

11101216 INTERNATIONAL AND REGIONAL ORGANIZATIONS

This course is a study of both regional and international organizations in terms of development, history, types, and leaders. It is also a study of general theory of the international organization, its legal status and its role in the international community. International organizations considered are the UN, UNESCO, WHO, UNICEF, and other United Nations agencies. Regional organizations examined will include the Arab League, Organization of African Unity, the Organization of American States and Palestine in the international organizations (The PLO).

11101414 CRIMINOLOGY

This course is a study of criminology in terms of its definition, its history, and its development. It is also a study of the link between criminology and Law of Penalty, factors behind individual and group criminal behavior and the different theories introduced around these factors.

11101214 INTERNATIONAL HUMANITARIAN LAW

This course introduces the law of war and how it developed starting from the second half of the nineteenth century. The course also examines the most important sources of this law: customary and conventional ones. The course, further, discusses the most important legal obligations of disputing parties and neutral states, and the duties of the occupying country towards the occupied region and its population. The course ends with an illustration of the characteristics of War and Occupation Law and its shortcomings. Palestine is taken as an example.

11101334 DIPLOMATIC LAW

This course provides the student with an historical idea about the origin and development of the diplomatic law; it also discusses diplomatic immunity and privileges enjoyed by the diplomatic corps and consular corps people. Furthermore, the course explains the development of the international conventions towards diplomats. The course ends with an examination of Vienna treaties of 1961 and 1963 which laid the modern legal foundations for Diplomatic Law, immunity and consular and diplomatic privileges.

11101415 ENVIRONMENTAL LEGISLATIONS AND URBAN PLANNING

Students in this course will learn about local legislations aimed at protection of environment and prevention of pollution. The students will also learn about the environment, its elements, means of its protection and its sustainable development. Furthermore, students will be introduced to international environmental laws particularly those related to water and natural resources. Pertaining to urban planning, students will learn about laws related to planning in both cities and villages, and different committees charged with planning, their powers and formation.

11101336 LOCAL ADMINISTRATION “LOCAL GOVERNANCE”

Looking at topics related to local administration, the course will cover the rules governing local administration, competences and the relationship with the central administration. Students will learn about the expertise of each administrative body, systems of practice, types of administrative control in the context of democracy and accountability. Students will come away with a sound theoretical basis of Administrative Law and its relationship with ensuring respect for rule of law and protecting public interests.

11101420 EU LAW

Students will learn about the establishment of the European Union, its institutions and the legal system that regulates its relations with Member States. The three EU powers will be discussed: legislative power and executive power, along with the European judicial system.

11101337 CRIMES VIOLATING THE STATE SECURITY

In this course students will study crimes perpetrated against the State, for example; conspiracy, treason, espionage and crimes against the constitution, terrorism and others.

11101419 CONSTITUTION OF PALESTINE

This course addresses the development of the Palestinian political system over the various eras, and by change of the ruling authorities in charge in Palestine. It deals with the current constitutional system in force under the Palestinian Authority of the Basic Law issued on 29-5-2002 and amended in 2003. Students are exposed to the forms of the Palestinian political system and freedoms set forth in this system and the authorities and jurisdiction of each one of them. Finally, student will study Oslo agreements and their impact on the constitutional and political system in Palestine.

11101329 PALESTINIAN LEGISLATIVE HISTORY

The course addresses legislative developments within modern Palestine from the late Ottoman rule to the British Mandate, through periods of Jordanian and Egyptian rule to the current Israeli occupation, identifying the characteristics of legislative policy during these periods.

11101328 FORENSICS

This course is a study of various forms of suspicious deaths, for example, murder, honor crimes, rape and methods of identification including fingerprinting, use of forensic doctors and their specialties. The course will further teach students techniques used in discovering forgery and fraud.

31320 LANGUAGE SKILLS

Giving law graduates the skill to write in a direct manner, to express the meanings of the terms clearly in order to denote the intended meaning and to avoid common errors. Familiarizing them with the strategies of expression, rules of linguistic interpretation of texts, so that legal research and writing would be well written.

11101333 LEGAL ETHICS

This course requires students to consider the moral aspects of a career in law. The ethical values and practices of judges, lawyers, prosecutors, legal advisers and law professors will be considered along with the disciplinary procedures applied in cases of misconduct. In respect of client confidences, candor toward the tribunal, truthfulness in statements to others, and professional independence are some of the defining features of legal ethics.

11101339 THE LAW OF THE ISRAELI OCCUPATION STATE

The course includes getting to know the basis of the legal and judicial Israeli system in the civil, administrative and constitutional fields, with extra focus on the practical consequences on the Palestinian rights outside the green light.

11101340 THE INTERNATIONAL REFUGEE LAW AND PALESTINIAN REFUGEES

It studies sides of the international law that is related to the rights and protection of refugees in general, with extra focus on the Palestinian refugees, and the cases related to them in terms of history of the Palestinian forced migration, the localization of the refugees, the return to the home country, their protection and the UN resolutions concerned with them.

11101341 HEALTH AND MEDICAL RESPONSIBILITY LAW

This course studies the legal relationship between the doctor and the patient and the contracted agreements, professional responsibility, medical mistakes and life medicine ethics. It also addresses the medical legislations in Palestine in comparison with other legislations.

11101342 LAWS AND METHODS OF APPEAL

This course tackles the divisions of laws, the procedures of their issuing, what results from them, and the methods of appealing them. The course addresses the general basics of appealing.

Practical Courses Description:

The student must successfully complete three credit hours out of the following nine practical hours:

11101416 PRACTICAL LEGAL APPLICATIONS

This course aims at introducing students to the legal regulation and the methods of how legal administrations work. The course follows the method of field practice in one of the administrations that get determined by the supervising instructor and in cooperation with the concerned parties. A prior agreement on the content of practice and number of trainees will be finalized with those administrations. The student spends 192 credit hours divided to four continuous hours daily and twelve hours weekly. The student then gets evaluated according to a grade decided by the party that she/he trains for; in addition to a grade set by the supervising teacher after the student goes through an oral exam and submits a report about the training.

11101417 THE LEGAL CLINIC

This course aims to train students to solve legal issues that come to the legal clinic through the free services and consultancies these clinics offer for people.

The student spends 192 credit hours divided to four continuous hours daily and twelve hours weekly. The student then gets evaluated by the instructor of the course who is the manager of the legal clinic.

11101418 MOOT COURTS

The course aims to teach students about the practical sides of the legal life through an emulation of civil, criminal and administrative courts by posing issues in a form of a court. The roles get divided among students. This allows the student to live the atmosphere of legal practice in the faculty.

The student spends 96 hours divided to six hours a week. Students get evaluated according to their roles in moot courts, and the instructor conducts a practical test as well; in addition to evaluating the student's performance.

Staff Members

Staff Member	Degree	University of the Obtained Degree
Akram Mashhoor Awad Dawod	Assistant Prof.	University of Poitiers, France.
Amjad Abdel-Fattah Hassan	Assistant Prof.	Abu-Baker Bulgaied University/ Telmesan/ Algeria.
Basel Mansoor Ghanem	Assistant Prof.	Warsaw State University, Poland.
Hussein Ahmad Mushaqi	Assistant Prof.	Al-Albayt University, Jordan.
Hasan Falah Al-Haj Musa	Assistant Prof.	Cairo University, Egypt
Ali Mohammad Ali Mosleh	Assistant Prof.	University of Jordan, Jordan
Ghazi Fawzi Monawer Dweikat	Assistant Prof.	University of Alexandria, Egypt.
Ghassan Shareef Mohammad Khaled	Assistant Prof.	Friendship University of Russia, Moscow
Fadi Qseem Fawaz Shadid	Assistant Prof.	Al- Manar University, Tunisia.
Nael Ahmad Mahmood Taha	Assistant Prof.	Friendship University of Russia, Moscow
Muhammed Adel Sharaqah	Assistant Prof.	University of Paris, France
Eshaq Ahmad Hamdan Barqawi	Assistant Prof.	University of Jordan, Jordan
Ashraf Muhammed Saleh Hussein	Assistant Prof.	Al Manar University, Tunisia.
Ra'ed Muhammed Yousif Abu-Badaweyeh	Instructor	Uppsala University, Sweden

「 Faculty of Engineering and
Information Technology 」

{ Architectural Engineering }

Vision

The scope of our Department is to provide a world-class education in architecture capable of creating high-performance buildings –both new and old– as well as advanced research and community service with a special focus on Palestinian culture.

Mission

The mission of the Department of Architectural Engineering is to prepare students for successful careers in professional practice and to carry out applied research in the design of buildings with a special emphasis on Palestinian culture. In so doing, this is based on: (1) A solid ground with high professional ethics to handle real-life problems elegantly; (2) competency with breadth and depth in engineering fundamentals and building systems; (3) awareness of the world and sensitivity to the environment and international cultures; (4) versatility and flexibility in providing professional services and understanding entrepreneurship; (5) effectiveness in team operation and cooperation skills; and (6) effectiveness in communication skills and leadership roles.

Program Objectives:

To achieve our mission and realize our vision, the Department has identified the following goals:

1. Providing students with the best inter-disciplinary education available for successful careers in the building professions - high-performance building design and construction;
2. Promoting effective and efficient programs by developing the resources and programs to attract an outstanding and diverse body of students; and
3. Enhancing academic excellence through the effective support of faculty, students, and staff, including acquiring the necessary human and physical resources to assure expanded success in the Department's teaching and research goals.

ILOs:

1. The designing of buildings of high-performance, aesthetics and professionalism.
2. Identifying the mechanism for manufacturing building construction techniques.
3. The integration of buildings with cultural and social dimensions and symbolic meanings.
4. The ability to catch up with the practical and intellectual developments of architecture.
5. The ability to deal with domestic and international standards in the field of architecture.
6. The ability to work individually or in a team, whether in the office or field.

Study Plan

Admission Requirements:

Students will be accepted in the Department of Architectural Engineering in accordance with their average on the General Secondary Exam (50%) and on the Architectural Qualification Exam (50%) held by the Department during the admission period. Full admission will be secured only if the student is among the top number of applicants. The Department of Architectural Engineering, in coordination with the Faculty Council and the Dean, determines the exact number of architecture majors in line with the Faculty's needs and capacity.

1.2 Program Requirements

The program consists of 163 credit hours distributed as shown below.

	Credit Hours			
	Compulsory	Elective	Free	Total
University Requirements	18			18
Department Requirements	129	12	4	145
Total	147	12	4	163

University requirements (18 credits)

Course No.	Course Title	Credits	Prerequisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	English Language 1	3	-
11000322	English Language 2	3	11000103
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	1	-
11000108	Community Service	1	-
11000100	Introduction to Computer Science	1	-
Total		18	

Department Requirements (141 Credit Hours)

Compulsory Courses (129 Credit Hours)

Course No.	Course Title	Credits	Lecture	Lab	Prerequisite
10221101	Calculus I	3	3	0	-
10221102	Calculus II	3	3	0	10221101
10222101	General Physics I	3	3	0	-
10222102	General Physics II	3	3	0	10222101
10222115	General Engineering Physics Lab	1	0	1	10222102
10621100	Engineering Workshop I	1	1	2	-
10621101	Engineering Workshop I (Practical)	0	0	0	
10606140	Introduction to Architecture	1	0	0	-
10606111	Architectural Drawing I	2	0	6	-
10606112	Architectural Drawing II	2	0	6	10606111
10606113	Free Hand Sketching I	1	0	3	-
10606114	Free Hand Sketching II	1	0	3	10606113
10606116	Descriptive Geometry	2	1	3	10606111 or 10606102
10606121	Design Principles I	3	0	9	-
10606122	Design Principles II	3	0	9	Passing 10606121
10606201	Computer Aided Design (CAD) I	3	1	6	
10606211	Architectural Visual Training I	1	0	3	10606113
10606212	Architectural Visual Training II	1	0	3	10606211
10606215	Architectural Presentation	1	0	3	10606111, 10606114
10606221	Architectural Design Studio I	4	0	12	Passing 10606122
10606222	Architectural Design Studio II	4	0	12	Passing 10606221
10606241	History of Architecture I	3	3	0	10606112
10606242	History of Architecture II	3	3	0	10606241
10606251	Building Materials and Construction I	2	1	3	10606112
10606252	Building Materials and Construction II	2	1	3	10606251
10606253	Architectural Structures I (Statics & Strength of Material)	3	3	0	10221102, 10222102
10606254	Architectural Structures II (Concrete)	3	3	0	10606253
10606323	Architectural Design Studio III	4	0	12	Passing 10606222 & 10606111 & 10606112
10606324	Architectural Design Studio IV	4	0	12	Passing 10606323
10606340	Palestinian Architecture	2	2	0	10606242
10606341	Theory of Architecture I	2	2	0	10606242
10606342	Theory of Architecture II	2	2	0	10606341
10606344	Architecture of Islamic World I	3	3	0	10606242
10606353	Building Construction Systems I	3	2	3	10606252
10606354	Building Construction Systems II	3	2	3	10606353
10606355	Architectural Structures III (Steel)	3	3	0	10606254
10606360	Environmental Thermal Control	2	2	0	10222101
10606361	Mechanical Systems in Buildings	3	3	0	
10606370	Surveying for Architects	2	1	3	
10606371	Surveying for Architects (Practical)	0	0	0	Concurrent with 10606370
10606425	Architectural Design Studio V	4	0	12	Passing 10606324
10606426	Architectural Design Studio VI	4	0	12	Passing 10606425
10606430	Urban Design	3	2	3	10606324
10606462	Building Illumination	2	2	0	10606360

Course No.	Course Title	Credits	Lecture	Lab	Prerequisite
10606463	Architectural Acoustics	2	2	0	10606462
10606471	Architectural Internship 1	3	0	320	Department's Approval, 10606324
10606470	Building Economics and Construction Management	3	3	0	10221102
10606473	Human Behavior in the Building Environment	3	3	0	10606324
10606527	Architectural Design Studio VII	4	0	12	Passing 10606426
10606570	Architectural Professional Practice	3	0	0	10606426
10606571	Graduation Project 1	2	2	0	10606426
10606572	Graduation Project 2	4	0	12	10606527, 10606571
11032101	English for the Workplace	3	0	0	

2. Elective Courses (12 Credit Hours)

Course No.	Course Title	Credits	Lecture	Lab	Prerequisite
10606202	Computer Aided Design (CAD) II	2	1	3	10606201
10606203	Special Topics in Computer Applications in Architecture	2	1	3	10606201
10606431	Site Planning	2	2	0	
10606432	Urban Visual Analysis	2	1	3	10606324
10606433	Introduction to Planning	2	2	0	
10606434	Urban and Regional Planning	2	2	0	10606433
10606435	Housing	2	2	0	
10606436	Landscape Architecture	2	1	3	10606324
10606437	Morphology of Urban Form	2	2	0	10606324
10606438	Contemporary Architecture in the Arab Islamic City	2	2	0	10606343
10606439	Regional and Vernacular Architecture	2	2	0	
10606344	Architecture of the Islamic World II	2	2	0	10606343
10606420	Interior Architecture	2	1	3	10606324
10606441	Contemporary Architecture	2	2	0	10606342
10606442	Islamic Art and Decoration	2	2	0	10606343
10606446	Architectural Preservation	2	2	0	10606323
10606460	Design and Renewable Energy	2	2	0	10606360
10606461	Sustainable Architecture	2	2	0	10606226
10606464	Bioclimatic Design	2	2	0	
10606465	Building Performance Simulation	2	1	3	10606360
10606472	Architectural Internship 2 *	3	0	320	10606324 Department's Approval, Concurrent with 10606471
10606473	Architectural Photography	2	1	3	
10606474	Special Topics in Architecture	2	2	0	
10611468	Green Buildings	2	2		

* This course gives students the opportunity to undertake the Internship 1 + Internship 2 course during the Fall or Spring semester before the semester of graduation. If a student chooses to take the two courses (Internship 1 + Internship 2) he/she will be able to register for a total number of 6 credit hours only (the student will not be able to study any other courses during the semester). Students are selected according to their achievements, the number of credit hours they passed, and the availability of a training opportunity for a full semester.

Course Description

10606140 Introduction to Architecture

This course consists of an introduction to architecture as a profession - its concerns, challenges, potential and relationship with other environmental design and engineering fields including construction, urban planning, landscaping and interior design.

10606111 Architectural Drawing I

Development of fundamental skills in architectural drawing through the use of variety of graphic materials, methods and techniques.

10606112 Architectural Drawing II

Development of skills in architectural drawing and presentation. Methods of constructing one- and two-point perspectives, shades and shadows projection on two-dimensional drawings.

10606113 Free Hand Sketching I

Developing the ability to draw geometric compositions and still life. Increasing the artistic perception and the ability of rapid expression of required ideas. Using pencils and charcoal techniques and focusing on drawing principles such as: line, shadow, proportions, and perspective.

10606114 Free Hand Sketching II

Developing students' ability to draw architectural masses and spaces. Increasing the artistic perception and the rapid expression of ideas required in architectural design. Using different techniques such as ink, water colors and color rendering.

10606116 Descriptive Geometry

Fundamentals of descriptive geometry, based on orthographic projection within the limits of accuracy and empirical data. Describing objects and their interaction in a mathematical way. Solving engineering problems using graphic solutions.

10606121 Design Principles I

A study of the basic principles of the design process, through an introduction to general ideas and concepts of design theories.

10606122 Design Principles II

Development and application of basic concepts of design in several small and simple building projects.

10606201 Computer Aided Design (CAD) I

This course trains students on using professional software in different architectural applications. It focuses on assisting students in completing the tasks required in other core courses, such as architectural design and construction systems in architecture, including graphic analysis and information extraction for the purposes of design, production of preliminary design drawings, projects' presentation in two- and three-dimensions, as well as preparing technical drawings.

10606211 Architectural Visual Training I

Training on basic principles and elements of design. Developing a visual perception using exercises and two-dimensional applications that include elements of artistic compositions such as line, color, balance, proportions, rhythm, etc.

10606212 Architectural Visual Training II

Training on visual perception of mass and space and the relationship between them. Developing a sense of aesthetic value, and evaluating it using the basics of design, and visual effects through three dimensional exercises.

10606215 Architectural Presentation

Training on the different architectural presentation styles and techniques, such as pencils, ink, color rendering, watercolor, collage, etc., and other methods of architectural presentation.

10606221 Architectural Design Studio I

This course introduces students to the fundamentals of architectural design, laying down the subject's disciplinary foundations. Through small-scale and experimental design projects, the course introduces primary concepts and activities of architectural design – that is, envisioning human inhabitation, including space, form, order, structure, material, scale, and proportion.

10606222 Architectural Design Studio II

This course focuses on functional, visual and environmental aspects in architecture. It also looks at the design of buildings with an integrated program and moderate site requirements. Projects and exercises focus on the concepts of making three-dimensional forms—organizations, proportion, scale, human activities, and site/building design relationships.

10606241 History of Architecture I

This course aims to provide a conceptual overview of the historical architecture of early civilizations with an emphasis on locations in the ancient Middle and Near-East. The material covers prehistoric to Egyptian, Greek, and Roman architecture. The intent is to provide insight into the formal structure and technological challenges of the built environment. The course highlights significant events, styles, architects, buildings and other factors that explain why various cultures produced the architecture of their time.

10606242 History of Architecture II

The material of this course is organized through a series of lectures. The lectures are concerned with the historical architecture of the 4th-19th century civilizations that prevailed in the Middle East and Europe (i.e., early Christian, Byzantine, Islamic, Romanesque, etc.). The course lectures focus on the actual or potential contribution of these civilizations in the realm of architecture. The course involves students in analytical research and discussion to investigate an issue of their choice in the history of architecture; this investigation closely follows the topics discussed in the lecture course.

10606251 Building Materials and Construction I

Study of the properties and manufacture of building materials, including concrete, stone, block and brick. It also includes an introduction to construction systems and exercises to draw the details as well as the production of sets of technical drawings.

10606252 Building Materials and Construction II

The course includes completing the discussions of the issues raised in the course of Material and Construction (1), such as the role of metals and timber in the architectural construction. It also provides exposure to the forms and design of typical stairs and the study of some of the existing stairways as examples. This course also elaborates on the production of drawings using computers.

10606253 Architectural Structures I (Statics & Strength of Material)

This course introduces structural engineering, structural systems, load and functional requirements from a strict architectural perspective. It presents force and vector analysis in conjunction with the basic concepts of static equilibrium of particles and of rigid bodies. Three-hinged arches and determinates that truss analysis by the method of joints and methods of sections are exhaustively covered.

Engineering material properties which include, but are not limited to, axial stress and strain constitutive relations together with practical applications are introduced in detail. Section properties are introduced in preparation for section analysis in basic structural analysis. This includes the computation of

the centers of gravity, radii of gyration and moment of inertia. Shear and moment diagrams for beam elements under the action of concentrated and distributed loads are covered, along with the computation of flexural and shear stresses for symmetrical sections.

A brief introduction to beam deflection and axially-loaded columns are covered together with a brief exposure to column stability concepts.

10606254 Architectural Structures II (Concrete)

The course firstly introduces material properties and the various natures of loads and load combinations. It then briefly introduces the various structural systems used in building structures. It presents the various approaches to section design, namely the allowable stress design and the strength design method. Following the IBC and ACI design codes, the course covers the design of beams, slabs, columns, shear walls and foundations. Reinforcement details will be emphasized.

10606323 Architectural Design Studio III

Working with students through medium-sized projects which focus on the methodology of thinking through the architectural design process, linking architectural solutions to reality and proposed context and the production of designs that highlight the basics of environmental and structural solutions. The focus also rests on the use of computers in various stages of design, and projects presentation in particular.

10606324 Architectural Design Studio IV

Completion of the proposed methodology in Architectural Design 3 and projects geared to the local market. The selection of special themes and discussion of their influence on the proposed solutions takes place in this studio (technology, sustainability, economics, machine and architecture, society, ecology, architectural styles and others).

10606340 Palestinian Architecture

Study of traditional Palestinian architecture, traditional architectural elements, building materials and techniques.

10606341 Theory of Architecture I

Study of the major philosophies and trends that have formed different directions and movements in architecture.

10606342 Theory of Architecture II

Discuss the results of the industrial revolution and the changes on the level of construction materials and methods. It focuses on the theoretical orientations of contemporary architecture to identify the most important basic interstitial and formalistic characteristics.

10606343 Architecture of Islamic World I

This course surveys the art and architecture of the early Islamic world that prevailed in the Arabian Peninsula, historical Syria, Iraq and Egypt. It examines the form and function of architecture, as well as the social, historical and cultural contexts, patterns of use, and evolving meanings attributed to buildings by the users.

10606353 Building Construction Systems I

Advanced study of building construction systems of individual and composite materials. Evaluation and selection of systems with regard to the construction process, technological and economic, regularity and expressive constraints.

10606354 Building Construction Systems II

Advanced study of the building construction systems of individual and composite materials. Evaluation and selection of systems with regard to construction process, technological and economic, regularity and expressive constraints. Production of a complete set of working drawings with written descriptions.

10606355 Architectural Structures III (Steel)

The course gives a brief introduction to structural steel material properties, as well as sectional properties of structural elements. Design approaches are illustrated, i.e. the working stress design versus the load resistance factored design. Structural systems, loads and load combinations are introduced in detail and followed by sectional design of tension elements, beams, columns and connections (both bolted and welded). Standard connections details are introduced. American Institute of Steel Construction (AISC) code of practice is followed.

10606360 Environmental Thermal Control

This course consists of an introduction to the building physics, thermal comfort condition, and thermal insulation design, heating ventilation and air conditioning systems (HVAC), passive heating and computer simulation for thermal design.

10606361 Mechanical Systems in Buildings

Design of vertical transportations systems in buildings, including elevators, escalators, moving walks and ramps. Design of water supply and water networks for cold and hot water in buildings. Design of sanitation system in buildings, including water waste and solid waste.

10606370 Surveying for Architects

An introduction to the principles and fundamentals of surveying and its application in architecture.

10606425 Architectural Design Studio V

This course focuses on traditional architectural and urban environments in the old towns of Palestine. Exposure to architectural surveys, documentation of old buildings, conservation, adaptation of old buildings to contemporary uses and fitting new buildings in old contexts.

10606426 Architectural Design Studio VI

This course is designed to focus on and explore the environmental poetics of the building environment that respond to the basic natural and social context, such as the sun, wind, heat, cold, energy issue, and the existing social, cultural and architectural context of building. It also considers the complexity of site topography and vegetation, socio-cultural events, and variety of strategies for sustainable design in response to the humans need, economy, and existing building regulations.

10606430 Urban Design

This course will give the student a general idea about theories of urban design and how cities have been evolved. The theoretical part will introduce the students on different concepts, definitions and principles of urban design. The theoretical part will be supported by a studio. This course provides a framework for students to expand their design thinking. It will focus on how cities evolve and develop through time. It will be based on a close reading and analysis of urban fabric of a different context and environment. This course will also discuss how urban design relates to other disciplines, including planning, development, architecture and landscaping, and how it operates at many scales from the macro scale of the urban structure (planning, zoning, transport and infrastructure networks) to the micro scale of street furniture and lighting. In this course, students are asked to develop a scheme of two different areas in the city centre of Nablus, based on analysis of the existing situation and understanding potential and constrains of the site.

10606462 Building Illumination

This course provides an introduction to the fundamentals of lighting, theory of colours, illumination design and calculation, light sources, artificial lighting sources and design. Daylight design and their effect on the design of buildings. An introduction to computer aided lighting design.

10606463 Architectural Acoustics

Introducing the fundamentals of sound, sound absorption and reflection, sound transmittance, sound insulation. Insulation of buildings against noise pollution. Acoustical design principles for building spaces. Applications using instruments for measurement of acoustics.

10606361 Mechanical Systems in Buildings

Design of vertical transportations systems in building including elevators, escalators, moving walks and ramps. Design of water supply and water networks for cold and hot water in buildings. Design of sanitation system in building including water waste and solid waste.

10606470 Architectural Internship

The student enrolls in one of the accredited architectural or engineering firms or companies where he will train in the field of design and preparation of technical drawings. The student will identify the nature of the work in the engineering firms, and in addition, will be supervised by a specialist engineer. At the end of training, the student will submit a report on the training process and present it before a departmental committee or the practical training supervisor.

10606471 Building Economics and Construction Management

This course is designed to prepare students to handle the practical tasks to which the engineer is exposed in real life. The topics discussed in readings and lectures are selected to give the student a comprehensive understanding of the construction projects and the procedural matters associated with project execution. The course covers four main themes: tenders procedures and contracts administration, quantity surveying and cost estimate principles of engineering and building economics, in addition to project planning and time management. This course teaches the methodology, procedures and techniques involved in preparing and managing bids and contracts, preparing a bill of quantities, performing detailed cost analysis and estimates for each major construction component, time planning steps and project schedule preparation, and application of engineering economics in construction. Ethical considerations in bidding, budgeting and estimating are also discussed.

10606473 Human Behavior in the Building Environment

Examination of the mutual influence between human behavior and the building form. Study of the social and psychological concepts by which the behavior/environment relationship can be understood.

10606527 Architectural Design Studio VII

Development of design strategies on an urban scale and looking beyond the design of individual buildings. Focus on problems related to urban design, public spaces, and the integration of one project with the rest of the city.

10606572 Graduation Project 2

The course requires an individual resolution of the design problem selected by the student, approved by the faculty adviser, and then presented and defended in a formal public critique. The student will work on a comprehensive architecture

design of a building or a group of buildings where he should integrate different issues include a details design development of the selected project.

10606571 Graduation Project I

The main objective of this course is to introduce students to research methods, techniques and tools. Theoretical study and application of sampling, questionnaires, interviews, observations and experimentation are also introduced. The course guides students to prepare their final project.

10606570 Architectural Professional Practice

This course examines the professional architectural practice and the problems relating to job control both in the office and the field. It includes construction contracts, bidding supervision, building law, and the architect's relationship with the owner and professionals in the building industry.

10606202 Computer Aided Design (CAD) II

This course focuses on three-dimensional programs and their use in the development of the architectural design process and project's presentation, especially those related to the role of multimedia (such as animation and virtual environments).

10606420 Interior Architecture

History and theory of interior design and its related components. Consideration of design determinants including behavioral, activity, environmental and technological factors. Design analysis and synthesis.

10606446 Architectural Preservation

Examination of the contemporary theories, techniques and practice of urban and architectural historic preservation and their relevance to regional and local preservation problems. Discussion of historical, legal, political, financial and programmatic aspects.

10606344 Architecture of Islamic World II

This course surveys Islamic art and architecture, especially from the Fatimid, Mamluk and Ottoman eras. It examines the form and function of architecture, as well as the social, historical and cultural contexts, patterns of use, and evolving meanings attributed to buildings by the users. All major themes and genres of architecture and art to be covered: religious and secular, civil and military architecture and art, decorative and traditional arts like calligraphy and their relationships to architecture and design. Special emphasis will be placed on the themes of ritual, religion and political pride and power.

10606441 Contemporary Architecture

Study of the contemporary trends and approaches in architecture through an analysis of important representative examples of contemporary buildings.

10606442 Islamic Art and Decoration

The course explores the astonishing rise of Islamic art from the 7th century AD onwards and its relation to the worlds of classical antiquity - Byzantium, Persia, and beyond. A broad variety of themes will be considered, from architecture to the decorative arts and calligraphy, will be studied and analyzed both in of themselves and as windows of early Islamic society, its roots and cosmopolitan and symbolic dimension.

10606460 Design and Renewable Energy

This course aims to provide students with a fundamental understanding of passive solar design principles and to demonstrate their applications in the analysis and design of climate responsive buildings. The course will provide the students in architectural engineering with the passive solar design concepts and materials, thermal mass, shading concepts, thermal comfort, and green building concepts, in addition to studying solar energy.

10606461 Sustainable Architecture

This course introduces the students to the green architecture principles, including passive design solutions, building technologies, the integration of renewable energy in architectural design, comfort conditions, passive heating/cooling, material selection, and energy efficiency in buildings.

10606464 Bioclimatic Design

Design of buildings and spaces (interior, exterior, outdoor) based on local climate, aimed at providing thermal and visual comfort, making use of solar energy and other environmental sources. Emphasis will be made on different elements of bioclimatic design, such as passive solar systems incorporated onto buildings and the utilization of environmental sources (for example, sun, air, wind, vegetation, water, soil, sky) for heating, cooling and lighting the buildings.

10606465 Building Performance Simulation

This course focuses on design decisions that impact energy, thermal, visual and acoustic comfort, with a strong emphasis on building simulation tools. This course provides students with an understanding of the nature of a building's thermal comfort, building envelope behavior, ventilation requirements, indoor air quality, passive cooling systems, energy conservation, and the importance of building simulation in achieving high performance buildings.

10606436 Landscape Architecture

Review of history and theories of landscape architecture. Introduction to design of the outdoor environment covering residential and small scale landscape developments. Project program, site selection and analysis, concept generation and design schemes.

10606431 Site Planning

A comprehensive study of the concept and context of site planning. Providing students with the basic principles and phases of site planning process including the analysis of physical characteristics of sites, selection and distribution of activities, transportation systems and design elements applicable to site.

10606435 Housing

Introduces students to the fundamentals of housing design and to problem solving, such as planning housing projects and residential areas. The course introduces students to the basic principles of planning local and international housing projects.

10606432 Urban Visual Analysis

Examination of urban form and space with regard to visual principles and aesthetic values. Survey and analysis of urban areas. Theory of visual perception and its application to urban form problems.

10606433 Introduction to Planning

Introduction to the fundamentals of city planning and its importance and relationship to the building environment. Study of the main characteristics and components of the city, and the evolution and development of cities. Concise study of the planning process, design of cities and preparation of land use plans.

10606434 Urban and Regional Planning

A comprehensive theoretical and practical study of the fundamentals of urban and regional planning. The historical development and phases of the planning process, content and characteristics and methods of preparing planning documents and plans, such as the comprehensive plan and land use plan. Also, it introduces some of the planning procedures, such as land subdivision and reserved real estate. It provides also a general idea of the planning of particular areas in the city: city center, industrial zones, archeological sites, and agricultural and recreational areas.

10606437 Morphology of Urban Form

Study of the building form of urban areas, which consists of street patterns and shapes, urban design, building sizes and shapes, architecture, population density and patterns of residential, commercial, industrial and other uses. It involves examination of methodology/ techniques for urban morphology analysis, including traditional systematic approaches and emerging ones. This course will allow students to understand modern urban morphology and urban systems. The course will include discussions about the historical development of cities, geographic models of cities, suburbanization, social landscape of cities, and urban problems.

10606438 Contemporary Architecture in the Arab Islamic City

Study of the development and focus on contemporary architecture and architects in the Islamic and Arab world through analysis of important examples.

10606472 Architectural Photography

Techniques of photographic image generation. Computer application to enhance the use of photography in architectural design and analysis. Photography as a communicative aid in architectural design.

10606473 Special Topics in Architecture

Study of specific architectural topics under the direction of a faculty member in the department. This course may be repeated for a maximum of four credits.

10611468 Green Buildings

This course is designed for senior students with an emphasis on increasing efficiency with which buildings use resources – energy, water and materials, and improving health and comfort of people using buildings.

There are five areas that will be covered through classroom study: water conservation, energy conservation bioclimatic design and through appliances, mechanical conservation, conservation through material usage, and several green buildings codes and certification systems.

Staff Members

Name	Academic Rank	University of Graduation
Dr Khalid Qamhiya	Assistant Prof.	University of Glasgow, UK.
Areej Afeefy	Teaching and Research Assistant	An-Najah National University, Palestine.
Dr Sameh Muna	Assistant Prof.	University of Milan, Italy.
Dr Iman Muhammad Al-A'mad	Associate Prof.	University of Glasgow, UK.
Dr Haytham Al-Ratrout	Assistant Prof.	University of Strathclyde Uk.
Asaad Arandi	Instructor	University of Strathclyde Uk.
Muhammad Atta Yousef	Assistant Prof.	University of York, UK.
Wassim Salameh	Teaching and Research Assistant	An-Najah National University, Palestine.
Maysa Arafat	Teaching Assistant	An-Najah National University, Palestine.
Hasan Al-Qadi	Assistant Prof.	Graz University of Technology, Austria.
Muhammad Allam Atmeh	Instructor	An-Najah National University, Palestine.
Dr Khalid Hijazi	Assistant Prof.	Berlin University of the Arts, Germany.
Muna Qanaqilo	Teaching and Research Assistant	An-Najah National University, Palestine.
Ibrahim Abu Arrah	Teaching and Research Assistant	An-Najah National University, Palestine.
Muna Qamhya	Teaching and Research Assistant	An-Najah National University, Palestine.
Arwa Shaer	Teaching and Research Assistant	An-Najah National University, Palestine.
Duaa Mallah	Teaching and Research Assistant	An-Najah National University, Palestine.
Refaa Sukkar	Teaching and Research Assistant	An-Najah National University, Palestine.
Alaa Al-Bzour	Teaching and Research Assistant	An-Najah National University, Palestine.
Alaa Hasanein	Teaching and Research Assistant	An-Najah National University, Palestine.
Nisreen Arda	Teaching and Research Assistant	An-Najah National University, Palestine.

{ Building Engineering Department }

Introduction

The Building Engineering program, the eighth program in the Faculty of Engineering, was established in 2002, and its first class graduated in 2006. This program can be considered as a link between architecture, planning, and the environment on one side, and the various construction engineering sciences such as civil engineering, mechanical engineering, electrical engineering, and computer engineering on the other side. The focus is on the process of integrating the various engineering aspects of the building to achieve its optimal design that is characterized by durability and safety, as well as comfort and preservation of energy.

The significance of this specialization stems from the need to pursue the rapid technical development in the various aspects of construction industry. This industry is still experiencing steady progress over time and is utilizing recent discoveries in construction for the convenience and comfort of human beings. This all takes into consideration the growing interest in environmental aspects in building designs including the design of green, and earthquake-resistant building, and according to the strategic planning for sustainable development.

The program emphasizes three aspects: structures, environmental systems in architecture, and project management and construction methods. Students wishing to major in this field should finish 166 credit hours, and applies to students admitted to the college of engineering in 2008 only.

Vision

The program seeks distinction as a pioneer in providing high quality building engineering education in Palestine and the Middle East that is responsive to the local and regional needs of the building industry within the socio-economic and environmental context.

Mission

The mission of the Building Engineering Program at An-Najah National University is to provide the highest quality teaching, research, and service to students and community. Its mission is also to prepare students for successful careers in the design, engineering, and construction of buildings with special emphasis on green buildings that reduce the environmental impact of the built environment through the use of integrated systems and appropriate materials.

Educational Outcomes

The outcomes that students are expected to have attained upon graduation with the Bachelor of Science degree in Building engineering are:

- The ability to apply knowledge of mathematics, science, and engineering
- The ability to design and conduct experiments
- The ability to analyze and interpret data
- The ability to design a system or component to meet desired needs
- The ability to function on multidisciplinary teams
- The ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibilities
- The ability to communicate effectively through writing and/or drawing
- The ability to communicate effectively through oral presentations
- An understanding of the impact of engineering on society
- An understanding of the necessity to engage in life-long learning
- A knowledge of contemporary issues in civil, environmental, and Building engineering
- The ability to use modern engineering techniques, skills, and tools

Objectives

The B.S.E. in Building Engineering program prepares graduates to achieve one or more of the following:

1. Successfully pursue a career in building engineering or a related field.
2. Pursue advanced studies in a variety of Building engineering disciplines, including but not limited to structural, mechanical systems, electrical systems, or construction management.
3. Successfully pursue life-long learning in their chosen field and remain active in professional societies.
4. Make scholarly contributions to their field through publications, technical reports, and technical presentations.
5. Conduct applied research and development across disciplines to advance technology and foster innovative techniques.
6. Apply principles of sustainability

Areas of Knowledge

The areas of knowledge that define these objectives include both technical and non-technical areas.

Technical areas are:

- Elementary—the fundamentals for building engineering, including basic science and mathematics, building design and construction processes; overview of building systems; elementary principles and processes of architecture; and laboratory measurement and data analysis;
- Intermediate—introduction to building systems and their components, with corresponding analysis of electrical, HVAC, and lighting and acoustical systems as well as structural elements and components;
- Proficiency—design, integration, and advanced analysis of electrical, HVAC, lighting, and structural systems; as well as the codes and recommended practices that govern these building systems; and
- Specialization—advanced integrated design, coupled with industry experience via internships, for building lighting and electrical system design, building HVAC systems design, building structural system design, and construction engineering and management.

Non-technical areas include:

- Professional life, including methods of time and resource management, and professional ethics;
- Processes and requirements of written and oral communication.

Requirements for admission in Building Engineering

Admission to the program is competitive- based. Students are admitted on the basis of their averages in the General Secondary Certificate Exam (scientific or industrial tracks) and according to the regulations for admission at the University.

Requirements for a B. SC. degree in Building Engineering

All students wishing to obtain a B.Sc. in Building Engineering must complete **167 credits**. These include university, science and math, humanities, social sciences as well as department compulsory and elective courses.

REF.	Type of requirement	Credits	Electives	Total hours
1	University	18	-	18
2	Humanities	6	-	6
3	Science and mathematics	32	-	32
4	Free courses		2	2
5	Department requirements	94	12	109
Total				167

Course #	Course title	Credit hours	Prerequisite
11000127	Introduction to Computer Science	1	-
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	-
11000105	Palestinian Studies	3	-
11000108	Community Service	1	-
11000117	Leadership and Communication Skills	1	-
11000322	University English II	3	11000103
Total		18 hours	

University requirements (18 credits)

Humanities (6 credit hours): two courses (3 credits each) one in economics and the other in technical writing and ethics.

Course #	Course title	Credit hours	Prerequisite
10611471	Economics of Building and Quantity Surveying and Cost	3	10611351
10611461	Professional Practice and Technical Writing	3	10611350
Total		6	

II: Science and mathematics (32 credits)

Course #	Course title	Credit hours	Prerequisite
10221101	Calculus I	3	-
10221102	Calculus II	3	10221101
10222101	General Physics I	3	-
10222102	General Physics II	3	10222101
10222115	Laboratory of General Physics for Engineering	1	10222101
10223101	General Chemistry I	3	-
10223107	Chemistry Lab	1	10223101 or concurrently
10221201	Calculus III	3	10221102
10221202	Engineering Mathematics	3	10221201
10221230	Statistics and Probability for Engineers	3	10222102
10626251	Numerical Analysis for Engineers	3	10636111
10631311	Methods of Quantitative Analysis II	3	10221230
Total	32 hours (according to the requirements of ABET)		

Free courses (2 hours)

An elective course offered by other faculties of the university with the approval of the department.

Department requirements (97 credits)

Course #	Course title	Credit H.	Prerequisite
10621100	Engineering Workshop I	1	
10621101	Engineering Workshop (Practical)	0	Concurrently with 10621100
10606102	Engineering Drawing	2	
10606115	Descriptive Geometry	2	10606102
10636111	Computer Programming	3	
10601110	Statics	3	10222101 and 10221101
10601205	Building Materials	2	-
10601206	Building Materials Laboratory	1	Concurrently with 10601205
10601207	Mechanics of Materials	3	10601110 and 10221102
10601208	Mechanics of Materials Lab	1	Concurrently with 10601207
10621210	Dynamics	3	10601110
10611310	Analysis of Building Structure	3	10601207
10611311	Analysis of Building Structure Lab	1	Or concurrently 10611310
10611315	Structural Design of buildings I- (concrete)	3	10611310
10611416	Structural Design of Buildings II (concrete)	3	10611315
10611418	Design of Earthquake-Resistant Buildings	3	10611416
10611413	Structural Design of Buildings (metal)	3	10611310
10611200	Surveying	2	10221230
10611209	Surveying Lab	1	Concurrently 1160200
10611260	Basics of Architectural Design	2	10606115
10611300	Soil Mechanics and Foundations	3	10601207
10611301	Fluids and Thermal Sciences	3	10621210
10611307	Laboratory of Soil Mechanics and Foundations	1	Concurrently with 10611300
10611308	Fluids and Thermal Sciences Lab	1	Concurrently with 10611301
10611320	Computer -Aided Building Design Using AutoCAD + Revit	3	10611260
10611342	Electrical Installations and Plans	2	10222102
10611330	Environmental Systems design I (lighting)	3	10611342
10611331	Environmental systems design II (thermal)	2	10611301
10611333	Building Core Systems	3	Fourth year level
10611341	HVAC Systems I	3	10611331
10611432	Passive Solar Energy Systems Design	3	10611331
10611431	Environmental Systems Design (acoustics)	2	10222101
10611350	Building Construction I	3	10601205 and 10611315
10611351	Building Construction II	2	10611350
10611370	Bid Procedures and Construction Contracts Administration	2	10601205
10611472	Construction Project Management	3	10611471
10611474	Operation and Maintenance of Buildings	2	10611333; 10611341
10611400	Practical Training	3	Fourth year level with dept.'s permission
10611460	Integration of Building Engineering Systems	3	Fifth year
1032101	English in the Workplace	3	1000322
10611590	Graduation Project I	2	Concurrently with 0611460
10611591	Graduation Project II	3	10611590
	Total	97	

2- Elective courses the student is to take 12 credit hours:

10611511	Advanced Concrete Systems Design	3	10611416
10611513	Structural Analysis (Advanced)	3	10611310
10611515	Dynamic Analysis of Structures	3	10611310
10611512	Design of Fire-resistant Buildings	3	10611413 and 10611416
10611570	Special Topics in Building Engineering	3	Department permission
10611510	Modern Construction Systems	3	10611315; 10611413
10611517	Advanced Metallic Systems Design	3	10611413
10611516	Building Envelope	3	10611332, 10611350
10601575	Computer Application in the Management of Construction Projects	3	10611472
10601572	Bid Management and Advanced Contracts	2	10611472
10611500	Seminar	1	
10611533	Acoustical Simulation for Buildings	2	10611431
10611530	Lighting Simulation and Design for Buildings	2	10611330
10611534	Green Buildings Codes and Design	2	10611331 and 10611333
10611531	Thermal Simulation of Buildings	2	10611331
10611541	HVAC Systems II	3	10611341
10611521	Advanced Computer -Aided Design of Buildings	3	10611320

Course Descriptions

10611200 Surveying

Introduction, theory of errors, Distance measurement, Leveling, Theodolite and its applications, Electronic distance measurement, Coordinate geometry and traverse surveying.

10611209 Surveying lab.

Students in this course are supposed to apply in the field the principles that are being taught in the theoretical Surveying course (61322); mainly areas and volumes, route surveying, horizontal control surveys, introduction to photogrammetry and global positioning systems (GPS).

106118301 Fluid and Thermal Sciences

This course begins with an introduction to properties of fluids, fluid statics and fluid dynamics applications of conservation of energy to fluid systems. Then it moves to first and second laws of thermodynamics, irreversibility and availability with application to pure substances and ideal gases, one dimensional conduction and convection heat transfer.

10611308 Fluid and Thermal Sciences Lab.

This lab includes two parts. The first part is devoted to show students the practical processes of heat transfer. Experiments include process of conductors, and heat transfer in fluid layers. However, the second part aims at showing them the practical applications of fluid mechanics. Experiments include calibration of pressure gauge and pressure measurement, flow through venture meter, orifice and nozzle, measurement of impact of fluid jet, measurement of flow fraction losses along a pipe, measurement of minor losses along a pipe flow and Reynolds number.

10611330 Environmental Systems I - Illumination

Topics covered in this course include light, vision and perception, properties of light, quantities, units and measurements, natural light in buildings, color systems, lighting sources (electric light), light and form, lighting calculation methods and lighting design process.

10611331 Environmental Systems II- Thermal Systems

This course covers several topics: thermal comfort in buildings (temperature, humidity, ventilation and odors), heat transfer by conduction convection and

radiation in buildings, building envelope and insulation, heat loss and heat gain in buildings, introduction to heating and cooling strategies and under floor heating system design.

10611333 Fundamentals of Building Core Systems

This course is a study of vertical transportation in buildings including elevators and escalators, water supply system design, sanitation system design, solid waste disposal and fire alarm and protection systems.

10611341 HVAC Systems

This course is a study of air-conditioning processes; psychometric and humid air calculations, heating-and cooling calculations, hot-water systems – theory and design; duct systems – theory and design.

10611431 Building Acoustics

In this course students are introduced to fundamental of sound, the ear and the perception of sound , ancient building acoustics, building materials and sound, sound reflection, absorption, transmission, room acoustic design, room acoustic calculation, sound transmission in buildings, noise control, linked rooms, auditorium and other building designs, and electrical acoustical systems.

10611432 Passive Solar Systems Design

This course begins with an introduction to sun movement, azimuth and altitude angles, passive solar engineering, solar windows, solar walls (Trombe walls), solar roof, solar chimneys, solar room, and solar forced ventilation, shading design, thermal mass and thermal storage for solar energy. The course ends with design and analysis of different types of solar collectors and solar water heaters.

10611532 Computer -Aided Illumination Design

This course focuses on design and analysis of lighting for outdoor, sports, floodlighting and interior applications including economic analysis, modeling algorithms and design criteria. Different software applications are included using Dialux, Ecotect and other programs.

10611200 Surveying

This course includes an introduction to surveying, tape measurements, leveling, Theodolite and its applications, electronic distance measurement, coordinate geometry, areas and volumes.

10611300 Geology and Soil Mechanics

This is an introductory course in soil mechanics and foundation engineering. Students will learn fundamental principles of soil behavior including physical and mechanical properties, as well as classification, identification, compaction and soil-testing. Students will also be introduced to principles of stresses

within soil mass due to own weight and external loads as well as theory and applications of consolidation in addition to shear strength. The course ends with an introduction to foundation engineering including site investigation, bearing capacity, and lateral earth pressure and pile foundation.

10611310 Structural Analysis for Buildings

The course develops students' skills to perform analysis of structures, with emphasis on buildings and their structural elements. The course provides a revision of analysis of determinate structures (trusses, beams, frames etc.) with the focus on arches and cables. This involves calculations of deflections using energy methods. The course also introduces the stiffness method for the analysis of indeterminate structures.

10611311 Structural Analysis for Buildings Lab

The course develops students' skills in the use of approximate methods for the analysis of structures. It also involves applications through computer simulations on topics covered in Structural Analysis for Buildings course as well as the approximate methods introduced in this course.

10611350 Building Construction Engineering

This course focuses on preparing the site for construction, site investigation, foundation, form work, steel work, concrete, types of building and walls, brick work, masonry and stairs.

10611351 Building Construction Engineering II

This course focuses on plastering and wall tiling, floors, painting, decoration and , internal partitions, light weight roofs, clay roofing tiles, carpentry work, insulation materials and joints.

10611390 Reinforced Concrete Structure I

Students are introduced to the definitions and design theories, analysis and design of structural elements for bending, shear force and axial force. There will be application on design of structural elements such as slabs, beams, short columns and isolated (single) footings. This is in addition to development of reinforcing steel.

10611418 Earthquake Resistant Building Design

This course is an introduction to seismology, site effect factors (local geology and soil conditions), an introduction to earthquake engineering and structural dynamics, dynamic response of structures, the influence of architectural and structural configuration on seismic performance of buildings, eccentricity and torsion consequences in structures, seismic forces and building codes, seismic design of reinforced concrete frames, seismic design of reinforced concrete shear walls; special topics on earthquake engineering; seismic retrofit and upgrading fundamentals, etc.

10611315 Structural Design for Buildings I Concrete

The course provides students with the ability to analyze and design reinforced concrete members and an understanding of their theoretical behavior. The primary focus is on the analysis and design of reinforced concrete members (beams, slabs and short columns) subjected to shear and torsion, and uni-axial bending. In addition, the course covers the principles of reinforcement detailing of reinforced concrete members.

10611416 Structural Design for Buildings II Concrete

The course involves the design of reinforced concrete floor systems including one way slab, two way solid and ribbed slabs, and waffle slab. The course also covers the design of footings including isolated footings, combined footings, pile footings and mat foundation.

10611417 Structural Design for Buildings Lab

The course involves applications, through computer simulations, on topics covered in Concrete Structures and Buildings and Design of Concrete Systems for Buildings courses.

10611413 Structural Design for Buildings III Metal

The course aims at applying the principles of engineering mechanics to design and provides detailing of simple structural steel systems used in buildings. The course covers the principles of structural design, structural safety, steel as a material, methods of structural steel design, design of steel trusses, steel frames and connections. In addition, the course provides an introduction to fire engineering design of steel structures.

10611511 Advanced Design of Concrete Systems

The course is a study of deflection and crack width computations in concrete members, design of slender columns, design of retaining walls, design of simple water tanks, and use of membrane theory to analyze and design thin shell structures.

10611471 Building Economics, Quantity Surveying and Cost Estimate

This course is designed to provide building engineering students with a thorough understanding of building economics in particular, and engineering economics application in construction in general. It covers the main concepts of economical design and construction cost; it also provides students with the essential knowledge that is required to estimate the cost of various building components including electro-mechanical works. This is in addition to quantity surveying methods. This course also highlights issues related to the impact of green buildings design on both buildings construction costs and operating costs. It also covers the principles of engineering economics and its application in construction industry.

The topics discussed in readings, lectures and term project are selected to give the students a comprehensive understanding of the fundamentals of economic design, and buildings construction cost components and estimation methods, quantity surveying principles and methods, in addition to investment analysis and economic comparison.

10611370 Bid Procedures and Construction Contracts Administration

This course is designed to provide building engineering students with the necessary skills that they need in their career life. It covers practical issues encountered by various agencies and parties in the construction business environment and are related to the procedural matters in projects execution. The topics discussed in readings, lectures and case study review are carefully selected to give the students a comprehensive understanding of proposal writing, project delivery systems, and construction contracts and bid procedures. This is in addition to highlighting issues related to specifications and their interrelation with drawings. The course covers four main themes: proposal writing, tenders and bids procedures, contract types and contract administration, in addition to types of specifications and drawings.

This course also teaches the methodology, procedures and techniques involved in preparing and managing bids and contracts, bid and contract documents, construction contract types, projects delivery systems, the roles and responsibilities of construction parties, bill of quantities, specifications and drawing types. Ethical considerations in bidding and contracts are also discussed.

10611472 Construction Project Management

This course is designed to prepare students to handle the practical and managerial tasks the engineer is exposed to in real life situations. It covers the main concepts in the field of planning, scheduling, organizing and controlling safety and quality control. In addition it covers a construction project schedule as a network of activities, an understanding of the logic diagram; network analysis through forward pass, backward pass, critical path and float. Updating, evaluation and use of schedule in cost crashing and resource leveling are explained. The course caps with utilization of application software systems.

10606102 Engineering Drawing

This course covers several topics including basic drawing techniques and materials used orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

10611260 Principals of Architectural Design

This course is an introduction to architectural design sketches techniques. As engineering design requires a combination of organization, analysis, and communication skills, this course is the primary medium for design concepts.

This gives students Building Engineering students an essential way of thinking, so that they can analyze and solve complex building problems in the future.

10611460 Integration of Building Systems

Students' courses in the Department of Building Construction meet with other engineering disciplines, so there is a need to find a link between most of the information, taken by the student in the first 3 years of his/ her study, in order to give a comprehensive view when solving the problems that may face the student in his/her career. This course is meant to make a relationship between architectural design, structural design, environmental design, and mechanical design of building construction.

Staff Members:

Name	Degree	University of graduate
Mutasem F. Ba'ba	Assistant Professor	PhD Electrical Engineering (Energy), Virginia State University. USA, 1987
Jalal N. Dabbeek	Associate Professor	University of Technology, Romania, 1989
Monther Dwaikat	Assistant Professor	Michigan State University ,USA ,2009
Muhannad J. Haj Hussain)	Assistant Professor	France(scholarship leave for PhD)
Muayed A. Salhab	Lecturer	University of Starthclyde, UK, 2002
Luay N. Dwaikat	Lecturer	Istanbul Technical University, Turkey, 2004
Narmeen R. Barq	Lecturer	An- Najah National University, Palestine, 1998
Ahmad M. Haj Saleh	Lecturer	Malaysia(scholarship leave for PhD)
Fadi A. Fatayer(onleave)	Lecturer	Saudi Arabia (scholarship leave for M.Sc. KFU)
Zenat Nayef mohammed	Teaching Assistant	An-Najah National University, Palestine, 2009
Haitham Sawalha	On leave	An-Najah National University, Palestine, 2010
Alaa' Shaheen	On Leave	An-Najah National University, Palestine, 2011

{ Chemical Engineering Department }

Vision

“A recognized leading department in chemical engineering education and research, preparing its graduates to be highly demanded in the industry, locally and regionally, for their professional skills, scientific background, and ethical and professional values”.

Mission

Contribute to the advancement and development of chemical industry in Palestinian society through the pursuit of innovative teaching and learning, active learning and cutting edge scientific research.

- Pursue regional leadership in chemical engineering fields.
- Provide enhanced practical, applied and training related aspects to the students that serve the Palestinian Industry
- Graduate engineers with abilities and skills to analyze and interpret data design and conduct experiments in the field of chemical engineering.
- Apply knowledge to solve chemical engineering problems in global, economic, societal, and environmental contexts, considering social, political, ethical, health, safety, and sustainability aspects, within a life-long learning framework.

The PO's of Chemical Engineering Program

1. An ability to apply knowledge of mathematics, science, and engineering to chemical engineering problems.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability .
4. An ability to function on same and multi-disciplinary teams.
5. An ability to identify, formulates, and solve chemical engineering problems and related fields.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively orally and in writing.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for, and an ability to engage in life-long learning.
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

PEO's of Chemical Engineering Program

Graduates of Chemical Engineering program at An-Najah National University are expected to have the following PEO's

1. Our graduates will be able to demonstrate professionalism in ethical, safety, economical and environmental factors with high ability to work within a team with good communication skills.
2. Our graduates will pursue life-long learning through higher education and/or professional developments while reserving the cultural heritage of the Palestinian people.
3. Our graduates will be prepared to work in different countries and shall be sensitive to cultural aspects with strong foundation in applied chemical engineering to meet the standards of local and international needs.

Study Plan

The program consists of 158 credit hours distributed as shown below

Graduation requirements

The Bachelor degree in Chemical engineering requires a minimum of 158 credit hours of course work. A detailed distribution of the minimum credit hours required for obtaining the Bachelor degree in chemical engineering is shown below:

	Compulsory	Elective	Free	total
University requirements	18			18
Department requirements	33 math and science 96 compulsory courses	9	2	140
Total	147	9	2	158

Admission Requirements:

Fulfillment of the specialization conditions in the engineering faculty taking into account the capacity of the program.

Graduation Requirements

University requirements (18 credits)

Course no.	Course title	Credits
11000101	Islamic Culture	3
11000102	Arabic language 1	3
11000103	English language 1	3
11000322	English language2	3
11000105	Palestinians studies	3
11000117	Leadership and communication skills	1
11000108	Community service	1
11000127	Introduction to computer	1

Department requirements

A. Mandatory courses offered by the Chemical engineering Department

They include:

Course no.	Course Name	C.H.	Prerequisite
10223101	General Chemistry 1	3	
10223107	General Chemistry 1 Lab	1	10231101 or concurrent: 10231101
10222101	General Physics I	3	
10222115	General Eng. Physics Lab	1	
10222102	General Physics II	3	10221101
10221101	Calculus I	3	
10221102	Calculus II	3	10211101
10221201	Calculus III	3	10211102
10221202	Engineering Mathematics	3	10211201
10221230	Statistics and Probabilities for Engineers	3	
10223102	General Chemistry. 2	3	10231101
10223108	General Chemistry .2 Lab	1	10231102, or concurrent 10231102, 10231107
10626251	Numerical Analysis for Engineers	3	10636111 ,10221202

A.1 Math and Science Courses (33 CH)

A.2 Core Chemical Engineering program compulsory Courses (96 CH)

Course no.	Course Name	C.H.	Prerequisite
10636111	Programming Languages	3	
10621100	Engineering workshop	1	
10621101	Engineering workshop practice	0	
10606102	Engineering Drawing	2	
11032101	English at work	3	
10223211	Analytical Chemistry	3	10223102 ,10223108
10223215	Analytical Chemistry Lab	1	10223108 ,10223211 or concurrent: 1 0223211
10223231	Organic Chemistry	3	10223102 ,10223108
10223235	Organic Chemistry Lab	2	10223108 .10223238 or 10223231 or or concurrent: 10223231 or 10223238
10621522	Operation Management	3	0626202
10621219	Engineering mechanics	3	10221101, 10223101

Core courses offered by department

Course no.	Course Name	C.H.	Prerequisite
10626301	Professional Engineering Concepts	3	11000322
10626201	Computer aided Chemical Engineering drawing	2	10606102
10626202	Principles of Chemical Engineering Calculations	3	10223102
10626213	Properties of Engineering Materials and Corrosion	3	10223102 , 10621219
10626231	Fluid Mechanics	3	10222101
10626335	Thermodynamics I	3	10223102
10626336	Thermodynamics II	3	10626335
10626339	Unit Operations Lab I	1	10626232
10626468	Unit Operations Lab II	1	10626362 or 10626339, 10626453
10626478	Chemical Technology Lab1	1	10626320
10626479	Chemical Technology Lab II	1	10626478
10626362	Unit Operations	3	10626361
10626381	Safety Engineering	3	10626335
10626453	Process Control	3	10626452
10626475	Soap and Detergent Manufacturing	2	10626320
10626483	Environmental Engineering	3	10626362
10626474	Chemical Technology 1	3	10626362
10626476	Chemical Technology II	3	10626474
10626591	Graduation Project I	2	Department Approval
10626594	Graduation Project II	3	10626591
10626452	Process Modeling in Chemical Engineering	3	10626361 ,10626251
10626232	Heat Transfer	3	10626231,10626202
10626361	Mass Transfer	3	10626232
10626320	Chemical Reaction Engineering	3	10626335 , or 10223231
10626444	Computer Aided Equipment Design	4	10626361,10626320
10626445	Plant design and economics	4	10626444,10626201
10626390	Internship1	3	

Elective courses 9

Course no.	Course Name	C.H.	Prerequisite
10626464	Applications on Transport Phenomenon	3	
10626465	Membrane Separation	3	
10626472	Inorganic Chemical Technology	3	
10626473	Fine Chemical Industries	3	
10626554 10626551	Design and Analysis of Experiments	3	
10626555	Computer Applications in Chemical Engineering	3	
10626566 10626521	Separation Processes	3	
10626567	Particulate technology	3	
10626571	Food Processing Technology	3	
10626572	Polymers Technology	3	
10626574	Mining	3	
10626575	Petrochemical Technology	3	
10626577	Biochemical Technology	3	
10626584	Water and Waste Water Treatment	3	
10626585	Solid Wastes	3	
10626586	Air Pollution	3	
10626587	Environmental Impact Assessment	3	
10626595	Special Topics in Chemical Technologies	3	
10626596	Special Topics in Separation Processes	3	
10626597	Special Topics in Environment	3	
10626391	Internship 2 ,0626390 Concurrent	3	

Free courses

Free courses 2

COURSE DESCRIPTION

CHE 10626202 Principles of Chemical Engineering Calculations

This course aims at studying material and energy balances in feedback and continuous systems, as well as chemical reaction and non-reaction systems. The course also covers multiple and single stage systems, concepts of units, chemical engineering calculations, synthesis of chemical processes, analysis of chemical processes by material and energy balances, behaviors of fluids, enthalpy calculations for changes of temperature, phase and chemical reactions, unsteady state of energy and material balances. The course ends with a full study of an industrial operation.

CHE 10626213 Properties of Engineering Materials and Corrosion

This course aims to introduce students into engineering materials and the relation between their properties and uses including: materials classification, crystal structures of metals, mechanical properties, failure and mechanics of fracture, destructive and non destructive tests, metallic phase diagrams, alloy systems and heat treatment methods for ferrous and non-ferrous alloys. Also students will study the principles of corrosion, their types, and methods of prevention.

CHE 10626231 Fluid mechanics

This course will provide the student with an overview of key fluid mechanics topics. These include fluid properties, such as viscosity and pressure and its measurement. It also covers the flow of fluids, Bernoulli's equation, the general energy equation, Reynolds's number, laminar and turbulent flows, energy losses due to friction and minor losses, and pump selection and applications. The course also covers calculations for fluid flow systems and their classes.

CHE 10626232 Heat Transfer

This course is a study of thermal properties of materials, conduction through simple shape and composite materials free and forced convection, overall heat transfer coefficient, dimensional analysis, steady and unsteady state operations. Film and drop wise condensation, nucleate and film boiling of liquids (evaporation) students also learn heat exchangers types and design.

CHE 10626251 Numerical Analysis for Engineers

The course aims to clarify the basic skills of numerical methods such as: error calculations, solving linear and non-linear equations and their systems, numerical differentiation and integration, solving ordinary differential equations and their systems, curve fitting and interpolation. Students will be practiced on some special software related to numerical methods.

CHE 10626320 Chemical Reaction Engineering

This course aims at making students acquire sufficient knowledge about chemical reactions. This is to be accomplished by studying fundamentals of thermodynamics and kinetics chemistry of chemical reaction kinetic for homogeneous reactions, speed of reactions, single-stage reactors, continuous-stirred tank reactor, pipe reactor, time of its stay and measurements. Reactor performance in terms of input various such as temp and pressure is covered through the course. The selectivity and yield of multiple reactions is covered as well.

CHE 10626335 Thermodynamics (I)

This course covers the principles of thermal sciences and presents the calculations of work, heat for ideal gas and real gases at constant pressure or volume, the calculations of heat capacities, latent heats, and changes of enthalpy and entropy are covered as well. The first, second and third law of thermodynamics are investigated. The uses of tables and diagrams and the calculations of different types of heat reactions and residual properties are considered and covered in this course as well; the calculations of the efficiency of different cycles, turbines, expanders, and compressors are part of this course.

CHE 10626336 Thermodynamics (II)

The objective of this course is to cover the other side of thermodynamics; therefore, this course covers the partial properties, chemical potential, all types of fugacities, which form the criteria of equilibrium. The property changes of mixing (heat of solutions, change of volumes) are covered with details. The calculation models of activity coefficient, ϕ/γ formula, Gibbs/Duhem equation, flash point, azeotrope point calculation and VLE calculations are covered as well in this course. This course gives the theoretical basic to all thermal separation processes. Binary and multi component systems are investigated.

CHE 10626361 Mass Transfer

In this course, the student will learn the basic principles of mass transfer and its analogy to heat and momentum transfer. Key mass transfer concepts are covered, such as diffusion in liquids, gases, and porous material, mass transfer coefficient theory and calculations in both laminar and turbulent systems,

and the concept of equilibrium stage. The course also provides an overview for principles and design of two mass transfer operations, absorption and evaporation. The latter includes both single and multiple-effect evaporators.

CHE 10626362 Unit Operations

This course covers the equilibrium principles and design calculations of several mass transfer-based chemical operations, such as distillation, solvent extraction, adsorption, crystallization, and humidification and cooling towers. Both single- and multiple-stage operations of these systems are studied.

CHE 10626381 Safety Engineering

This course teaches students the basic principles of engineering safety including the proper ways of handling chemical, hazardous and poison materials in the lab or an industrial plant. Basics of inflammation, fires, and explosions, ways of protection from fires and explosions as well as relevant legislation concerning occupational safety will be covered in this course. At the end of the course, students will learn how to investigate accidents in an attempt to avoid such accidents in future.

CHE 10626452 Process Modeling in Chemical Engineering

This course is a review of physical laws considered the foundation of mathematical modeling used in physical systems. The course also looks at mathematised modeling of important chemical engineering systems, solving differential equations characterizing chemical processes through analysis by using numerical and analytical methods and computer software.

CHE 10626453 Process Control

This course helps students to acquire the necessary knowledge in chemical process control. Topics covered include: review of process modeling, Laplace transformations and transfer functions, dynamic response of first and second order process, dynamic response of closed loop feedback loops, open-loop and closed-loop stability analysis using different techniques.

CHE 10626465 Membrane Separations

In this course, the student will be exposed to separation processes that are not usually covered in the mass transfer and unit operation courses. The primary focus will be on separation using membranes from a theory and application standpoints, mainly in water desalination. The students will also be introduced to membrane types, synthesis, transfer theories, applications, as well as the various desalination technologies.

CHE 10626473 Fine Chemical Industries

The main objective of this course is to teach students the definition of fine chemicals products and to how distinguish between it and the commercial chemical industry. Course covers all reactors used in fine chemical industry

concentrates mainly on batch reactors. Waste minimization and the environmental impact of a fine chemical product will be covered. Student will learn how to write a recipe for producing a fine chemical and scale it up to a production scale.

CHE 10626475 Soap and Detergent Manufacturing

This is an industrial related course where students can learn more on how to manufacture soap and detergents. The course will also equip students with the chemistry behind soap, detergent and cosmetic emulsion manufacturing. Students will learn more about surfactants used in manufacturing soap and detergents. Household cleaning and disinfection products will be discussed in this course. The last topic to be discussed in this course is the mixing roles in soap and detergent manufacturing. All safety issues related to soap and detergent manufacturing steps will be covered. During the course, students will be asked to make visits to local chemical industry. Several assignments will be based on such visits

CHE 10626483 Environmental Engineering

The objective of this course is to deal with different types of pollutants, control and reduce them at least. Different topics are covered in this course, In the first one introduction to environmental chemistry (hardness, alkalinity, COD, BOD...) and basis of microbiology are covered. The purifications and clarifications of drinking water from groundwater and surface water, all treatment processes are investigated (pretreatment, primary treatment and secondary treatment) in this topic. Waste water treatment processes are also considered at the third topic. Air Pollutions problems, dust removal, green house effect, introduction to solid wastes and hazardous wastes are covered as well.

CHE 10626577 Biochemical Technology

The objective of the course is to introduce fundamental biochemical engineering concepts primarily to chemical engineers. The course does not assume any biological background or any prior course in biology or microbiology, although it certainly does not hurt to have some. To accommodate those who do not have the biological background, the course will first survey the basics ideas from microbiology, biochemistry, and the central dogma of biology. Subsequently, the emphasis will be application of the following core chemical engineering concepts to biological problems.

10626554 Design and Analysis of Experiments

In this course the student learn the most effective approach to design, conduct, and analyze experiments that optimize performance in products and processes. They learn also how to use statistically designed experiments to obtain information for characterization and optimization of systems,

improve manufacturing processes, and design and develop new processes and products. Evaluate material alternatives in product design, improve the field performance, reliability, and manufacturing aspects of products, and conduct experiments effectively and efficiently.

CHE 10626555 Computer Application in Chemical Engineering

This course is designed to increase the student knowledge and practice of important computer software such as Chem. Cad, Hysys, ComSol, EES and MatLab. These software can be used in chemical processes design and simulations.

CHE 10626566 Separation Processes

In this course, the student will be exposed to a number of separation processes that are not usually covered in the mass transfer and unit operation courses. These include humidification, de-humidification, drying, and leaching. The course will cover separation processes for solid materials, such as filtration, sieving, flotation, sedimentation, etc. It will also discuss the use of separation techniques in instrumentation for chemical analysis.

CHE 10626571 Food Treatment Technology

This course aims to define to the students the different food groups and their nutrition, and including the different methods used in food processing and preservation such as: pasteurization, drying, blanching, commercial sterilizations, cooling and freezing and the different techniques used in food packaging.

CHE 10626572 Polymer Technology

In this course students will be introduced to the processes used in polymer industry such as: extrusion, injection molding, blow molding, etc., in addition to the technology of polymer blending and plastic recycling.

CHE 10626574 Mining

This course aims to introduce students into metals and their ores, application of thermodynamics and chemical kinetics on mining, heat methods used in producing metals from their ores, industrial applications for producing ferrous and non-ferrous metals including the theories and application of blast furnace used in producing pig iron and the modern methods used in reducing iron from its familiar ores, and also to introduce students into the industrial methods used in producing copper, aluminum, manganese, magnesium, ..., etc. and in addition to ferrous and non-ferrous alloys designation codes.

CHE 10626575 Petrochemical Technology

In this course students will be introduced into the preliminary raw materials used in producing petrochemicals such as natural gas and crude oil in addition to the physical properties of these materials and also to the principal derivatives as methane, ethane, propane, ... etc. and their uses in petrochemical industry

CHE 10626584 Water and Wastewater Treatment

In this course we will cover the following topics: Introduction to water types and sources, physical and chemical treatment processes, which include pre-treatment processes, basic treatment steps, coagulation, flocculation, and sedimentation processes, filtration, disinfection, adsorption systems (carbon and ion exchange), membrane desalination, and softening

CHE 10626585 Solid Waste

This course will provide the student with an overview of the basic principles of solid waste management issues, such as sources of solid waste, types and contents of solid waste, chemical, physical, and biological properties of solid waste. The course also discusses the stages of solid waste handling, such as storage, collection, transportation, and containment. The course will also discuss the reuse, recycle, and disposal-related aspects of solid waste, such as incineration, which also include waste burning for energy generation, and landfills.

CHE 10626587 Environmental Impact Assessment

This course will introduce students to the theory and practice of environmental impact assessment (EIA), the systematic identification and evaluation of the potential effects on the physical, biological, cultural, and socioeconomic components of the environment of proposed actions—projects, plans, programs, legislation. The objective of EIA is to encourage consideration of the environment in the planning and decision-making process to arrive at actions that avoid or minimize adverse impacts on the environment. Students will be divided into several groups to handle a new engineering project of which EIA is needed

CHE 10626591 Graduation Project I

In this course, a student undertakes an independent project for the design and development of an industrial process, either experimental, theoretical or both, in any area of chemical engineering under the supervision of a faculty advisor. The objective of the project is to show the student how to apply his/her knowledge of chemical engineering principles to a problem and in doing so to demonstrate his/her skills and creativity. The problem may be tackled by a group of students but contributions should be individually assessed. At the end of the term, the student must give an oral presentation of his/her project and submit a hard copy report.

CHE 10626594 Graduation Project II

In this project, the student applies what he/she has found in the Graduation Project I. He/she will make visits to Palestinian plants and design a piece of equipment in the college labs. At the end of the term, the student must give an oral presentation of his/her project and submit a hard copy report

CHE 10626301 Introduction to Professional Engineering Concepts

This course lays the foundations for the professional development components of the engineering degree. It provides students with the awareness and understandings of the roles and responsibilities of Professional Engineers in society with respect to the environment, ethics, law, equity, culture, public, economic context, and worker safety and health considerations. It also introduces the technical and other forms of work terms and/or work experience report preparation, understanding national and international placement standards, and engineering logbooks. Finally the course shall provide the students with effective technical writing, communications skills, interview techniques, skill assessment and analysis, career prospective.

10626474 Chemical Technology I:

The course covers the definition of polymers and copolymers, their classifications and properties, polymerization reactions, molecular weight calculations and processing methods of polymers. In addition, the course will introduce the students to petroleum and its fractional components and their different uses as well as refining processes including distillation, catalytic cracking, catalytic hydro cracking and catalytic reforming of gasoline.

10626476 Chemical Technology II:

This course aims to provide an introductory knowledge and understanding in the formulation, manufacturing of solid, semi-solid and liquid dosage forms. Methods of producing pharmaceutical granulation, pharmaceutical coatings, clean area, methods of sterilization. The course covers the application of these principles to the industrial practice of producing finished drug products, such as tablets, capsules, syrups, suspensions, creams, ointments and injections.

The course will cover food processing and preservation techniques, food additive and flavors.

10626478 Chemical Technology Lab I:

This course aims to introduce the students into the practical aspects they studied in the courses of chemical reaction engineering and material properties and corrosion. This includes the characteristics of the most common chemical reactors such as CSTR, plug flow and batch reactors and the experimental measurements of the conversion in these different reactors. The students will also experimentally study the effect of impeller type, position and speed on mixing process of viscous and non-viscous fluids. In addition, the students will study materials and failure identifications, mechanical properties, micro-structure and the preparation of metallic and polymeric samples, different methods of heat treatment, surface hardening for ferrous and non-ferrous alloys and how to determine the corrosion rate of some metals.

10626479 Chemical Technology Lab II:

This lab aims of showing students the practical processes and safety regulations related to the manufacturing Soap, light duty and heavy duty liquid detergent and emulsions preparation. Emulsification in food and medicine, finish drug tests.

CHE 10626445 Plant Design

Students in this course acquire basic skills necessary for the design of chemical plants. Topics cover construction materials used in chemical plant building, erosion, mechanical properties, handling of materials and their selection, equipment symbols (codes) and drawings, ancillary services for unit operations, plant site and planning. Further, students learn about types of industrial waste and its control, industrial safety, maintenance, machine selections, precise machine plans, and piping. The course ends with an introduction to optimal selection for processes, compound and single variables, ways of exploration, linear and dynamic programming as well as different computer applications. Students are to submit a design report that includes capital and running cost of the plant as well as carrying out a sensitively analysis of the designed plant.

10626339 Unit Operations Lab I

Theoretical concepts learned in other courses are illustrated by experiments with pilot-plant and bench scale equipment. Skills for accurate data collection, analysis and communication are developed. Students learn to operate equipment and modern instrumentation with precision. They thoroughly analyze their data and present a formal written report on each experiment. This course is focused on experimental studies of heat, momentum and mass transfer in the context of unit operations. Practical Experiments on fluid properties, velocity measurements, friction losses in pipes and fittings in both laminar and turbulent flow regions, heat and mass transfer coefficient, bubble and dew point, heat exchangers, evaporation, boiling and condensation.

10626468 unit operations lab II

The Unit Operations Laboratory II course provides chemical engineering students with a unique opportunity to apply the principles learned in the unit operation and process control courses. Skills for accurate data collection, analysis and communication are developed. The students are introduced to the operation of a variety of pilot-plant scale chemical process equipment. They thoroughly analyze their data and present a formal written report on each. Team efforts should be performed in a spirit of teamwork and collaborative learning to develop leadership and professional communication skills. Experiments conducted in lab include control of distillation columns, pressure control, control of gas and liquid flow, temperature control, control of liquid level, control of pH degree. Stage wise and packed columns analyses of distillation, absorption, and extraction as well as drying

10626201 Computer Aided Chemical Engineering Drawing

This course aims at providing skills of engineering drawings related to chemical engineering applications using Computer Aided Design & Drafting (CADD). A student will practice on drawing sketches, general drawings, symbols, measurements, dimensions, directions, distances, and templates. A student will also draw various equipment, valves, devices and flow diagrams for chemical engineering applications in 2D and 3D.

10626444 Computer Aided Equipment Design

As the title indicates, the course provides the student with the basics principles of equipment design followed by application of well known chemical engineering computer design software such Chem. CAD, Aspen / HYSIS. Four design projects will be included starting with the design of a chemical storage tank which will focus on high pressure vessels, cylindrical vessels, spherical methods of fabrication, and materials of construction, and reasons for vessels' failure. A second design on Heat Exchanger (HE) will be followed. Students will learn how to determine the design parameter, how to calculate the heat exchanger area, optimum design of pipes in the heat exchanger with their layout, calculation the pressure drop of the HE. As reactor is considered as the heart of any chemical plant, more concern will be given to student about how to design a reactor to handle a multiple heterogeneous reactions. Finally the course will be ended with the design of a multi- component distillation column. Mass and Hydrodynamic.

10621522 Operation Management

This course addresses the management of operations in manufacturing and service firms. Diverse activities, such as determining the size and type of production processes, planning and scheduling the flow of materials, and the nature and content of inventories as well as other related topics.

10606102 Engineering Drawing

This course covers several topics including basic drawing techniques and materials used, orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

10621219 Engineering Mechanics

This course introduce the students to the fundamental concepts of vectors, equilibrium of force system , rigid bodies, stress and strain axial and transitional stress equation of motion, work and energy impulse and momentum, Eigen frequency and eigen mode of rotational system.

Staff Members:

Name	Degree	University of graduate
Hassan Sawalha	Assistant Professor	Wageningen University, the Netherlands,2009
Amer El-Hamouz	Full Professor	UMIST University, UK, 1992
Husni Odeh	Associate Professor	Budapest University for Technology,Budapest, Hungary, 1992.
Abdelrahim Abusafa	Assistant Professor	Middle East Technical University, Ankara, Turkey, 1999.
Nashat Nassar	Assistant Professor	University of Calgary
Majd Shehadeh	Lecturer	University of Putra, Malaysia, 2007
Shadi Sawalha	Lecturer	University of Lecce, Italy, 2001
Lubna Kino	Teaching Assistant	An-Najah National University, Palestine, 2008
Maha Fuqha	Teaching Assistant	An-najah National University, 2008
Yousef Ratrout	Teaching Assistant	An-Najah National Community College, An-Najah National University, Palestine, 2007

{ Computer Science Department }

Department Vision

Prepare students for lifelong learning that will enable them to move beyond today's technology to meet the challenges of the future.

Department Mission

The Department of Computer Science seeks to establish, maintain, and advance a broad understanding of computer science in order to fulfill its academic and professional goals. The department ensures that students have a solid foundation in the core concepts, are equipped with problem solving skills, and are prepared for life-long learning in the discipline.

Department Objectives

1. Provide the students with the fundamental skills and knowledge that all computing students must possess.
2. Guide students to integrate theory and practice, recognize the importance of abstraction, and appreciate the value of good design.
3. Teach relevant trends in the evolution of the discipline of computer science that have become apparent.
4. Prepare graduates to succeed in a rapidly changing field.
5. Provide students with the flexibility to work across many disciplines.

Program Outcomes

Because of the variety of courses, the department believes that the program will enable students to attain, by the time of graduation:

1. An ability to apply knowledge of computing and mathematics appropriate to the discipline.
2. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
3. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
4. An ability to function effectively in teams to accomplish a common goal.
5. An understanding of professional, ethical, legal, security and social issues and responsibilities.
6. An ability to communicate effectively with a range of audiences.
7. An ability to analyze the local and global impact of computing on individuals, organizations, and society.
8. Recognition of the need for and an ability to engage in continuing professional development.
9. An ability to use current techniques, skills, and tools necessary for the computing practice.

10. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
11. An ability to apply design and development principles in the construction of software systems of varying complexity.

Program Requirements

The student must complete 126 credit hours. Of these, 18 are university requirements, 57 are department requirements, 21 are electives and another 30 are basic science ABET requirements.

University requirements (18 credits)

University Compulsory Courses

Course code	Course title	Credit hours	Prerequisite
11000101	Islamic Culture	3	
11000102	Arabic Language 1	3	
11000103	English Language 1	3	
11000322	English Language 2	3	11000103
11000105	Palestinian Studies	3	
11000117	Leadership and Communication Skills	1	
11000108	Community Service	1	
11000127	Introduction to Computer	1	
Total Credits		18	

Department compulsory requirements (57 credits)

Course #	Course title	Credits	Prerequisite
10671101	Principles of Programming I	3	–
10671102	Principles of Programming II	3	10671101
10671204	Web Programming	3	10671102
10671210	Data Structures	3	10671102
10671212	Design and Analysis of Algorithms	3	10671210
10671241	Digital Logic Design	3	10671102
10671243	Computer Organization and Assembly Language	3	10671241
10671311	Programming Languages	3	10671210
10671314	Object Oriented Analysis and Design	3	10671210
10671321	Computer Architecture	3	10671243; 10671210
10671351	Software Engineering	3	10671210
10671353	Database Systems Design	3	10671210
10671362	Introduction to Compilers Design	3	10671210
10671421	Operating Systems I	3	10671243
10671473	Computer Networks	3	10671210 +10671241
10671477	Distributed Systems and Parallel Processing	3	10671421 + 10671473
10671497	Scientific Research	3	Department Approval
10671498	Graduation Project	3	Department Approval
10671499	Training	3	Department Approval

Department elective requirements (21 credits)

Course #	Course title	Credits	Prerequisite
10671230	Unix Environment and Tools	3	10671102
10671316	Advanced Programming	3	10671314
10671358	Multimedia Systems and Applications	3	10671210
10671371	Computer Graphics	3	10671210
10671372	Computer Simulation	3	10671210; 10671231
10671374	Digital Image Processing	3	10671210
10671375	Introduction to Geospatial Information Systems	3	10671353
10671383	Cryptography and Computer Security	3	10671210
10671422	Operating Systems II	3	10671421
10671453	Database Management Systems	3	10671353
10671474	Networks Programming	3	10671473
10671475	Wireless Computer Networks	3	10671473
10671483	Artificial Intelligence	3	10671210
10671491	Special Topics	3	Dept. approval

Science ABET requirements (30 credits)

Mathematical science(18 credits)			
Course #	Course title	Credits	Prerequisite
10211101	Calculus I	3	-
10211102	Calculus II	3	10211101
10211230	Methods of Statistics and Probability for Engineering	3	10211102
10671244	Linear Algebra for Computer Science	3	10211102
10671231	Discrete Mathematics	3	10671102 or 10681101
10671317	Numerical Analysis	3	10671244
Basic science courses(12 credits)			
10201101	General Biology I	3	
10201107	Lab For General Biology I	1	10201101 or concurrently
10201102	General Biology II	3	10201101
10201108	Lab For General Biology II	1	10201107 or 10201102 or concurrently
10231101	General Chemistry I	3	
10231107	Lab For General Chemistry I	3	10231101 or concurrently
10231102	General Chemistry II	1	10231101
10231108	Lab For General Chemistry II	1	10231102 or 10231107
10221101	General Physics I	3	
10221107	Lab For General Physics I	1	10221105 or 10221101 or concurrently
10221102	General Physics II	3	10221101
10221108	Lab For General Physics II	1	10221106 or 10221102

Course descriptions

10671101 Principles of Programming I

This course begins with an introduction to computers, hardware and software and problem solving. This course also includes an introduction to programming using C/C++, including input/output (I/O); expressions and arithmetic; if, while and for statements; one-dimensional arrays, string handling, functions, scope, recursion, and matrices.

10671102 Principles of Programming II

This course covers more advanced C/C++ programming features, including pointers, dynamic memory, structures, text files, binary files, classes and objects.

10671201 Technical Report Writing

This course focuses on report writing skills. It is designed to equip students with the principles of scientific and business writing. By the end of the course, students are expected to have mastered the process of professional report writing.

10671204 Web Programming

This course addresses the methods of starting dynamic sites, and covers the special programming techniques for the different websites. It also addresses storing language and retrieving data MySQL.

10671210: Data Structures

This course is an introduction to various data structures using an object-oriented language such as Java. The course covers lists, stacks, queues, heaps, trees, search trees, hash tables, analysis and implementation of data structures, recursion, sorting, and searching.

10671212: Design and Analysis of Algorithms I

Students are introduced to techniques used in analysis of algorithms and design methods such as the following: divide and conquer, dynamic programming, greedy searching and sorting algorithms, and complexity analysis.

10671230: UNIX Environment and Tools

This course is an introduction to the UNIX operating system, interface, environment, commands, tools, and applications. Also, students are introduced to programming under a UNIX environment.

10671231 Discrete Mathematics

Topics covered are set theory, statements, mathematical induction, propositional and predicate logic, Boolean algebra, relations, functions, counting methods, graph theory, recurrence relations and examples applicable to computer science.

10671241 Digital Logic Design

Students are introduced to Boolean algebra, minimization of Boolean functions using Karnaugh map and Quine-Mc-Cluskey methods, design of combinatorial circuits, design of complex digital circuits, sequential circuits, state assignment and minimization, design of simple computer incorporating general registers, common addressing modes and conditional instructions.

10671242 Digital Logic Design Lab

A continuation of Digital Logic Design (0671241), this course will be devoted to the implementation of lab experiments on some of the basic digital circuits studied in Digital Logic Design.

10671243 Computer Organization & Assembly Language

Topics covered are the organization and operation of a conventional computer, including principal instruction types, data representation, addressing modes, program control and I/O, assembly language programming, instruction mnemonics, symbolic address, assembly directives, system calls and macros, the usage of one and two pass assemblers, debuggers, linkers and loaders, and embedding assembly code in high level language.

10671244 Linear Algebra for Computer Science

Topics covered include matrices, vectors, operations on matrices determinants, systems of linear equations and methods of solutions, vector spaces, linear independence and basis, linear transformations, kernel and range, and Eigen values and eigenvectors. There is an emphasis on the application of these topics in computer science.

10671311 Programming Languages

This course dwells on syntax and semantics specification, discussion and comparison of basic programming styles and their underlying paradigms, such as imperative, functional, logic, and object-oriented programming, data types, subprograms, runtime stack, parameter passing methods, and exception handling.

10671314 Object-Oriented Analysis and Design

This course introduces object-oriented programming concepts. The course covers class derivation, inheritance, and dynamic polymorphism, object-oriented analysis and design using UML language.

10671316 Advanced Programming

Students in this course learn about the construction of large multi-module software systems using object-oriented programming. Also, students learn about Integrated Development Environments (IDEs) that support graphical user interface and produce different kinds of applications using different even driven techniques.

10671317 Numerical Analysis

This course is a study of numerical computations on modern computer architectures, floating-point arithmetic, error analysis and asymptotic notations. It focuses on programming with special software related to numerical computations, as well as algorithms and computer techniques for the solution of problems, such as finding roots function. These techniques include bracketing and iterative methods; roots; direct and indirect solution of systems of linear equations; solution of nonlinear systems, approximation and interpolation; numerical integration and differentiation.

10671321 Computer Architecture

This course is an introduction to computer system organization and architectures, description of computer systems, memory hierarchy, central processing unit (CPU), instruction sets and instructions cycles, pipelining and super-pipelining, control unit, microprogramming, and parallel computers.

10671351 Software Engineering

This course examines the software development process, analysis, specification, design, implementation, integration, testing, and maintenance. It covers software processes, project management, people management, software requirements, system models, architectural and detailed design, user interface design, programming practices, verification and validation, and software evolution. Structured software engineering techniques will also be examined.

10671353 Data Base Systems Design

Students are introduced to database system concepts and architecture, data modeling using the E-R Model, the relational model, normalization, operations on relational model, relational constraints and relational algebra, SQL, the relational database standard, security in SQL and a PL/SQL overview. Furthermore, an overview of the oracle system, distributed databases and client-server architecture will be provided.

10671358 Multimedia Systems and Applications

This course gives an introduction to multimedia (MM) contents and the tools that produce MM contents. It also covers the design of a MM system considering the necessary resources in the form of CPU power, memory, bandwidth and storage system. The students will be able to produce MM applications that can run locally and over a network.

10671362 Introduction to Compilers Design

In this course, students learn about formal language and automata, an overview of compiler phases, context-free grammar, syntax, directed translations, techniques used in lexical scanning, parsing and symbol table implementation, error diagnosis and recovery.

10671371 Computer Graphics

This course covers basic graphics operations and their implementations in 2-dimensions, an introduction to OpenGL, devices for construction and display of computer-generated images, windowing and clipping, 2D geometry, transformation and viewing, 3D object representation, transformation and viewing.

10671372 Computer Simulation

This course examines simulation and queuing models, random numbers generation, statistical sampling and analysis of data, simulation languages and selected applications.

10671374 Digital Image Processing

Topics covered in this course include image formats, image recognition, image extraction, image processing primitives, and image indexing; clustering: hierarchical and non-hierarchical methods, clustering using neural networks and genetic algorithms; classifications: nearest neighbors, neural nets, and genetic methods; image enhancement, segmentation, measurement, Fourier analysis, image storage and retrieval.

10671375 Introduction to Geographical Information System

This course includes an introduction to geographical information system (GIS), GIS applications and geospatial data, digital representation of geospatial data, VECTOR-based GIS and RASTER-based GIS.

10671383 Cryptography and Computer Security

This course covers the concepts of information assurance of basic computer security mechanisms. It introduces malicious code and how to fight it; classical cryptography, conventional (symmetric) encryption and public key or asymmetric encryption, key management and exchange, digital signatures, certificates and authentication protocols; electronic mail security, web security and protocols for secure electronic commerce.

10671421 Operating Systems I

This course covers operating systems history, basic issues in concurrency, deadlock control, synchronization, scheduling, memory management, process management, resource management, protection, access control, and the implementation of parts of a small operating system.

10671422 Operating Systems II

This course covers advanced topics in operating systems, comparative studies of different types of operating systems and in-depth studies of a modern operating system.

10671453 Database Management Systems II

Students will study advanced concepts in creating and managing tables, storage access and index structure. In addition, they will learn distributed DB concepts, create and maintain constraints, and create views, PL/SQL block and its sections. They will also learn about triggers, functions, procedure and packages, along with database connectivity (ODBC, OLE, and ADO), managing users. Practical tools are used to implement the different concepts. Form builder, report builder and Oracle 10g are also used.

10671473 Computer Networks

This course begins with an introduction to basic notations of communications, protocols, network topologies and 802.xx IEEE standards. Detailed descriptions of network layer models (IOS and TCP/IP) include application, transport, network, data link and physical local area networks setting and configuration (case study) and introduction to NW security.

10671474 Network Programming

Students in this course learn how to use network protocols in transferring data between different applications, TCP and UDP protocols, unicasting, multicasting and broadcasting. The course also provides an introduction to socket API, construction of distributed applications, error detection and design of Internet applications.

10671475 Wireless Computer Networks

This course is a continuation of Computer Networks and introduces wireless networks such as of Wireless Personal Area Networks (WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN). The course content includes physical layer standards, medium access control, building and securing WLAN, Wide Area Networks including cellular networks and cellular data networks.

10671477 Distributed Systems and Parallel Processing

This course presents an introduction to distributed systems, with the Internet as a case study; as well as an introduction to parallel processing, multithreading, parallel processing interfaces and applications.

10671473 Artificial Intelligence

Students receive instruction on basic concepts and techniques of artificial intelligence. Emphasis is placed on problem-solving methods: blind and informed search, game playing: minimax and alpha beta pruning algorithms,

representation of knowledge using predicate logic, resolution, backward-chaining and Prolog, forward-chaining systems, inductive learning, decision trees, neural networks, planning and reasoning under uncertainty.

10671491: Special Topics

Students are introduced to advanced selected topics in different areas of computing.

10671497: Scientific Research

10671498: Graduation Project

In the fourth year, students are required to undertake a complete investigation, analysis, programming and implementation of a selected system. The students are required to deliver a presentation and demonstrate their work in front of a 3-member committee from the department.

10671499: Training

Students are expected to complete 180 hours of practical training.

References

- Computer Science Curricula (2013). The Joint Task Force on Computing Curricula Association for Computing Machinery, IEEE-Computer Society.
- CRITERIA FOR ACCREDITING COMPUTING PROGRAMS, ABET Computing Accreditation Commission

Staff Members:

Name	University of graduation
Dr. Adnan Salman	University of Oregon /USA
Dr .Wael Moustafa	University of Houston /USA
Dr. Nizar Awartani	Lehigh University/USA
Dr. Bahjat Qazaz	UAB/Spain
Mr. Motasem Abuzant	University of Kentucky/USA
Mr. Hossam Abdelhaleem	Kaed A'azam/Pakistan
Mr. Mohammad Sharaf	University of Jordan
Ms. Manar Arafat	University Of Science and Technology /Jordan
Ms. Mai Kan'an	George Washington/USA
Ms. Suhad Daraghmeh	University of Jordan
Ms. Mai AbuSair	Yarmouk University/Jordan

{ Electrical Engineering Department }

Vision

Gain national and regional recognition for providing high-quality and diversified education to produce world class engineers who will be successful in their professional careers and/or graduate studies.

Mission

Provide students with a supportive environment that facilitates learning to solve problems in electrical engineering.

The Electrical Engineering Department is committed to excellence in student learning. Graduates of this program will be problem solvers, able to apply engineering principles to electrical systems. The faculty and staff of the program use their long experience in teaching, research, and industry to prepare students to be successful as they move into the workforce or to graduate schools.

Program objectives:

Electrical engineering graduates are expected to:

- Prove competent in designing, analyzing, enhancing, and executing modern electrical systems.
- Effectively compete in a fast changing technological world and become successful leaders, business men and women, directors, innovators, and teachers in their field.
- Adapt to the responsibilities assigned to them in a multicultural work environment through professionalism and respect for diversity in the workplace and the community.
- Successfully continue with their graduate studies and become experts in their field of study.

Program Outcomes:

- An ability to apply knowledge of advanced mathematics, science and engineering to electrical engineering problems.
- An ability to design and conduct electrical engineering-based experiments, as well as to analyze and interpret data.
- Ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Ability to function on multi-disciplinary teams.
- Ability to identify, formulate, and solve electrical engineering problems.
- Understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- Understanding the impact of engineering solutions in a global, economic, envi-

ronmental, and societal context.

- Recognition of the need for, and an ability to engage in, life-long learning.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.

Curriculum Plan

The Department of Electrical Engineering offers a single specialization in electrical engineering. Students wishing to get a B.Sc. degree in this field must successfully complete **161** credit hours: 18 are university requirements, 143 are department requirements, (of which 93 are compulsory courses, 15 are elective, and 32 are from the Faculty of Science).

Admission requirements

Fulfillment of the specialization conditions in the Faculty of Engineering, taking into account the capacity of the program.

I. Program requirements

A. University requirements (18 credits)

Course #	Course title	Credits
11000101	Islamic Culture	3
11000105	Palestinians Studies	3
11000102	Arabic Language I	3
11000103	English I	3
11000322	English II	3
11000117	Leadership and Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1
10012100	Remedial English	0

B. Department requirements (143 credits)

Compulsory courses (126 credits)

Math and science courses (32 credits)

Course #	Course title	Credits	Prerequisite
10211101	Calculus 1	3	
10211102	Calculus 2	3	10221101
10211201	Calculus 3	3	10221102
10211202	Engineering Mathematics	3	10211201
10216230	Statistics and Probabilities for Engineers	3	10211102
10211302	Partial Differential Equations 1	3	10211202 or 10211203
10231101	General Chemistry 1	3	-
10231107	General Chemistry 1 Lab	1	10223101 or concurrently
10626251	Engineering Numerical Analysis	3	10211202+10636111
10221101	General Physics I	3	
10222115	General Eng. Physics lab	1	10221102 or concurrently
10222102	General Physics II	3	10222101

Electrical engineering core courses (94 CR)

Course #	Course title	Credits	Prerequisite
10636111	Computer Programming	3	
10621219	Engineering Mechanics	3	10211102+ 10211102
10606102	Engineering Drawing	2	
10621100	Engineering Workshop 1 Theory	1	
10621101	Engineering Workshop 1 Practical	0	
11032101	English for Workplace	3	11000322 or 11000325
10641211	Electrical Circuits 1	3	10221102
10641212	Electrical Circuits 2	3	10641211
10641214	Electronic Circuits 1	3	10641211
10641215	Electrical Circuit Lab	1	10641211
10641270	Electromagnetics 1	3	10641211
10641313	Electronic Circuits 2	3	10641214
10641314	Electronic Circuits Lab	1	10641214
10641315	Electrical Measurements and Sensors	3	10641212 or concurrently
10641323	Electrical Machines I	3	10641212
10641324	Electrical Machines II	3	10641323
10641325	Electrical Machines Lab	1	10641323
10641343	Control Systems	3	10641373
10641373	Systems and Signal Analysis	3	10641211
10641374	Electromagnetic II	3	10641270
10646322	Communication Principles	3	10641373+ 10216230 or 10646233
10631301	Engineering Economic and Feasibility Studies	3	10221102
10631207	Introduction to Engineering Management	3	
10641411	Power Electronics	3	10641313 or 10641293
10641412	Electronic Circuits III	3	10641313
10641422	Electric Power Systems I	3	10641324
10641423	Electric Power Systems 2	3	10641422
10641527	Electric Power Systems Lab	1	10641422

Course #	Course title	Credits	Prerequisite
10641426	Electrical Installation and Safety Systems	3	10641324
10641441	Control Systems Lab	1	Co-10641343
10641460	Internship 1	3	Department approval
10646342	Digital Communications	3	10646322
10646328	Communication Lab	1	10646322
10641568	Graduation Project I	2	Department approval
10641569	Graduation Project II	3	10641568
10636221	Digital Circuit Design I	3	
10636291	Digital Circuit Design 1 Lab.	1	10636221
10636428	Microprocessor and Microcontroller	3	10636221
10636498	Microprocessor and Microcontroller Lab	1	10636428

B. Two free courses (2 credits each) Department approval is necessary.

Department elective courses (15 credits)

Students may choose five of the following courses:

Telecommunication Courses

Course #	Course title	Credits	Prerequisite
10641413	Electronics for Communications	3	10641313
10646461	Information and Coding Theory	3	10646342
10641572	Communication Systems	3	10646342
10646561	Microwave	3	10641374
10646441	Digital Signal Processing	3	10646342
10646538	Mobile Communication Systems	3	10646342
10646552	Introduction to Image Processing	3	10646441
10641578	Special Topics in Communications III	3	Department approval
10646444	Telecommunication Networks	3	10646342
10641364	Modeling of Electrical Engineering Systems	3	10641373
* 10641555	Internship II	3	

Power Courses

Course #	Course title	Credits	Prerequisite
10641420	Stability and Protection of Power Systems	3	10641423
10641424	Control of Electric Machines	3	10641343
10641425	Renewable Energy Systems	3	10641422
10641427	Power Generating Stations and Substations	3	10641422
10641428	Programmable Logic Controllers (PLC)	3	
10641429	High Voltage Technology	3	10641423
10641521	Power Transmission and Distribution Networks	3	10641423
10641522	Operation and Control of Electric Power System	3	10641423
10641529	Special Topics in Power	3	Department approval
10641364	Modeling of Electrical Engineering Systems	3	10641373
10641554	Design and Analysis of Electrical Networks	3	10641423
* 110641555	Internship II	3	

Control Courses

Course #	Course title	Credits	Prerequisite
10641428	Programmable Logic Controllers PLC	3	
10641443	Digital Control systems	3	10641343
10641444	Artificial Intelligence and Expert Systems	3	10641343
10641449	Advanced Control Systems	3	10641343
10641543	Process and Automated Systems Design	3	10641343
10641544	Special Topics in Control Systems	3	Department approval
10641545	Introduction to Robotics	3	10641343
10641546	Computerized Control Systems design	3	10641343
10636527	Embedded Systems	3	10636428
10641364	Modeling of Electrical Engineering Systems	3	10641373
* 10641555	Internship II	3	

* This course gives some students an opportunity to sign up for Internship I + Internship II (six credits) during a fall or spring semester before the semester of graduation.

Students are selected according to their achievements, the number of credit hours they have completed and the presence of a training opportunity for a full semester.

Courses offered to non-electrical engineering students

Course #	Course title	Credits	Prerequisite
10641291	Electrical and Electronic Circuits	3	
10641292	Electrical Circuits	3	
10641293	Electronics	3	
10641294	Electrical and Electronic Circuits Lab	1	
10641391	Electrical Machines	3	
10641392	Electrical Machines Lab	1	

Course Descriptions

10641211 Electrical Circuits I

This course covers several topics: circuit variables elements; simple resistive circuits; techniques of circuit analysis; inductance & capacitance; natural and step response of RL and RC; RLC circuits; and sinusoidal steady state analysis

10641212 Electrical Circuits II

Students are introduced to power calculations; three phase circuits, series and parallel resonance; Laplace transform in circuit analysis; two port networks; and Laplace transformation

10641214 Electronic Circuits I

This course deals with electronic materials, device and principles, P-N junction diode & applications; Zener diodes & other 2 terminal devices, bipolar (NPN and PNP) and FET (junction, enhancement and depletion MOSFETs) transistors constructions and theory of operations; transistor biasing circuits and graphical (load line) analysis. It ends with an introduction to Op-amp circuits and applications, and small signal models for diodes & transistors

10641215 Electrical Circuits Lab

This course is an introduction to lab instruments, Ohm's law, network theorem, voltage source, characteristics of AC circuit, capacitors and inductors, RLC series and parallel, resonance, and three phase circuits.

10641270 Electromagnetics I

In this course, students are introduced to vector algebra; orthogonal coordinate systems; static electric fields produced by discrete and continuous charge distributions; Gauss's law; divergence and divergence theorem; electrostatic potential and potential difference; gradient and conservative fields; energy stored in electrostatic fields; current and current density; continuity of current; conductors and their properties; conductor-free space interface; method of images; dielectrics; dielectric-dielectric interface, dielectric-conductor interface; resistance and capacitance; one-dimensional Laplace's and Poisson's equations; separation of variables; Biot-Suuart law; Amper's law; Curl and Stocke's theorem; magnetic flux and magnetic flux density; vector magnetic potential; magnetic materials; magnetostatic boundary conditions; inductance and mutual inductance; and Maxwell's equations for static and steady fields in differential and integral forms.

10641313 Electronic Circuits II

Topics covered in this course include large signal amplifier designs and analysis, small signal models for BJT, and amplifier analysis under various configuration : CE, CC and CB; small-signal analysis for FET amplifier analysis for CS, CD and CG configurations; multistage and composite amplifiers, current sources and current mirrors, differential amplifiers and their analysis, power amplifiers (classes A, B , AB and C) and power calculations; advanced op-amp circuits

10641314 Electronic Circuits Lab

This course covers types of diodes, rectifier diodes, half-wave rectifiers, bridge rectifiers; on-state and off-state characteristics of Zener diodes; testing the layering and rectifying of bipolar transistors; characteristics of the transistor, depletion layer FETs, characteristic of the FETs; multistage amplifiers, differential amplifiers, push pull output amplifiers, operational amplifiers, the static behavior of operational amplifiers, and dynamic behavior of the OP-AMP.

10641315 Electrical Measurements and Sensors III

This course acquaints students with measurement and error, electromechanical-indicating instruments, bridge measurements, analog electric instruments, digital instruments, oscilloscopes, sensors and transducers, and data acquisitions systems

10641323 Electrical Machines I

This course is an introduction to machinery principles and transformers: single-phase and three phase, DC machinery fundamentals, DC motors, and DC generators.

10641324 Electrical Machines II

This course familiarizes students with AC machine fundamentals, synchronous generators, synchronous motors, induction motors, single phase and special-purpose motors.

10641325 Electrical Machines Lab

This course begins with single-phase transformers: open and short circuit tests, parallel operation of transformers; three phase transformers: star and delta connections, balanced and unbalanced loads; DC generators: separately-excited, shunt, series and compound generators; and DC motors: shunt, series and compound motors. Then it moves to three-phase and single-phase synchronous generators; three-phase and single-phase induction motors; and three-phase and single-phase synchronous motors. It concludes with a look at single-phase generators synchronized with the main supply.

10641343 Control Systems

This course is an introduction to control: open-loop and closed-loop control; modeling: transfer function, block diagram, signal flow graph, state equations; feedback control system characteristics: sensitivity, disturbance rejection, steady-state error; performance specifications: second-order systems, dominant roots, steady-state error of feedback systems; stability: Routh-Hurwitz criterion, relative stability; the root locus method; frequency response methods: Bode diagrams, performance in the frequency domain; Nyquist stability criterion, gain margin and phase margin, and the Nichols chart.

10641364 Modeling of Electrical Engineering Systems

This course includes the basics of software applications in electrical engineering. Students are supposed to learn several software packages related to electrical engineering systems.

10641373 Systems and Signal Analysis

Topics covered in this course include continuous-time signals and systems, continuous-time linear time-invariant systems, impulse response, convolution, system properties, relation to differential equations, Fourier series, Fourier transform; applications involving the Fourier transform, sampling, discrete-time signals and systems, discrete-time linear time-invariant systems, Fourier analysis of discrete-time signals/systems, DTFT, Z-transforms, and state variables

10641374 Electromagnetics II

Students in this course are introduced to Faraday's law; displacement current; Maxwell's equations for time-varying fields; constitutive properties; boundary conditions for time-varying fields; TEM waves on lossless transmission lines (TL); per unit length parameters of TL; telegraphist and wave equations with their solutions on TL; characteristic impedance of TL; propagation, phase, and attenuation constants of TL; frequency-domain analysis of lossless transmission lines; input impedance of TL; reflections and matching of TLs; power flow on TLs; Smith chart; uniform plane waves in lossless media; Power flow and the Poynting vector; the wave equation; uniform plane waves in lossy media; conductors and dielectrics; polarization of uniform plane waves; normal and oblique incidence of uniform plane waves on plane boundaries; perpendicular and parallel polarization; total reflection and total transmission; group velocity and dispersion. The course ends with an introduction to metallic wave guides.

10646322 Communication Principles

This course starts with a general introduction to communication systems; representation of signals; bandwidth; amplitude modulation; ordinary AM, DSB-SC, SSB, VSB; frequency translation; phase modulation and frequency modulation; narrow-band FM, wide-band FM; transmission of information;

noise sources and their effects in communications systems; filters and demodulation devices; frequency division multiplexing; sampling theorem and noise models.

10641411 Power Electronics

This course covers thyristors, DIACs, TRIACS, and IGBT; triggering circuit; single- and three-phase rectifier circuits; harmonic analysis of voltage and currents of the difference circuits; voltage regulators; commutation techniques and DC/DC-choppers.

10641412 Electronic Circuits III

In this course, students learn about low- and high-frequency response of transistor (BJT and FET) amplifiers; bode plots, coupling and bypass capacitors and their contribution to the low frequency response; high frequency transistor model, transistor parasitic capacitances and their effect on the high frequency response, transistor forward current gain variation with frequency; frequency response of cascaded amplifiers, miller capacitance and miller free transistor circuits; feedback concept, negative and positive feedback; configurations of negative feedback; feedback amplifier circuit characteristics; frequency response of feedback amplifiers; stability of feedback amplifiers, and frequency compensation methods.

10641413 Electronics of Communication

This course is an overview of communication devices, impedance matching and transformations, oscillators; types analysis and circuits, loop gain analysis, VCO, PLL, mixers and applications, conversion losses, tuned power amplifiers, AGC circuit, low noise amplifiers, phase locked loops; circuits and applications

10641420 Stability and Protection of Power Systems

Students are taught about power system stability, power system protection; instrument transformers, relays, fuses and circuit breakers; transformer protection, motor and generator protection, bus-bar protection, and transmission lines protection.

10641422 Electric Power Systems I

This course deals with basic concepts, series impedance of transmission lines, capacitance of transmission lines, current and voltage relations on a transmission line, system modeling. network calculations, load-flow solutions and control.

10641423 Electric Power Systems II

This course allows students to learn about economic operation of power system, symmetrical three-phase faults, symmetrical components, unsymmetrical faults, voltage control, power factor improvement.

10641429 High Voltage Technology

Students learn about generation of high voltage (HVAC and HVDC), high transient voltage; high voltage measurement; electric strength of isolation materials; electric field in homogeneous and heterogeneous materials; graphical and experimental determination of electric fields; phenomena of electric discharge forms and the gas discharge; fluid isolation materials; solid isolation materials; extra high voltage long transmission lines, technical characteristics, equivalent circuit, voltage distribution along the line, real and reactive power flow along the line, methods of increasing the maximum power transferred along the line of EHV DC transmission lines, rectification, inversion, equivalent circuit, analysis of operating conditions.

10641424 Control of Electric Machines

Topics treated in this course include characteristics and sizing of power semiconductors used in controlled electric drives; DC motor drives: speed and torque control; induction motor drives: voltage control and variable frequency control; synchronous motor drives: open-loop, closed-loop variable frequency control; brushless DC drives; and drives application examples.

10641425 Renewable Energy Systems

This course is an introduction to solar energy, solar astronomy; analysis of flat plate collectors, solar electric energy systems, storage batteries; wind energy converters, biogas, and fundamentals of geothermal energy systems.

10641426 Electrical Installation and Safety Systems

This course focuses on electrical illumination; single-phase wiring, three-phase wiring; alarm, safety and control systems; electrical plants, safety systems, wiring diagrams and supply systems for electrical motors.

10641427 Power Generating Stations and Substations

This course introduces students to types of generating stations: thermal generating stations, hydropower stations, nuclear and diesel-generating stations; the electrical parts of power stations, switch gears transformers, synchronous condensers and generators, auxiliary power requirements of stations; and protection in power stations and substations. It ends with a look at the economic factors of power stations and substations.

10641428 Programmable Logic Controllers (PLC)

This course is an introduction to PLC architecture, PLC programming procedures; selecting suitable PLC; basic PLC programming; ladder diagrams; basic PLC functions (Register, Timers, Counter); PLC arithmetic functions; data handling functions; engineering applications; PLC installation and troubleshooting and maintenance.

10641441 Control Systems Lab

Topics treated in this course include the fundamentals of controlling; characteristics and response of first and second order systems; open- and closed-loop systems; different types of controllers and the effects of controllers on different systems; basic principles of PLC; basic principles of pneumatic systems, and machine drive controlling using contractors and timers

10641443 Digital Control Systems

This course provides an introduction to digital control, discrete time systems and the z-transform; sampling and reconstruction; open-loop discrete-time systems; closed-loop discrete-time systems; time response characteristics; stability analysis of discrete-time linear systems; digital controller design. The course ends with a look at state-space methods.

10641444 Artificial Intelligence and Expert Systems

This course is an introduction to artificial intelligence, knowledge representation and reasoning, problem solving and search; natural language and visual image understanding; and neural networks. The course also introduces expert systems, knowledge acquisition, inference strategies and explanations, uncertainty and fuzzy logic, verification and validation, managerial and organizational considerations.

10641449 Advanced Control Systems

This course begins by giving students a background and preview about state-space representation; a review of matrix algebra and vector spaces; an analysis of linear time-invariant systems, modal decomposition; controllability and observability; the relationship between transfer function and state equations; realizations; pole assignment: state feedback and output feedback; and observer design.

10641460 Internship I

Each student is expected to spend eight weeks of training in a recognized engineering company in order to gain practical experience. He/she is required to prepare a detailed report summarizing the practical work experience he/she undertook.

10646342 Digital Communications

This course introduces several topics: digital pulse modulation; principles of PCM, DM, SDM, ADM; linear & non-linear quantization; quantization noise; different kinds of signaling; time-division multiplexing (TDM); matched filter; equalization; bit error rate; error probability analysis for coherent and non-coherent detection; different kinds of digital modulation techniques (PSK, FSK, ASK); linear prediction; power spectra of digital signals and intersymbol interference (ISI).

10646328 Communication Lab

Students are introduced to signal source, resonance circuits, AM, DSB-SC, SSB-SC, FM, and different kinds of demodulation for AM and FM; sampling; kinds of framing, DM, sigma delta modulation, PCM and noise in digital systems, and digital modulation techniques

10641521 Power Transmission and Distribution Networks

This course is a study of the design of transmission and distribution networks; the choice of nominal voltages; the selection of conductors, poles, transformers and switch gears; radial and ring type transmission networks; the reliability of transmission networks; power loss reduction and economical aspects of the different networks.

10641522 Operation and Control of Electric Power System

Students study the control of real and reactive power; optimum reactive power compensation; optimum distribution of load between different power plants; voltage-reactive power control and load-frequency control.

10641529 Special Topics in Power

Course topics and content will be always fixed at the beginning of the semester according to the interest of the students and in coordination with the teaching staff of the Electrical Engineering Department.

10641543 Process and Automated Systems Design

Topics taught in this course include building blocks of industrial control and automation systems: sensors, actuators, signal conditioners, computing units and networks; control systems configurations: feed-forward and cascade; characteristics of physical variables: temperature, flow, pressure, level, and motion; industrial controllers: PID controllers and on-line tuning, PLC, and networked control.

10641544 Special Topics in Control Systems

Course subjects and content will be always fixed at the beginning of semester according to the interest of the students and in coordination with the teaching staff of the Electrical Engineering Department.

10641545 Introduction to Robotics

This course is a study of the components of robot systems, coordinate frames, homogeneous transformations, kinematics for manipulators, inverse kinematics, manipulator dynamics, Jacobean velocities and static forces, the control of manipulators and robotic programming.

10641546 Computerized Control Systems Design

This course deals with digital control theory, data acquisition details, design and implementation of digital control systems, real-time operating systems,

specification and design of real-time systems, concurrent systems, the task model, scheduling of tasks, fault tolerant and fail-safe design, performance evaluation of real-time systems. It also provides an introduction to state-space methods.

10641568 Graduation Project I

A small part of a major project, under the supervision of a staff member, is conducted by the student that enables him/her to apply theoretical knowledge gained to an actual problem. It's the first phase of the graduation project. In this phase, the student is expected to finish the survey on the intended topic, finish all financial and management requirements, purchase all needed components, finish most of the software (if any); and partially start building the hardware (if any).

10641569 Graduation Project II

This is a major project conducted under the supervision of a staff member to enable the student to apply theoretical and practical knowledge gained to a large-scale engineering problem. It is the second phase of the graduation project, in which the student is expected to bring all parts of the project together; all software (if any) and hardware (if any) should be completed. Any recommendations for further developments should be given.

10646461 Information and Coding Theory

Topics studied in this course include entropy and information theory, types of data, source coding; LZ, Huffman and Shannon-Fano coding; channel coding; secrecy coding; channel capacity; error control coding; detection and correction methods.

10641572 Communication Systems

This course provides a basic television overview from studio to viewer; frequency range and band names, transmitted signals, black and white receivers, color receivers; satellite communication principles, kinds of orbits, transmission path, noise consideration and link budget.

10646561 Microwaves

Several topics are covered in this course: electromagnetic wave and transmission line theory, Smith chart, impedance matching, TM and TE modes, wave guides and wave guide devices, S-parameters, magic T, attenuators, microwave components, microwave measurements; microwave links and propagation models.

10646441 Digital Signal Processing

Students learn how to undertake a sampling review, aliasing, and up and down sampling. They also learn about the effects of quantization and finite-word-length arithmetic. The course also provides a review of the Z-transform;

structures for discrete time systems; discrete Fourier transform (DFT); the fast Fourier transform (FFT); the design of digital filters: FIR and IIR (recursive and non-recursive); and the design of analog filters. It concludes with an introduction to image processing.

10646538 Mobile Communication Systems

The module will be based around the following areas: mobility, services, applications and drivers for mobile communications; qualitative appreciation of radio communications concepts: modulation, transmission and demodulation, antennas and propagation loss, interference, multi-path-fading; effects on system performance; cellular radio principles and cell structure and frequency re-use; architecture of the support infrastructure; localization and handover; radio access: FDMA, TDMA, CDMA, OFDMA; system aspects of current mobile systems: 2G (GSM), 2.5G (GPRS , EDGE) and 3G (UMTS, HSDPA), GERAN and UTRAN. The course provides an introduction to Long Term Evolution (LTE).

10646552 Introduction to Image Processing

This course begins with an overview of computer imaging systems, human visual systems, image models, image enhancement, gray scale modes, histogram mod; discrete transforms, Fourier discrete cosine; Walsh-Hadamard, Haar, PCT, filtering, and wavelet transforms; and the pseudocolor. It then moves to the study of image enhancement, sharpening and smoothing image restoration; overview, system model, noise,; noise removal, degradation model, inverse filter, and frequency. The course ends with filters, geometric transforms, image compression: system model, lossless methods, and lossy methods.

10641578 Special Topics in Communications

This course raises and discusses new topics and current trends in telecommunication engineering.

10646444 Telecommunication Networks

This course provides an introduction to telecommunication networks (both LAN and WLAN), with particular attention to the OSI network layer. The emphasis will be on the basic performance and engineering tradeoffs in the design and implementation of OSI networks. Students will learn not only how they work today, but also why they are designed the way they are and how they are likely to evolve in the future. We will draw examples primarily from the Internet. Topics to be covered include LAN, data link control protocol networks, routing, addressing, naming, switching, internetworking, and multiplexing. The course also provides also an introduction to the WLAN physical layer.

10641527 Electric Power-Systems Lab

This lab includes experiments related to synchronous generators, the parallel operation of two generators, the parallel operation of a S.G. with the public mains, transmission line at no load and under different load conditions, series and parallel operation of transmission lines, power factor correction by using a synchronous condenser, power factor correction by using a capacitor bank, the operation of different types of protection relays, and operation of an overall power system.

10641554 Design and Analysis of Electrical Networks

This course introduces different sources of energy:

units of energy and relationship between them; methods of power factor improvement; different DC and AC distribution systems and methods of their calculations; methods of voltage control and power loss reduction; different supply systems; and the economical choice of different network elements. The course ends with an introduction to switchgear.

10641555 Internship II

This course is an extra training course, together with Internship II (0641460). This course allows some students to spend a full semester (either fall or spring) of training before the graduation semester. Students are selected according to their achievements, the number of credit hours they have completed, and the existence of the training opportunity.

10636221 Digital Circuit Design I

This course is a study of Boolean algebra, number systems, logic gates, simplification, combinational logic circuit design; combinational circuits, sequential circuits, flip-flops, counters, registers (serial, parallel, and shift), state machines design; synchronous and asynchronous systems.

10636291 Digital Circuit Design I Lab

This lab introduces students to TTL and CMOS circuits; IC characteristics; Boolean Function design and implementation; seven segment display; decoders; shift registers, ROM, RAM; monostable and astable multi-vibrators and 555 timing timer; and sequential circuits design.

10636428 Microprocessor and Microcontroller

This course is a study of microcontroller architecture; address modes and instruction sets; subroutines and interrupts; handling software tools including IDE, editor, assembler, simulator and C compiler; interface techniques including parallel, serial, timer, and analogue peripheral interface.

10636498 Microprocessor and Microcontroller Lab

This lab is designed to enhance students' capability in terms of interfacing with microcontrollers. Since how to interface with the microcontroller is the focus of this lab, a student who has completed this course is expected to be able to , given an input or output device, design, develop, implement, and test the hardware and software interface so that the microcontroller can work correctly with the device(s). The microchip selected for this lab is the PIC microcontroller. Six lab assignments are designed to fulfill the above objectives: traffic light control, LED 5x7 DISPLAY, simple piano, temperature measurement, communication, and motor speed controller

10636527 Embedded Systems

On successful completion of the course all students will develop knowledge and understanding of the following: hardware and software design ability for basic, simple standalone embedded systems; basic hardware architecture of modern low/medium end microcontrollers, fundamental software architecture of the microcontroller-based embedded systems, user-processor interface design ability with LCD displays, keypads, and buzzers, assembler and C programming of stand-alone embedded system microcontrollers; timing in embedded systems by software code and by timer units; interrupt management, servicing, and hierarchical interrupt structures with application; building embedded networks with serial communication; application of the basic system design concepts on a design project.

10636111 Computer Programming

This course introduces students to basic programming concepts, with writing, executing and debugging programs, concepts of modularity and encapsulation. The course also focuses on modules, abstract data types, and basic data structures.

10221201 Calculus III

This course is a study of parametric equations and polar coordinates, vectors in R^2 and R^3 and surfaces, vector valued functions, partial differential with applications and multiple integration, and vector mathematics.

10221202 Engineering Mathematics

This course is a study of first order differential equations (homogeneous and non-homogeneous, separable DE, linear DE, Exact DE, integrating factor, applications), linear, second-order differential equations (modeling, homogeneous DE: equations with constant coefficients, Euler-Cauchy Equation; non homogeneous DE: undermined coefficients, variation of parameters), systems of differential equations, series solutions of differential equations, special functions (Bessel, Legendre, etc.), Laplace transforms, matrices operations; inverse matrix, determinants, linear system of equations, eigenvalue and eigenvectors, eigenvalue problems, and separation of variables.

10221230 Engineering Statistics and Probability

This course provides an elementary introduction to probability and statistics with applications. Topics include basic probability models; combinations; random variables; discrete and continuous probability distributions; statistical estimation and testing; confidence intervals; and an introduction to linear regression.

10223101 General Chemistry I

In this course, students learn basic concepts in chemistry, atomic structure, chemical law calculations, chemical bonding, forms of compounds, general laws in aqueous solution chemistry, general laws of gases and other theoretical subjects.

10621219 Engineering Mechanics

This course introduces the students to the fundamental concepts of vectors, the equilibrium of force system, rigid bodies, stress and strain axial and transitional stress equation of motion, work and energy impulse and momentum, Eigen frequency and Eigen mode of rotational system.

10626251 Engineering Numerical Analysis

Numerical analysis is concerned with finding numerical solutions to problems, especially those for which analytical solutions do not exist or are not readily obtainable. This course unit provides an introduction to the subject and treats the topics of solving nonlinear equations, both in one variable and in many variables, solving linear systems of equations and of approximating functions by polynomials. These topics are of great practical importance in science, engineering and finance, for example, and also have intrinsic mathematical interest. The course unit concentrates on theoretical analysis and on the development of practical algorithms.

10221302 Partial Differential Equations

Topics covered in this course include the formation of a partial differential equation, methods of solutions of first order linear and nonlinear partial differential equations, methods of solutions of second order linear and nonlinear partial differential equations, Fourier series and transforms, wave equation, Laplace's equation, potential equation, equation of an infinite wire and the heat equation.

10631301 Engineering Economic and Feasibility Studies

This course covers the fundamental tools and concepts of economical evaluations of business and engineering projects such as cash flow diagrams, discounted cash flow, break even and minimum cost analysis, present value, future value, net present value, interest rates, decision making analysis and depreciation. The course also covers fundamentals of feasibility studies such

as terms of reference, details and problems of the current system, Study methodology, possible solutions and recommendations including a description of the costs and benefits to the enterprise.

1063 | 207 Introduction to Engineering Management

This course covers several topics: human resources management, engineering code of ethics, technical reporting; management core topics such as planning, organizing, leading, and controlling. It also covers essential topics in project management, financial management, and marketing management, which are essential for future engineering managers to lead in high impact technology-based projects. Serving to further broaden students' perspectives is a discussion of web-enabled engineering applications and globalization, as well as the impact of these emerging market forces on engineering enterprises and managerial functions in the new millennium.

1064 | 291 Electrical and Electronic Circuits

This course introduces Ohm's law, Kirchoff's laws, and division rule, Nodal analysis, Mesh Analysis, linearity and superposition, Thevenin's and Norton's theorems; inductance and capacitance; AC circuits and three-phase circuit analysis; semiconductor materials; diodes and transistors circuits and operational amplifiers.

1064 | 292 Electrical Circuits

The course begins with introductory matters such as units, definitions, independent source, dependent source, Ohm's law, Kirchoff's laws, and division rule. Then it moves to other topics such as Nodal analysis, Mesh analysis, linearity and superposition, Thevenin's and Norton's theorems; inductance and capacitance; the sinusoidal steady-state response; and the phase concept. It ends with an introduction to alternating current circuits, power conditions and three-phase circuit analysis.

1064 | 293 Electronics

Topics covered in this course include semiconductor materials; p-n junction and p-n junction diode; DC analysis and models; Zener diodes; Schottky diodes; diode circuits: rectifiers, regulators, clippers, clampers, and multiple diode circuits; BJT transistors: basics, DC analysis, biasing, and applications; BJT amplifiers and their characteristics: common collector, common base, and common emitter; and the field-effect transistor: MOSFET and its DC analysis with applications.

1064 | 294 Electrical and Electronic Circuits Lab

In this lab, students will be introduced to laboratory equipment; Ohm's law, series-parallel resistances, Kirchoff's laws, voltage and current divider rules, delta-wye transformations, Thevenin's and Norton equivalents, superposition and reciprocal theorems, maximum power transfer and three-phase circuits

10641391 Electrical Machines

This course begins with a review of magnetic fields and circuits; single and three-phase transformers. It then moves to electromechanical energy conversion; DC-machines: DC-generators and DC-motors; starting DC-motors and speed control. AC-machines: single- and three-phase induction motors and three-phase synchronous machines.

10641392 Electrical Machines Lab

Students will conduct laboratory experiments on single- and three-phase transformers; electromechanical energy conversion, DC-machines: DC-generators and DC-motors; starting DC-motors and speed control, AC-machines: single and three phase induction motors and three phase synchronous machines.

10641591 Electric Drive

This course is an introduction to the electric drive of AC and DC electrical machines; sizing, selection and performance of AC and DC machines; starting circuits and smooth start of electric machines; analog, digital, and pulse width modulation (PWM) of speed control of AC and DC electrical machines.

Staff Members:

Name	Degree	University of graduate
Maher Khamash	Assistant Professor	Moscow Institute of Energy, Technological University, Moscow, Russia, 1993.
Marwan Mahmoud	Professor	University of Technology, Zurich, Switzerland
Allam Musa	Associate Professor	University of the Mediterranean, Cyprus, 1996
Imad Breik	Associate Professor	Venitta State University of Technology, Ukraine, 1996.
Mazen Rasekh	Associate Professor	Cardiff University, UK, 1980
Ahmed el-Masri	Assistant Professor	Polytechnique University de Torino, Torino, Italy, 2012
Samer Mayyaleh	Assistant Professor	University of the Mediterranean, Northern Cyprus, 1998
Sa'ed Tarabey	Assistant Professor	Polytechnique University de Torino, Torino, Italy, 2011
Falah Mohammed	Assistant Professor	Queens University, UK, 2004
Kamel Subhi Kamel		University of Nottingham, UK, 2004
Naser Abu Zeid	Assistant Professor	University of the Mediterranean, Turkish Cyprus, 2002
Jamal Kharousheh	Lecturer	University of Jordan, Amman, Jordan, 1988
Haneen el-Ott Jalodee	Lecturer	South Westphalia University of Applied Sciences, Soest/Germany, 2011
Ra'ed Jaber	Lecturer	Wayne State University, USA, 1999
Omar Tamimi	Lecturer	University of Newcastle, 2004
Yousef Da'ameh	Lecturer	University of Bradford, Bradford, UK, 2012

{ Energy and Environmental Engineering }

Vision

Provide undergraduate students with knowledge in the field of energy engineering and its impact on the environment, and meet the burgeoning needs of Palestinian and Arab markets for qualified engineers who can harness renewable energy, improve energy efficiency and environment protection.

Mission

- Develop advanced research that is competitive and with local/regional significance in the fields of energy and environment.
- Train high-quality research students who can engage in innovative energy and environmental research.
- Produce a new breed of professionals and engage them in energy and environment-related activities such as design, development, implementation, and improvement of renewable energy systems and distributed generation, setting up of strategies and offering consultancy in the fields of energy efficiency and management in all sectors.
- Develop technology and services that address energy needs and its consequences on environmental impact

Program objectives

Graduates of the Energy and Environmental Engineering Program at An-Najah National University are expected to possess the following qualities:

1. Professionalism in ethical, safety, economic and environmental factors, with a high ability to work within a team, and with good communication skills.
2. The ability to evolve with changes in technology, economic conditions, work environment and also to pursue life-long learning through higher education and/or professional development, while preserving the cultural heritage of the Palestinian people.
3. Team leadership skills to work in different countries and with interdisciplinary diverse teams, and sensitivity to cultural aspects with a strong foundation in energy and environmental engineering to meet the standards of local and international needs.

Program Outcomes

- An ability to apply knowledge of advanced mathematics and science to energy engineering and its environmental impacts.
- An ability to design and conduct energy engineering-based experiments while considering its environmental impact, and to analyze and interpret data.
- Ability to design a system, component, or process to meet desired needs, within realistic economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints.

- Ability to function in multi-disciplinary teams.
- Ability to identify, formulate, and solve energy engineering problems and their environmental impacts.
- Understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- Recognition of the need for, and an ability to engage in life-long learning.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills, and modern engineering tools necessary for energy engineering practice and its environmental impacts.

Study Plan

Program Requirements: **(159 credits)**

	Compulsory	Elective	Free	Total
University requirements	18			18
Department requirements	32 math and science courses 95 compulsory courses	12	2	141
Total	145	12	2	159

Admission Requirements

The students will compete for admission in the program based on their cumulative average in the General Secondary School Education Certificate (Tawjihi).

University Requirements (18 credits)

Course #	Course title	Credits
11000101	Islamic Culture	3
11000105	Palestinians Studies	3
11000102	Arabic Language 1	3
11000103	University English I	3
11000322	University English II	3
11000117	Leadership and Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1

Department Requirements

A.1. Math and science courses (32 credits)

Course #	Course title	Credits	Prerequisite
10221101	Calculus I	3	
10222101	General Physics I	3	
10221102	Calculus II	3	10221101
10222102	General Physics II	3	10222101
10222115	General Engineering Physics Lab	1	10222102 or concurrent
10221201	Calculus III	3	10221102
10221202	Engineering Mathematics	3	10221201
10223101	General Chemistry I	3	
10223107	General Chemistry I Lab	1	10223101 Or concurrent
10223102	General Chemistry II	3	10223101
10221230	Statistics and Probabilities for Engineers	3	
10626251	Engineering Numerical Analysis	3	10221202, 10636111

A.2. Energy Engineering and Environment Department courses (95 credits)

Course #	Course Title	Credits	Prerequisite
10621100	Engineering Workshop I	1	
10621101	Engineering Workshop Practice	0	
10606102	Engineering Drawing	2	
11032101	English for the Workplace	3	
10621219	Engineering Mechanics	3	10221101, 0223101
10636111	Computer Programming	3	
10656312	Modeling and Simulation of Energy Systems	3	10636111
10656413	Control Systems	3	10641391 , 10656311
10656251	Energy and Environment	3	10223101
10656452	Environmental Impact Assessment of Energy Systems	3	10656251,10656402
10626231	Fluid Mechanics	3	10223102
10626232	Heat Transfer	3	10626231
10656238	Thermo- Fluid Lab	1	10626232 or concurrently
10656233	Thermodynamics	3	10223102
10656434	Applied Heat and Cogeneration	3	10626232,10656233,10641391
10641292	Electrical Circuits	3	10221102
10641293	Electronics	3	10641292
10641294	Electrical and Electronic Circuits Lab	1	10656221 or concurrently with 0656221
10641391	Electrical Machines	3	10641291 ,10641292
10656322	Electrical Power Systems	3	10641391
10641411	Power Electronics	3	10656221
10641392	Electrical Machines Lab	1	10641391
10641426	Electrical Installation and Safety Systems	3	10641391
10641315	Electrical Measurements and Sensors	3	10641293,10641391
10656341	Solar and Wind Energy Systems	3	10641411
10656443	Solar Thermal Engineering Systems	3	10626232,10656233,10641411
10656445	Bio-energy Systems	3	10656233
10656448	Renewable Energy Lab	1	10656441,10656442,or concurrently
10656301	Energy Conservation and Auditing	3	10656233,10626232,10641411
10656308	Energy Conservation and Auditing Lab	1	10656301

Course #	Course Title	Credits	Prerequisite
10656402	Energy, Sustainability, and Life Cycle Assessment.	3	10656301
10656403	Energy Management	3	10656402
10621440	Heating and Air Conditioning	3	10626232; 10656233
10621482	HVAC and Refrigeration Lab	1	10621440 or concurrently
10656390	Internship 1	3	Department approval
10656598	Graduation ProjectI	2	
10656599	Graduation ProjectII	3	10656598
10626301	Professional Engineering Concepts	3	11000322

A.3. Free courses (2 credits) (Department approval)

B. Department Elective Courses (12 credits)

Course #	Course title	Credits	Prerequisite
10656541	Design of Hybrid R.E. Systems	3	10656341
10656542	Fuel Cell and Hydrogen Production Technology	3	10656341
10656543	Energy Storage Technology	3	10656341,10656443
10656544	Desalination of Water Using R.E.	3	10656341,10656443
10656545	Special Topics in Renewable Energy	3	10656341,10656443
Sustainable Energy			
10656504	Maintenance Management	3	10656403
10656505	Energy Policy	3	10656403
10656506	Special Topics in Sustainable Energy	3	10656403
10656507	Energy Efficient Building Design	3	10656403
Energy and Environment			
10656553	Raw Material Recycling and Energy Production Technology	3	10656452
10656554	Air Pollutants from Combustion Sources	3	10656452
10656555	Climate Change Risk Mitigation and Adaptation	3	10656452
10656556	Special Topics in Energy and Environment	3	10656452
10656523	Material Science	3	10656221
10656524	Energy Material	3	10656221
* 10656391	Internship II	3	Department approval

Courses offered for non-Energy and Environmental Engineering students

Course #	Course title	Credits	Prerequisite
10656237	Energy and Environment Engineering for High-Tech Education	3	High-Tech Education Department approval

Course Descriptions

10221201 Calculus III

Topics covered in this course include parametric equations and polar coordinates, vectors in R^2 and R^3 and surfaces, vector valued functions, partial differential with applications and multiple integration, and vector calculus and its aspects.

10221202 Engineering Mathematics

Students in this course are introduced to the classification and solution of first order equations with applications, higher order equations and solutions, and power series and solution. Students will learn the fundamentals of partial differential equations, and methods of solution of first and second order nonlinear partial differential equation.

10223101 General Chemistry I

In this course, students learn basic concepts in chemistry, the structure of atoms, chemical laws' calculations, chemical bonding, forms of compounds, general laws in aqueous solution chemistry, general laws of gases and other theoretical subjects.

10223107 General Chemistry I Lab

The objective of this course is to provide the students with experiences in general chemistry techniques, i.e., using the Bunsen burner, electric balance, calorimeter, and other glassware, and performing various chemistry techniques such as filtration, titration and gravimetric analysis.

10221230 Statistics and Probability for Engineers

Topics covered in this course include set theory, relative frequency and probability, joint probability and independent events, random variables, distribution functions, density functions, Gaussian random variables, multiple-random variables, joint-distribution functions, joint-density functions, conditional distribution functions, central limit theorem, random processes (stationary and independent), correlation functions, covariance, Gaussian random processes, spectral characteristics of random processes, the power density spectrum, cross-power spectrum, and the relation between correlation functions and power density spectra.

10641292 Electrical Circuits

This course studies circuit variables and elements, simple resistive circuits, techniques of circuit analysis, inductance and capacitance, natural and step response of RL, RC, and RLC circuits and the sinusoidal steady state analysis, power calculations, three phase circuits and power factor.

10641293 Electronics

This course provides students with an introduction to semiconductor materials and devices, DC and AC analysis of transistor circuits (BJT, MOSFET), amplifier circuits, bandwidth considerations; and feedback and stability. This is in addition to operational amplifiers and applications in filter and oscillator circuit design; voltage regulator and timer circuits; switching properties of transistors and digital gates (Inverter, NAND/AND, NOR/OR); and an overview of TTL and CMOS technologies.

10641294 Electrical and Electronic Circuits Lab

In this laboratory, students are introduced to lab equipment, Ohm's law, series-parallel resistance, Kirochoff's laws, voltage and current divider rules, delta-wye transformations, Thevenin's and Norton equivalents, superposition and reciprocal theorems, maximum power transfer; three phase circuits; characteristics of the p-n junction, the diode as a rectifier element, the common emitter amplifier, practical circuits skills, practical study of transistor circuits when soldering directly, coupled amplifier, operational amplifier study closed-loop output compensation voltage; inverting-amplifier study, anon-inverting amplifier voltage follower amplifier, and adder amplifier differential amplifier.

10641391 Electrical Machines

This course is a review of magnetic fields and circuits; single and three phase transformers; electromechanical energy conversion; DC-machines: DC-generators and DC-motors; starting DC-motors and speed control; AC-machines: single and three phase induction motors and generators. The course ends with a look at the three phase synchronous machines.

10641392 Electrical Machines Lab

Students perform laboratory experiments on single and three phase transformers; electromechanical energy conversion; DC-machines: DC-generators and DC-motors, starting DC-motors and speed control; AC-machines: single and three phase induction motors; and three phase synchronous machines.

10641411 Power Electronics

This course is an introduction to power electronics; the thyristor, triac, diac, GTO and IGBT; thermal considerations for the thyristor; single phase and

three phase rectifiers; harmonic analysis of rectifier types; inverters; dual converters; voltage regulators; commutation techniques and the DC/DC converter.

10656341 Solar and Wind Energy Systems

This course highlights properties of sunlight and solar irradiation and gives an overview of semiconductors and PV junctions; solar cells operation; operation and design; solar PV modules design; PV power system components; power conditioning circuits and batteries; PV power system applications, and system design and installation. This course then moves on to cover the principles of wind energy and wind power, as well as the design and operation of different types of wind energy converters. It will also present machines for water pumping, remote area power supply and grid electricity generation. The design and economic analysis of wind energy converters will be examined, including site selection, monitoring and analysis of wind data, estimating output from wind generators and their integration into hybrid power systems or the grid.

10656443 Solar Thermal Engineering System

The course begins with the characteristics of solar radiation and solar collectors; collector efficiency evaluation and prediction of long term performance; concentrated solar power technologies components and design. Then the course moves to geothermal energy systems; system modeling, energy storage; computer simulation and modeling of performance and economic worth.

10656328 Renewable Energy Lab

This lab is a series of experiments which demonstrate the principles of renewable energy systems, solar PV and wind energy.

10641426 Electrical Installation and Safety Systems

This course covers electrical illumination, lighting and power loads in buildings, industrial loads, distribution boards, elements of design; earthing and lightning systems, and protective devices.

10656233 Thermodynamics

Students in this course learn about the engineering science of energy and about the scope and limitations of thermodynamics. They also learn about macroscopic approach to heat, work, energy and the First Law of Thermodynamics; properties and state of pure substances, control-mass and control-volume energy analysis. They are also introduced to the Second Law of Thermodynamics, the principle of increase of entropy, limiting cycle efficiencies, and criteria for equilibrium. The course concludes with an introduction to energy.

10656251 Energy and Environment

This course introduces students to the following important subjects: energy systems and environment; consequences of pollution growth; air, water, soil, thermal, and noise pollution (causes and effects); causes of global, regional and local climate change; pollution control methods; and environmental laws on pollution control. The course also instructs students on sustainability: global warming; greenhouse gas emissions, and impacts, mitigation; sustainability; externalities; the effect of future energy systems; and the effect of clean energy technologies. The course ends with a look at the energy situation in Palestine.

10626251 Engineering Numerical Analysis

Numerical analysis is concerned with finding numerical solutions to problems, especially those for which analytical solutions do not exist or are not readily obtainable. This course provides an introduction to the subject and treats the topics of solving nonlinear equations, both in one variable and in many variables, solving linear systems of equations and of approximating functions by polynomials. These topics are of great practical importance in science, engineering and finance, for example. They also have intrinsic mathematical interest. The course concentrates on theoretical analysis and on the development of practical algorithms.

10636111 Programming Languages

This course introduces students to basic programming concepts, with writing, executing and debugging programs, and concepts of modularity and encapsulation. The course also focuses on modules and abstract data types. The course also covers basic data structures.

10656322 Electrical Power Systems

This course is an introduction to electrical networks, elements of power systems, transmission and distribution networks, power system calculations, analysis of electrical networks. The course also highlights the analysis of balanced and unbalanced three-phase systems, symmetrical components, and load flow. It also focuses on operations such as: frequency control, steady state and transient generator stability, voltage collapse, thermal constraints, variable speed drives, and power quality

10626231 Fluids Mechanics

Topics covered in this course include fundamental concepts; hydrostatics; integral and differential equations of fluid flows; conservation of mass, momentum and energy; pipe flow; flow over immersed bodies; and turbo machines.

10626232 Heat Transfer

In this course, students learn about the following: transient and steady heat conduction; energy balance in thermal systems; forced convective heat

transfer in internal and external flows; heat exchangers, natural convection, boiling and condensation.

10656238 Thermo- Fluid Lab

This lab includes a series of experiments which demonstrate the principles of fluid mechanics, thermodynamics, and heat transfer. Particular emphasis is placed on energy transfer in fluids.

10621440 Heating and Air Conditioning

This course begins with the criteria for thermal comfort, an introduction to heating and air conditioning systems; vapor compression systems; psychrometry; heating and cooling loads calculations. It then moves on to the classification of air conditioning systems; duct system and pipe system design; air conditioning control systems; standards, symbols, selection, and layout and installation of heating and air conditioning systems components. Students (individually or in groups) should perform short projects to practice the main principles of the course.

10621482 HVAC and Refrigeration Lab

Topics covered in this course include basic heating, ventilation, air conditioning and refrigeration service fundamentals with an emphasis on physical construction, leak checking, evacuating, electrical wiring, control circuits and electrical schematics; and basic HVAC system installation, maintenance and operating sequence start up and performing system checks on a heating, ventilation, air conditioning and refrigeration system.

10626301 Professional Engineering Concepts

This course lays the foundations for the professional development components of the engineering degree. It provides students with the awareness and understanding of the roles and responsibilities of professional engineers in society with respect to the environment, ethics, law, equity, culture, public, economic context, and worker safety and health considerations. It also introduces technical and other forms of work terms and/or work experience for report preparation, understanding national and international placement standards, and engineering logbooks. Finally, the course shall provide the students with effective technical writing, communications skills, interview techniques, skill assessment and analysis of career prospects.

10656403 Energy Management

This course covers several topics: energy management principles; energy conservation and audit reports; critical analysis; energy management goal definition and evaluation based on sector (industrial, commercial, governmental, ...etc) and sustainable energy development pillars (technical, environmental, economic, and social); energy management plans development and assessment; decision taking tools under single and multi-criteria conditions

taking into consideration the international decision making indicators for outranking energy alternatives (including and not limited to cost of energy, loss of power supply possibility costs, energy projects estimated yearly expenses, etc); sensitivity and uncertainty analysis role and techniques in energy management. Moreover, the student will learn the state-of-the art technologies used in the field of energy management.

10656434 Applied Heat and Cogeneration

This course examines the utilization and benefits of current cogeneration technology, distributed generation, and combined heat and power plant (CHP) concepts. It mainly focuses on the specific operating characteristics and economics of using gas turbines and steam turbines.

10656390 Internship 1

Each student is expected to spend eight weeks of training and work in a recognized engineering company and is required to prepare a detailed report summarizing his/her practical work experience: office and field experience.

10656391 Internship 2

This course is an extra training course, together with Internship I (0656492) These two, six hour credit courses allow some selected students to spend a full semester (either fall or spring) in training before the semester of graduation. Students are selected according to their achievements, the number of credit hours they have completed and the existence of the training opportunity.

10656413 Control Systems

This courses addresses representation and analysis of signals, Fourier transforms, linear time-invariant systems, impulse response, frequency response and transfer function. The course also provides an introduction to linear feedback control, and the analysis and design of classical control systems. It ends with a look at control system components and industrial process automation.

10641315 Electrical Measurements & Sensors

Topics covered in this course include measurement and error, electromechanical indicating instruments, bridge measurements, analog electrical instruments, digital instruments, oscilloscopes, sensors and transducers, and data acquisitions systems.

10656402 Energy, Sustainability, and Life Cycle Assessment

The purpose of this course is to address energy alternatives and life cycle assessment, taking into consideration the issues of sustainability from an engineering perspective (technical, environment, economic, and social). To do so, the student will learn the related principles of the engineering economy, the time value of money, projects feasibility estimation, and life

cycle assessment analysis (from cradle to grave). Moreover, the student will learn how to perform energy-related environmental, socio-environmental, and socio-economic life cycle assessment for energy alternatives and projects. To enhance practical skills, the course will enable the student to analyze a wide range of energy applications using the pre-mentioned analytic tools, including power generation stations (renewable and non-renewable) and industrial energy applications.

10656452 Environmental Impact Assessment of Energy Systems

This course will introduce students to the theory and practice of environmental impact assessment (EIA). The systematic identification and evaluation of the potential effects on the physical, biological, cultural, and socioeconomic components of the environment of proposed actions - projects, plans, programs- and legislation will be taught. The objective of EIA is to encourage consideration of the environment in the planning and decision-making of energy production processes to arrive at actions that avoid or minimize adverse impacts on the environment. Students will be divided into several groups to practice the preparation of an EIA for a project related to the energy production process.

10656598 Graduation Project I

The course provides an introduction to research methodology, ways of writing a literature review, the manner of writing technical reports, and the selection of the topic of the graduation project.

10656599 Graduation Project II

This course is mainly a study and analysis of a specific problem in a field determined jointly by the student and the supervisor.

10656445 Bioenergy Systems

This course is divided into two parts:

- Fuel properties and handling; combustion thermodynamics; chemical equilibrium; introduction to chemical kinetics; combustion in internal combustion engines.
- The sources of biogas and biomass; physical and chemical properties of biogas; potential of utilization biogas and biomass energy; biogas digester types – their design and characteristics.

10656301 Energy Conservation and Auditing

In this course, students will identify and explain all of the energy efficiency/conservation methods available for energy use reduction. Energy-consuming facilities, both domestic and commercial, will be analyzed by the students for energy efficiency opportunities. The students will calculate energy savings and environmental impacts for most energy efficiency methods in order to

identify and assess energy conservation opportunities. In addition, the students will demonstrate the appropriate usage of energy monitoring and measuring equipment commonly used by energy specialists and energy auditors

10656542 Fuel Cell and Hydrogen Production Technology

This course is an overview of the various types of fuel cells followed by a detailed discussion of the proton-exchange membrane (PEM) fuel cell fundamentals: thermodynamic relations, kinetics, and overall design and performance characteristics of PEM fuel cells. It also touches on hydrogen production technology, hydrogen systems modeling, hydrogen applications, life-cycle analysis methods, hydrogen production from hydrocarbons, hydrogen delivery and storage systems and safety.

10656541 Design of Hybrid R.E. Systems

This course focuses on the design of hybrid renewable energy systems; in particular, it focuses on estimating the performance and economics of such systems. It will focus heavily on the use of simulation programs to estimate these parameters for remote area power applications. Data requirements, method of operation, and strengths and weaknesses of these simulation tools will be presented. Practical sessions will allow the student to utilize these tools on a range of applications.

10656543 Energy Storage Technology

Topics covered in this course include the need for energy storage; different modes of energy storage; types of energy storage and potential of energy; sensible heat storage; storage; and latent heat thermal energy storage. The course ends with some areas of application of energy storage.

10656544 Desalination of Water Using R.E.

This course highlights solar thermal energy and desalination, solar stills, solar thermal membrane distillation, solar ponds, RE and desalination, design and operation of desalination plants powered by renewable energy.

10656545 Special Topics in Renewable Energy

This course addresses current advanced topics in renewable energy

10656504 Maintenance Management

This course introduces students to planning, organization, measurement, and control of maintenance activities; and the planning, acquisition, and control of replacement parts and maintenance of management information systems. The course ends with case studies and project work.

10656505 Energy Policy

This course provides an overview of energy policy issues with an emphasis on the supporting analysis needed to address the energy problems.

10656507 Energy Efficient Building Design

Students in this course learn about principles of integrated, energy-efficient building design; the application of codes and standards; energy modeling and simulation; lighting, natural ventilation, and architectural features of passive solar buildings; application of renewable resources, net-zero designs; life-cycle economic analysis; and the use of software tools for analysis of building energy systems.

10656506 Special Topics in Sustainable Energy

This course tackles current advanced topics in sustainable energy.

10656553 Raw Material Recycling and Energy Production Technology

“Resources of the Future: The waste to energy and recycling” is the forum for energy and materials recovery from waste and biomass. This course will focus on thermal treatment, biogas production, and secondary raw materials recycling, and the latest technologies in waste to energy concept.

10656554 Air Pollutants from Combustion Sources

This course discusses the generation of pollutants in combustion chambers, pollutant reduction by combustion control, as well as the pre- and post-combustion treatment of fuels and effluents. The emphasis is on the illustration (or introduction) of fundamental laws -- of physics, chemistry, thermodynamics, chemical kinetics, and momentum, heat and mass transport -- that govern these phenomena. At the end of the course, the students should be able to (a) identify and understand the bottom-line issues, including the preliminary design of air pollution control processes, and (b) effectively and efficiently locate the reliable sources of additional information where important and relevant details can be studied further.

10656555 Climate Change Risk Mitigation and Adaptation

This course begins with an overview of climate change and related issues: the physical science basis, impacts, and risk identification, mitigation and adaptation measures. It then moves to current energy systems and renewable energy resources; green building and end-use energy efficiency; local and regional vulnerabilities: extreme weather events, rise of sea levels, storm surge, coastal flooding and stress on water resources; associated adaptation and risk reduction measures.

10656556 Special Topics in Energy and Environment

This course raises current advanced topics in energy and environment.

10656523 Energy Material

This course is an introduction to material science and engineering; atomic structure and bonding, crystal structures and crystal geometry; solidification, crystalline and imperfections and diffusion in solids. It also presents mechanical

properties of metals; engineering alloys; electrochemical corrosion of metals; galvanic cells; thermo couples; electrical properties of semiconductors; the Hall effect; optical properties of materials; superconducting materials and magnetic materials.

10656523 Material Science

This course aims to introduce students to engineering materials and the relation between their properties and uses including materials classification, crystal structures of metals, mechanical properties, failure and mechanics of fracture, strengthening mechanisms, metallic phase diagrams, alloy systems and heat treatment methods for ferrous and non-ferrous alloys. It also gives students an ability to use these principles and information in the design of structures and equipment.

Staff Members:

Name	Academic Rank	University and Year of Graduation
Hasan Sawalha	Assistant Prof.	Wageningen University, the Netherlands, 2009
Amer Hmouz (Full Professor	University of Medical Sciences and Technology, Britain, 1992.
Marwan Mahmoud	Full Professor	Technical University , Zurich, Switzerland
Husni Odeh	Associate Prof.	Budapest University of Technology and Economics, Hungary.
Imad Brik	Associate Prof.	1996, Vinnitsa State Technical University, Ukraine
Aysar Yassin	Assistant Prof.	University of Catania, Italy, 2012.
Abdulraheem Abu Safa	Assistant Prof.	Middle East Technical University, Turkey, 1999.
Kamel Subhi Kamel	Assistant Prof.	The University of Nottingham, Britain, 2010.
Mohammad Al-Sayed	Assistant Prof.	University of Catania, Italy, 2013.
Ramiz Abdullah Al-Khalidi	Lecturer	

{ Industrial Engineering Department }

Vision:

Our vision is to continue to meet the evolving needs of the Palestinian and regional market through generating highly skilled engineers, who have the ability to add value to their organization, utilizing the technical capacities in diverse areas of industrial engineering.

Mission:

Industrial Engineering graduates from An-Najah National University are well capable of serving and developing the manufacturing and service sectors in Palestine and contribute greatly to improve their competitiveness nationally and internationally. This is fostered with the distinguished qualifications of the graduates in terms of technical skills, leadership and managerial proficiency.

Industrial Engineering program's educational objectives (PEOs):

- PEO1: Our graduates will be able to pursue successful careers in the Industrial Engineering field and other related industries.
- PEO2: Graduate students prepared to work in different countries and equipped with high ethical, social, and cultural sensibilities.
- PEO3: Our graduates will be able to pursue life-long learning and become successful professionals in their careers.

Industrial Engineering Program Educational Outcomes:

1. Ability to apply knowledge of mathematics, management science and engineering principles to various industrial engineering fields including manufacturing, quality, product design, safety and ergonomics, and service industries.
2. Ability to design and conduct industrial engineering experiments, as well as to analyze and interpret related data.
3. Ability to design manufacturing, service, quality and environmental systems and components, or industrial engineering processes to meet desired needs.
4. Ability to function on multidisciplinary teams.
5. Ability to identify, formulate and solve industrial engineering problems.
6. Understanding of professional and ethical responsibility.
7. Ability to communicate effectively.
8. The broad education necessary to understand the impact of industrial engineering solutions in a global and societal context.
9. Recognition of the need for and an ability to engage in life-long learning.
10. Knowledge of contemporary issues in industrial engineering fields.
11. Ability to use the techniques, skills and modern engineering tools necessary for industrial engineering practice.

Admission Requirements

Admission to the Industrial Engineering program at An-Najah National University will be on a competitive basis. The final minimum average required to secure an offer of admission will be determined on the basis of assessing the General Secondary Education (Tawjihi) average of the applicant pool.

Coding System

The course number consists of 7 digits as follows:

Course Number	Department Number	Faculty Number
3 digits	2 digits	2 digits
301	31	06

Industrial Engineering Code is 0631.

Requirements for a Bachelor Degree in Industrial Engineering

The Department of Industrial Engineering offers a single specialization in Industrial Engineering leading to a B.Sc. in the same major. Students wishing to major in Industrial Engineering must complete 160 credit hours successfully including practical engineering training. These include university compulsory and elective requirements (26 credits), college requirements (18 credits), and department compulsory and elective requirements (116 credits). These courses are classified as following:

Summary of Requirements for a B.Sc. in Industrial Engineering

Number	Requirements By		Number of Compulsory Credit Hours	Number of Elective Credit Hours	Total Credit Hours
University Requirements	1.	University Requirements	18	-	18
Program Requirements	2.	Free Courses	-	2	2
	3.	Math and Science	32	-	32
	4.	Humanities	6	-	6
	5.	Department Requirements	91	12	103
Total Credit Hours			147	14	161

University Requirements (18 Credit Hours):

Course #	Course Title	Credit H.	Pre-requisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	English Language I	3	-
11000322	English Language II	3	English Language I
11000105	Palestinian Studies	3	-
11010117	Leadership and Communication Skills	1	-
11000108	Society Service	1	-
11000127	Introduction to Computer	3	-
Total Credit Hours		18	

Mathematics and Science Requirements - Compulsory Courses (32 Credit Hours):

Course #	Course Title	Credit Hours	Pre-requisite
10221101	Calculus I	3	-
10221102	Calculus II	3	Calculus I
10222101	General Physics I	3	-
10222102	General Physics II	3	General Physics I
10222115	General Physics Lab. for engineering	1	General Physics II
10223101	General chemistry I	3	-
10223107	General chemistry I Lab.	1	General chemistry I
10221201	Calculus III	3	Calculus II
10221202	Engineering Mathematics	3	Calculus III
10631211	Quantitative Methods I	3	Calculus II (must pass this course)
10631311	Quantitative Methods II	3	Quantitative Methods I
10626251	Engineering Numerical analysis	3	Calculus II (must pass this course)
Total Credit Hours		32	

4.3 Department Requirements (Humanities included)

Compulsory Courses offered by Industrial Engineering department (68 Credit Hours):

Course #	Course Title	Credit H.	Pre-requisite
10631202	Introduction to Industrial Engineering	3	-
10631310	Computational Applications Lab	1	Introduction to Computer
10631332	Engineering Materials and Metallurgy	3	General Chemistry I (must pass this course)
10631325	Engineering Materials and Metallurgy Lab	1	Engineering Materials and Metallurgy
10631340	Manufacturing Processes I	3	Engineering Materials and Metallurgy
10631433	Manufacturing Processes II	3	Manufacturing Processes I
10631334	Engineering Metrology and Standards	3	Engineering Materials and Metallurgy
10631420	Methods Engineering	3	Industrial Accounting + Safety Engineering and Human Factors
10631372	Statistical Quality Control I	3	Quantitative Methods I
10631413	Operations Research I	3	Engineering Mathematics
10631431	Production Planning and Control	3	Quantitative Methods I + Introduction to Engineering Management
10631471	Facility Planning and Design	3	Operations Research I
10631440	Automation and Computer Integrated Manufacturing	3	Manufacturing Processes II
10631430	Manufacturing Processes Lab	1	Manufacturing Processes I
10631450	Machine Design	3	Strength of Materials
10631361	Automatic Control	3	Electrical Machines
10631480	Safety Engineering and Human Factors	3	-
10631589	Safety Engineering and Human Factors Lab	1	Safety Engineering and Human Factors
10631531	Total Quality Management	3	Statistical Quality Control I
10631590	Engineering Training I	3	Design and Management of Supply Chains
10631444	Design and Management if Supply Chains	3	Operations Research I
10631488	Critical Thinking Methods	2	-
10631301	Engineering Economy and Feasibility Studies	3	Calculus II (must pass this course)
10631207	Introduction to Engineering Management	3	-
10631591	Graduation Project I	2	-
10631592	Graduation Project II	3	Graduation Project I
Total Credits			68

Compulsory Courses offered by other departments (29 Credits):

Offered by department of	Course #	Course Title	Credit H.	Pre-requisite
Electrical Engineering	10641291	Electrical and Electronic Circuits	3	General Physics II (must pass this course)
Electrical Engineering	10641294	Electrical and Electronic Circuits Lab	1	Electrical and Electronic Circuits
Electrical Engineering	10641391	Electrical Machines	3	Electrical and Electronic Circuits
Electrical Engineering	10641392	Electrical Machines Lab	1	Electrical Machines
Civil Engineering	10601110	Statics	3	General Physics I (must pass this course)
Mechanical Engineering	10621210	Dynamics	3	Statics
Accounting	10861200	Industrial Accounting	3	-
Civil Engineering	10601207	Strength of Materials	3	Statics
Architectural Engineering	10606102	Engineering Drawing	2	-
Computer Engineering	10636111	Computer Programming	3	-
Mechanical Engineering	10621100	Engineering Workshop I(Theoretical)	1	-
Mechanical Engineering	10621101	Engineering Workshop I (Practical)	0	-
English	11032101	English in Workplace	3	-
Total Credit Hours			29	

C. Department's Elective Courses (12 Credits):

To determine one's major, a student may choose 12 credits from the 5th year level of Industrial Engineering courses as follows.

Engineering Management

Course #	Course Title	Credit H.	Pre-requisite
10631514	Statistical Quality Control II	3	Statistical Quality Control I
10631517	Decision Analysis	3	-
10631521	Energy Management	3	-
10631533	Simulation	3	-
10631534	Project Management and Network Analysis	3	-
10631535	Intelligent Systems in Manufacturing	3	-
10631536	Management Information Systems	3	-
10631581	Industrial Safety	3	-
10631582	Human Factors Engineering	3	-
10631511	Special Topics in Industrial Engineering I	3	-
10631512	Special Topics in Industrial Engineering II	3	-
10631585	Forecasting Methods	3	Production Planning and Control
10631586	Queuing Theory	3	Operations Research II
10631515	Operations Research II	3	Operations Research I
10631587	Design of Experiments	3	Quantitative Methods II
10631451	Maintenance Management	3	Quantitative Methods I
10631584	Engineering Training II	3	Concurrent with Engineering Training (I) + Department approval

Manufacturing and Engineering Design

Course #	Course Title	Credit H.	Pre-requisite
10631535	Intelligent Systems in Manufacturing	3	Automation and Computer Integrated Manufacturing
10631543	Non-Traditional Manufacturing Processes	3	Manufacturing Processes II
10631545	Design of Manufacturing Systems	3	Automation and Computer Integrated Manufacturing
10631552	Jigs and Fixtures Design	3	-
10631553	Product Design and Development	3	-
10631563	Automation	3	-
10631564	Computer-Aided Design (CAD)	3	-
10631566	Industrial Robots	3	-
10631581	Industrial Safety	3	-
10631584	Engineering Training II	3	Concurrent with Engineering Training I + Department approval

Maintenance Engineering

Course #	Course Title	Credit H.	Pre-requisite
10631517	Decision Analysis	3	-
10631533	Simulation	3	-
10631571	Maintenance Engineering I	3	Maintenance Management
10631572	Maintenance Engineering II	3	Maintenance Engineering I
10631573	Reliability Engineering I	3	
10631574	Reliability Engineering II	3	Reliability Engineering I
10631575	Contingency and Fault Tolerance Analysis	3	-
10631577	Computer-Aided Maintenance and Management	3	-
10631561	Material Properties and Corrosion	3	-
10631581	Industrial Safety	3	-
10631536	Management Information Systems	3	-
10631584	Engineering Training II	3	Concurrent with Engineering Training I + Department approval

Free courses (2 credit hours):

The student should complete 4 credit hours from courses offered by any college in the university. Moreover, he is allowed to choose these courses among the elective courses from the department if the selected courses differ in their contents or they have a content level lower than a compulsory course content level offered in his/her academic plan, in this case the student needs to get the department approval for his/her registration.

The following are free elective courses offered to the students of the Industrial Engineering Department and other students from outside the department

Course #	Course Title	Credit H.	Pre-requisite
1063175	Innovation Management and Marketing	2	-
10631576	Manufacturing in Palestine	2	-
10631577	Quality Systems (for Non-Industrial Engineering Students)	2	-
10631578	Strategic Planning	2	-
10631580	Entrepreneurship Development	2	-

The following are courses offered to the students of the Hi-Tech Education department/Faculty of Educational Sciences

Course #	Course Title	Credit H.	Pre-requisite	Course Level
10631480	Safety Engineering	3	-	Second Year
10631366	Engineering Metrology and Standards	3	-	Third Year
10631335	Engineering Economy	3	-	Third Year
10631323	Manufacturing Processes	3	-	Third Year

Course Descriptions

10631202 Introduction to Industrial Engineering

This course traces the historical development of industrial engineering, presents practice and trends. Definition of Industrial Engineering; its main levels, activities, and working fields. It also introduces basic theories in management, operations research, quality control and manufacturing processes.

10861200 Industrial Accounting

Introduction to management accounting operations, types of costs, budgeting, costing (based on ABC principles) and pricing systems. Cost based accounting for commercial and industrial firms. Students are also introduced to quantitative theories, information development and interpretation by decision makers and utilization of commercial software programs.

1063211 Quantitative Methods I:

The course includes the topics of probability theory and its applications (discrete and continuous probability distributions, random variables, and basic probability laws). The course is also focused on introduction to statistical analysis principles (sampling, standard deviations, and normal distributions). It also includes introduction to design of experiments.

10631207 Introduction to Engineering Management:

This course provides students with the basic knowledge on the topics of human resources management, engineering profession ethics, project management, and technical report writing. It also covers the principles of organizational management such as organizing, controlling, staffing and motivation in a way that reflects the importance of these topics in the current globalized markets.

10631301 Engineering Economy and Feasibility Studies

This course provides engineering students a practical background about the basics of decision making analysis, economic analysis and evaluation of cash flow diagrams, breakeven point and expenses reduction. The course also aims at teaching students the meaning of present value, future value of money. Finally, the course teaches the basics of feasibility studies for engineering projects.

10631444 Design and Management of Supply Chains

This course introduces the basics of Supply Chain Management, Planning of Supply Chains. Warehouse Design and management. It also includes design of Supply Chain Management Networks using Linear Programming and heuristic methods.

10631310 Computational Applications Lab

This course introduces students to computer software used in many industrial engineering applications. These include; Word processing, spreadsheet and statistical packages,, operations research, database, email, MS Project, Power Point, and other programs.

10631332 Engineering Materials and Metallurgy

Materials classifications, materials crystal composition, mechanical properties, phases forms, Ferrous and non ferrous alloys, heat treatment processes, plastics, and corrosion of metals.

10631325 Engineering Materials and Metallurgy Lab

This course includes topics of destructive and Non-destructive metal properties tests, metal composition tests, heat treatment processes, and corrosion tests.

10631340 Manufacturing Processes I

This course is a study of basic manufacturing processes including casting process, bulk deformation process, chip removal process, joining processes. The course also offers an introduction to numerical control machining.

10631433 Manufacturing Processes II

In this course, the emphasis will be on analysis of manufacturing processes (casting, metal forming processes, machining processes, plastic processes) from economic and mechanical perspectives. There will also be an emphasis on tool life, power consumption, and numerical control programming.

10631334 Engineering Measurement and Standards

Topics covered are error analysis, calibration of measuring devices, tolerances, linear measurements, fixed and deviation type gauges, measurements of pressure, temperature, force and power. The course also covers process of industrial specification and standardization, national and international standards.

10631372 Statistical Quality Control I

Quality and standards concepts, Operations control. Control charts for variables and attributes, standards and tolerances, process capability measures, and computer applications.

10631413 Operations Research I

This course is a study of deterministic operations research, modeling of linear programming. The course also covers problem formulation, simplex method and sensitivity analysis. There is also an extensive use of commercial software packages.

10631420 Methods Engineering

Methods improvement, work measurement, methods and practices of operations analysis, time and motion studies, assembly methods, design of instructions and procedures. The course also includes topics of development of performance indicators, salary scales and incentive schemes and the use of computer applications.

10631450 Machine Elements Design

Review of combined stresses and Mohr's circle, failure of machine parts under variable and fixed loads. Applications in machine element designs; including bolts, welded joints, springs, spindles, gears, brakes, clutches and conveyors.

10631440 Automation and Computer-Integrated Manufacturing

Introduction to Manufacturing Systems, compatibility of product and manufacturing process, concurrent engineering, Sensors and other components for industrial control systems, PLC, automation in handling, introduction to robotics and its applications in industry.

10631361 Automatic Control

This course introduces open-loop and closed loop control, Modeling, transfer function, block diagram, signal flow graph, state equations, feedback control system characteristics, sensitivity, disturbance rejection, steady-state error, performance specifications, relative stability and the root locus method. This course also looks at frequency response methods, performance in the frequency domain, Nyquist stability criterion and the Nichols chart.

10631488 Critical Thinking Methods

This course covers the following topics: Introduction to thinking methods and approaches, complex reasoning, Identification of common mistakes in arguments, ideas presentation techniques in professional/ academic environments and the way good reasoning is structured.

10631480 Safety Engineering and Human Factors

This course introduces safety measures that must be adhered to in plants, preventive measures to be available: hazard identification (mechanical, chemical, and electrical hazards). The course also emphasizes process charts, time and motion studies, work sampling, methods improvements, work place design, job evaluation and wage systems.

10631431 Production Planning and Control

Topics covered in this course are organization and functions of manufacturing planning and control, including forecasting theory, capacity planning, MPS & MRP systems, scheduling, and inventory control. There will also be an extensive use of software packages.

10631430 Manufacturing Processes Lab

This course includes experiments in machining, metal forming and casting, Computer Numerical Control, metal cutting using CNC machines.

10631471: Facility Planning and Design

This course includes plant location methods, total process analysis, process integration, material handling analysis, and traditional and computerized plant layout methodologies. Use of software packages.

10631589 Safety Engineering and Human Factors Lab

Students in this course will be asked to conduct a number of experiments: computer application and simulations on subjects covered in 0631480. Of these, students will make experiments on time and motion studied and machine guarding.

10631531 Total Quality Management

This course includes continuous process improvement, concurrent engineering, quality function deployment, benchmarking, Good Manufacturing Practices (GMP), and ISO 9000 Quality Management System.

10631591 Graduation Project I

The course provides an introduction to research methodology, ways of making literature review, the manner of writing technical reports, and specifying the topic of the graduation project.

10631592 Graduation Project II

This course is mainly a study and an analysis of a specific problem in a field determined jointly by the student and his/her advisor.

10631311 Quantitative Methods II

This course includes statistical methods applications in industrial engineering, hypothesis testing, analysis of variance, regression, introduction to experimental design, applications on MS-Excel and Minitab.

10631580 Entrepreneurship Development

The course covers the following topics: Introduction, evolution of entrepreneurship, entrepreneurial strategy and growth, the role of leadership, marketing challenges, and entrepreneurship based economy, Social entrepreneurship, and family businesses. The course will also present case studies about entrepreneurship.

10631517 Decision Analyses

Review of Probability Law, formulation of the decision problem, decisions under uncertainty and under risk, decision trees, Bayesian decision analysis intelligent systems in decision – making.

10631534 Project Management and Network Analysis

Activity modeling and network construction, CPM and PERT techniques, resource allocation, time and cost analysis, random variable in project management, projects monitoring and performance indicators, computer applications.

10631536 Management Information Systems

Introduction to software and hardware technology, institutional structure and its relation to decision taking techniques, information systems development cycle, databases, applications of management information systems.

10631451 Maintenance Management

Maintenance organization, components of a maintenance plan, impact of maintenance on production, system operation and documentation, manual and computerized documentation systems, planned maintenance, FMEA methodology and related topics. The course also gives an overview about reliability engineering and its effects on production systems.

10631533 Simulation

Using statistical models to represent actual systems, using simulation languages and tools to assess and study systems, collection and analysis of data and information for simulation systems and computer applications.

10631545 Manufacturing Systems Design

This course includes analysis and design of production lines, manufacturing cell design, flexible manufacturing, workstations capacity, manufacturing information systems, and economics of manufacturing systems.

10631535 Intelligent Systems in Manufacturing

Introduction to intelligent systems historical development, expert systems and its applications in engineering management and manufacturing, knowledge management, introduction to neural networks and its industrial applications, computer applications.

10631543 Non-traditional manufacturing processes

Revision for traditional manufacturing processes, jet machining, laser machining, forming using mechanical energy, electric discharge machining (EDM), Wire cutting, chemical forming, and other methods.

10631515 Operations Research II

Review of the simplex method, Integer Programming, Dynamic Programming, introduction to stochastic processes, Non-Linear Programming, Markov chains and queuing systems. The course also includes the use of supportive educational software packages.

10631552 Jigs and Fixtures Design

Fundamentals of jigs and fixtures, principles of molds, dies and tools design, applications of these fundamentals and principles in metal cutting and forming process.

10631553 Product Analysis and Design

This course includes identification of product need, functionality analysis, design requirements, design processes, concurrent engineering, design for manufacturability, design for quality, and rapid prototyping.

10631564 Computer Aided Design

Computer aided design in 2D and 3D, finite element analysis of parts, components and subsystems. The course also focuses on the use of computer software applications.

10631563 Automation

Automation and computer aided manufacturing, group technology, automation in design and manufacturing, material handling, process planning, NC, CNC, DNC, and part programming, and introduction to flexible manufacturing systems.

10631571 Maintenance Engineering I

Maintenance Concepts, cost of maintenance and profitability failure modes, condition-based maintenance, diagnosis, environmental stress, wear and corrosion, preventive maintenance, and techniques.

10631572 Maintenance Engineering II

Topics covered in this course include Maintenance problems in machine tools, pumps, compressors, steam turbines, refrigerators, and other machines, Maintenance of buildings, ventilation, heat, electricity and others, the impact of maintenance on safety, energy and the environment.

10631573 Reliability Engineering I

Explain the concepts of total reliability, the reliability function, distributions of the reliability, failure rates, product life cycle, identification and reliability of products and services, inspection and reliability components of products and services, inspection and reliability components of products, acceleration tests, and the design for reliability improvement.

10631575 Contingency and Fault Tolerance Analysis

Topics covered in this course include large scale systems and network theory, concepts and applications of short tracks, linking groups, Analysis of service and interruption, Assessment of system reliability and methods of drawing and the use of networks, the use of data collection, and other related topics in addition to a course project.

10631577 Computer Aided Maintenance Management

Analysis of maintenance information system, identify particular needs of software and hardware of the computer in maintenance, planning and scheduling of maintenance, the use of expert systems in maintenance, and other topics, use of software packages.

10631581 Industrial Safety

This course includes Risk Analysis, Causes and costs of failure, governmental legislations, Safety standards, tools and machines protection, Safety Management, safety protection programs, Protection from electrical and chemical hazards, noise protection, and Safety International laws and standards.

10631586 Queuing Theory

This course includes a review of the stochastic processes, Markov chains and Single Servers. Then it covers topics like Queuing Systems, Open/Closed Queuing Networks, Jackson Networks and perturbation analysis.

10631587 Design of Experiments

The course is a study of the following topics: a review of single factor design, Randomized blocks and Latin squares, factorial designs, blocking and confounding in factorial design, fitting regression models and response surface methodology.

10631576 Manufacturing in Palestine

The course discusses the following topics: Structure and types of manufacturing firms in Palestine, Technologies used, challenges, threats and possible solutions. The course also gives insights about: what does it take to excel in manufacturing? And it tries to reflect upon (from successful Palestinian companies) how to compete at a global level.

1063175 Innovation Marketing and Management

The course introduces the definition of innovation, why should companies innovate, how to manage innovation and its creation process and How to build a marketing plan that supports the innovation idea. The course is supported by a set of case studies discussing each aspect.

Staff Members:

Name	Degree	University of graduate
Ayham Jaaron	Assistant Professor	Loughborough University, England, 2010
Ahmed al-Ramahi	Associate Professor	Eastern Mediterranean University, Turkey, 1997
Bashar sadder(onleave)	Assistant Professor	Brigham young University, Utah, USA, 2005 (On leave)
Husam Arman	Assistant Professor	The University of Nottingham, UK, 2008
Mohammed Azzam	Assistant Professor	Concordia University, Monteral, Canada, 2007 (On leave)
Ramiz Assaf	Assistant Professor	Politecnico di Milano, Italy, 2012
Yahya Saleh	Assistant Professor	Bilkent University, Ankara, Turkey, 2011
Mohammed Antar	Lecturer	University Of Birmingham, UK, 2007 (On leave)
Nidal Y. Dwaikat	Lecturer	Turin Institute of Technology, Italy, 2008
Suleiman Z. A-Daifi	Lecturer	University of Jordan for Science & Technology, Amman, Jordan, 1996
Tamer Haddad	Lecturer	The University of Jordan, Jordan, 2009
Lubna Dwaikat	Teaching Assistant	An-Najah National University, Palestine, 2010

{ Management Information Systems }

Vision:

The MIS Department aspires to be an innovative research leader in managing information systems at the local and international level.

Mission:

Our mission is to graduate highly-qualified students with multiple competencies in information technology and management. The MIS Department works hard to lead the market and information technology industries by persistent research and development in these disciplines.

Program educational objectives:

The program aims to place graduate students in professional careers belonging to information systems and management. The students are expected to be leaders in their establishments, leading and promoting the use of information technology and its application to business. MIS graduates are expected to be managers and team leaders in their establishments.

Program outcomes:

- Students will have a good knowledge of organizational functions and management.
- Students will master programming languages, concepts, and types.
- Students will have good knowledge of management information systems and their technology within organizations,
- Students will acquire the required knowledge for strategic planning within the context of information technology.
- Students will be able to manage different phases in the software development life cycle.
- Students will be able to use management information systems to enhance decision making.
- Students will have the required knowledge and skills to initiate startup projects and entrepreneurship.

Graduation Requirements for the B.Sc. Degree in MIS

The student must complete 121 credit hours, distributed as follows:

1. Program requirements: 103 credit hours (85 Compulsory + 18 Elective)
2. University requirements: 18 credit hours

Program Requirements:

Student must complete 102 credit hours, distributed as follows:

Compulsory Courses: 85 Credit Hours (73 Core Courses+12 Support Courses)

Core courses (73 Credit Hours):

Course #	Course Name	Credit Hours	Prerequisite Course
10676111	Introduction to MIS	3	---
10681101	Principles of Programming & Problem Solving	3	---
10866121	Principles of Management	3	---
10681102	Fundamentals of Object-Oriented Programming	3	10676111
10681204	Web Systems Development I	3	10676102
10681210	Data Structure	3	10676102
10676211	Decision Analysis	3	10676122
10676270	Database Management and Application	3	10681210
10676230	Organizational Development and Change Management	3	10676111
10676260	Operations Management	3	10676111
10681383	Web Programming II	3	10681204
10676213	Operations Research and Applications	3	10676122
10676323	Project Management	3	10676213
10676345	Business Data Communications and Networking	3	10681210
10676321	E-Commerce	3	10681383
10676336	System Analysis	3	10676122
10676350	Software Quality Assurance	3	10676323
10676324	Security of Information Technology	3	10676345
10676414	Decision Support System	3	10676321
10676433	Enterprise Applications	3	10676260
10676470	Strategic Management in the Digital Organization	3	10676230
10676415	Entrepreneurship in IT	3	10676321
10676450	Internship in MIS	3	Department approval
10676490	MIS Project	3	10676336
10676499	Principles of Scientific Research	1	Department approval

Support Courses (12 Credit Hours):

Course #	Course Name	Credit Hours	Prerequisite Course
10676121	Business Mathematics	3	---
10676151	Principles of Accounting And Finance	3	---
10676122	Business Statistics	3	---
10676222	Business Communication and Technical Report Writing	3	11000325

Elective Courses

Student must complete 18 credit hours from the following list:

Course #	Course Name	Credit Hours	Prerequisite Course
10676320	Information Systems Risk Management	3	10676270
10676430	New Trends in MIS	3	Department Approval
10676332	Multimedia Technology	3	10681204
10676440	Data Warehousing and Data Mining	3	10676270
10676330	E-Marketing	3	10681383
10871313	Corporate Financial Management	3	10676151
10866220	Human Resources Management	3	10676260
10681471	Health Information Systems	3	10676270
10676480	Business Process Management	3	10676260

University Requirements

Student must pass 18 credit hours as follows:

Course #	Course Name	Credit Hours	Prerequisite Course
11000101	Islamic Culture	3	---
11000102	Arabic Language	3	---
11000103	English Language I	3	---
11000325	English Language II	3	11000103
11000104	Palestinian Studies	3	---
11000117	Leadership and Communication Skills	1	---
11000108	Community Service	1	---
11000127	Introduction to Computer Science	1	---

Course Descriptions

10681101 Principles of Programming & Problem Solving

This course introduces the fundamental concepts of programming, problem-solving, and logical thinking. It includes input/output (I/O); expressions; arithmetic; if, while and for statements; one-dimensional arrays; string handling; functions; scope; recursion; and matrices.

10866121 Principles of Management

The aim of this course is to develop the student's concepts of 'Management' - its principles, methods, theories, schools, fields, problems, and elements. It also aims at providing students with information about its history and philosophy, its processes, planning, organisation and evaluation. The course is also planned to keep the student abreast of recent developments in management where students will diagnose some management problems and take rational decisions.

10676121 Business Mathematics

This course covers fundamental mathematical operations and their applications to business problems. Topics such as computing wage and income, buying and selling efficiently and other pertinent uses of mathematics in the field of business will be emphasized. The acquired knowledge will be applied using spreadsheets.

10676151 Principles of Accounting And Finance

This course is an introduction to basic concepts in accounting and finance and their applications to decision making by a wide range of potential users (e.g., shareholders, investment analysts, lenders, managers, etc.). This course is designed for IT students to understand and use the accounting language/process and finance concepts to enable effective communication, analysis and interpretation of accounting information within a business environment. Accountin/Finance CBIS will be implemented.

10681102 Fundamentals of Object-Oriented Programming

This course introduces the principles of object-oriented programming (OOP). The student will understand the effects of using OOP in the software development life cycle. He/she will also learn the basic fundamentals of OOP, understand class reusability, understand hiding complexity, build his/her own package of classes, develop systems with graphical user interface (GUI), learn

exception & error handling concepts, learn event handling concepts, and learn streaming and file management concepts.

10676111 Introduction to MIS

The course covers the basic concepts of management information systems and communication technology. The importance of information technology to support operational processes, achieve organizational goals and enhance the decision-making process will be emphasized.

10676122 Business Statistics

The course aims to provide the student with the skills and knowledge necessary to use statistics in the business domain. Topics such as descriptive statistics, measures of central tendency and variability, probability, hypothesis testing, inferences, correlation and regression analysis will be emphasized.

10681204 Web Systems Development I

This an introduction to internet applications, basic concepts of web programming, HTML, XHTML, Javascript, server-side programming and scripting (PHP, XML), and web site creation case studies.

10681210 Data Structure

This course is an introduction to the various data structures based on object-oriented methodology. It focuses on data structures that help students to store large data in an efficient way. The course covers lists, stacks, queues, heaps, trees, search trees, hash tables, the analysis and implementation of data structures, recursion, sorting and searching.

10676222 Business Communication and Technical Report Writing

This course will provide learners with an opportunity to apply principles of effective communication to master business correspondence and technical writing. Particular attention is paid to analyzing the following: audience, subject, purpose, designing visual aids, and utilizing web 2.0 technologies to enhance communication.

10676211 Decision Analysis

This course is intended to provide basic knowledge of the main elements involved in decision making. This includes decision modeling, decision analysis approaches, decision trees and the value of information, decision making under certainty, and risk and uncertainty. Software packages will be used to apply acquired knowledge.

10676213 Operations Research and Applications

This course introduces Operations Research principles and practices in decision making. The course focuses on mathematical programming techniques such as linear programming (the simplex method, duality and sensitivity analysis),

and network optimization methodologies (including transportation and assignment problems).

10676270 Database Management and Application

This course covers database concepts, as well as their implementation using modern DBMS. Conceptual modeling, relational model and normalization will be emphasized.

10676230 Organizational Development and Change Management

This course provides learners with the necessary knowledge and skills required in modern organizational development. The course will focus on building learners' managerial and technical competencies to identify weaknesses and provide competitive solutions, as well as crafting and implementing the planned change in a total system, ranging from a simple work unit through a company division up to an entire organization.

10676260 Operations Management

The course introduces the main concepts of operations management. The role of information technologies to enhance operation within organization will be emphasized. Topics covered by this course includes: forecasting, business planning, capacity planning, inventory and purchasing systems, just-in-time productions and other related topics.

10681383 Web Programming II

In this class, students will utilize the knowledge learned in previous classes to create server-side PHP programs used to manipulate Web applications, files, email and databases. Students will utilize project planning skills, as well as utilize problem-solving techniques to write effective applications. Strong emphasis will be put on understanding the interaction between user agents and server side code, data validation, the need for secure transactions, the tracking of site visitors and email communications.

10676323 Project Management

This course has been designed to provide students with the knowledge and skills necessary to understanding the project management process, the techniques employed in effective project management, and the application of these project management tools in the working environment.

10676345 Business Data Communications and Network Models

The course is designed to introduce students to business data communication and networking fundamentals. Different network models, protocols, technologies and design will be emphasized.

10676321 E-Commerce

This course introduces the major concepts of E-commerce from business,

social and technological perspectives. The assessment of its major opportunities, limitations, issues, and risks will be discussed.

10676336 System Analysis

This course will introduce major concepts of information system analysis and design. Various information system development methodologies will be discussed. Students will apply acquired knowledge using real case studies.

10676350 Software Quality Assurance

This course will address topics in software quality assurance. Defect prevention and correction, formal validation, and different software testing methodologies will be illustrated. Certain models and standards of software quality will be emphasized.

10676324 Security of Information Technology

This course is designed to provide students with a thorough understanding of computer security technologies. This includes high-level issues such as security policy (modeling what ought to be protected) and engineering; cryptography and its underlying mathematics; and a wide variety of attacks ranging from network exploits through malicious code to protocol failure.

10676414 Decision Support Systems

This course is designed to cultivate a comprehensive understanding of decision support systems and expert systems and their increased role in organizations. The course will cover the different methods and techniques used in the AI field with direct implementation in business and managing organization.

10676433 Enterprise Applications

This course covers main concepts to enterprise applications (ERP, CRM and SCM) and their interrelationship. It discusses the re-design of business processes, changes in organizational structure, and effective management strategies that will help assure competitiveness.

10676470 Strategic Management in the Digital Organization

This course aims to provide the learners with the opportunity to construct a clear comprehension of the fundamental principles and concepts of strategic management. There is an emphasis on information technology strategic management in order to face contemporary business challenges. Learners will be able to analyze the business environment to effectively utilize IT through integrating management, structure, culture and strategic planning.

10676415 Entrepreneurship in IT

This course is a practical hands-on business course designed for students interested in starting their own information technology-related business. The skills necessary to generate innovative ideas will be emphasized. The course

focuses on the steps necessary to plan, initiate, maintain, modify, finance and market a new business from an entrepreneurial perspective.

10676450 Internship in MIS

During the internship period, students will be employed and supervised by firms and are expected to participate in various types of IT- and management-related work in accordance with a plan approved by the Department and the Faculty. The student must complete at least 280 hours of training during the regular working hours of the firm. This course can be taken in the summer between the student's junior or senior years.

10676490 MIS Project

This course gives students the opportunity to apply the knowledge acquired during their studies into practice. This is realized by finding solutions to a real MIS problem related to the business community in Palestine. All problem aspects will be included in the project, including project management, hardware and software requirements, performance evaluation of MIS, and a comparison among MIS alternatives.

10676320 Information Systems Risk Management

This course will provide students with a strategic and in-depth knowledge in the field of information systems risk management. It explores the relationships and differences between standard risks attached to business, project and information security activities from the perspective of risk-management. This includes risk assessment, recovery procedures, strategy, and the use of appropriate tools to identify, analyze risks, and establish response plans. Special and contemporary issues in risk management will be also discussed.

10676430 New Trends in MIS

The course is designed to allow students to cope with any new trends or topic in MIS.

10676499 Principles of Scientific Research

This course is an introductory course in scientific research. It provides students with skills and techniques required to conduct authentic scientific research. Students will discuss, present and criticize hot topics of interest in the domain of management information systems from scientific journal articles.

10676332 Multimedia Technology

This course has been designed to provide students with knowledge and skills in multimedia domain. Coloring systems will be emphasized. Various types of images, videos and audio will be discussed. Students will also create multimedia application using multimedia authoring tools.

10676440 Data Warehousing and Data Mining

This course will introduce students to data warehousing. All phases for building a data warehouse will be emphasized. Students will learn methods and algorithms used to mine data warehouses.

10676330 E-marketing

This course introduces students to the main concepts and trends in marketing using modern technology. Emphasis will be on internet marketing.

10676480 Business Process Management

This course will introduce business process management (BPM) concepts to students. This includes simulation, verification, and linking processes to business and social aspects. Differences between workflow management systems and BPM will be emphasized. Current technologies influenced by BPM are represented, such as service-oriented architectures, BPMN and BPEL. Different process languages are described (Petri nets, Workflow nets, YAWL). Process analysis using these languages for process verification and validation are introduced as well.

10871313 Corporate Financial Management

This course aims at introducing students to the historical development of the role of financial management in projects, the functions of the Financial Department, profitability, planning, financial planning, financial forecasts and analysis, the employment of financial percentages, the management of working capital and exchanged assets. The course covers the management of short-term financial sources, financial exchange markets and long-term financial sources (stocks and bonds).

10866220 Human Resources Management

This course takes a critical look at organisations' principles, methods and resources. Topics covered include strategic human resources development and management for effective employee training and education. It also discusses management issues on employment recruiting, testing, selection and placement, job evaluation, wage and salary administration, labour relations and communication, performance evaluation, benefits and services, discipline, motivation, morale, accident prevention and safety.

10681471 Health Information Systems

This module addresses key themes in healthcare information systems that aim to provide the necessary infrastructure needed to manage and produce relevant, timely and accurate information to support the healthcare organization and its users. Lectures will be used to introduce key concepts in information systems within national and international healthcare services, supplemented with additional self-study material. The lecture course for this module is divided

into three main sections: (1) Overview of Health Information Systems; (2) Developing the Information System; and (3) Supporting the Information System. Areas covered include: information systems theory, the healthcare organization and its environment (including administrative, acute and primary care settings), planning and strategy, systems development, evaluation, supporting infrastructures and technologies, and data protection and security.

Staff Members:

Ahmad Shraideh:

- PhD in Business Process Optimization and Modelization, Ecole centrale de Lille, 2009.
- Master 2: “Information Systems and Helping in Decision Making” (USTL) Lille 1, 2006.
- BSc in Computer Science, An-Najah National University, Nablus, 2001.

Maher Abu Baker:

- MBA (Concentration: Accounting Information Systems), An-Najah National University, Nablus, 2000.
- B.Sc. Computer Science, Al-Quds University, College of Science and Technology, Abu-Deis, Jerusalem.

Maher Arafat:

- Master of Education: Curriculum Development & Teaching Methods, An-Najah National University, Nablus, 2011.
- MBA, An-Najah National University, Nablus, 2003. • BSc in Computer Information Systems, Shaw University, North Carolina, USA, 1985.

Mohammed Abdel Khaleq Dwikat:

- Master of Science in Management Information Systems, Oklahoma State University, Stillwater, Oklahoma, June 2007.
- Bachelor of Science in Computer Science, An-Najah National University, Nablus, Palestine, 1995.

Kamal Irshaid

- MSc in Computer Science – Information Systems, DePaul University, Chicago, Illinois, USA, 1990.
- BSc Computer Science – Information Systems, Northeastern Illinois University, Chicago, Illinois, USA, 1985,

Najwan Jamil Ahmad Deleq

- Master of Computer Information Systems in Al-Yarmouk University, Jordan. 2007.
- BSc in Information Technology (Management Information Systems), An-Najah National University – Nablus, 2005.

{ Mechanical Engineering Program }

Introduction:

Mechanical Engineering is the oldest field of engineering specializations. In the past decades, Mechanical Engineering shared the development and civilization of different nations. Mechanical Engineering used the energy of waterfall, wind and steam for the technological development and civilization. Mechanical Engineering focuses on energy conversions, power machines, machine design, production processes, and testing and evaluation of the industrial products.

Some of the most important branches of Mechanical Engineering are: Applied Mechanics, and Thermal Power. Due to its importance in development and civilization, and due to the needs of the Palestinian community for specialized and well trained mechanical engineers, the Engineering Faculty established the Mechanical Engineering Program in the year 2002. Admission to the Mechanical Engineering Program was started in the first academic semester 2002 /2003.

The study period in the Mechanical Engineering Program consists of fulltime five years of education. During their study in the program, students can concentrate their study in one of the two fields of specializations: Applied Mechanics, or Thermal Power which includes HVAC systems.

Program vision:

The vision of the Mechanical Engineering Program of An-Najah National University can be stated by:

Educate engineers who can blend all types of modern technology and provide it to the society to have a respective enhancement in the development.

Program Mission:

The mission of the Mechanical Engineering Program is focused in three dimensions, locally, regionally and internationally, and it is based and compromises well with the missions of both the Engineering Faculty and the University. Mechanical Engineering Program was established to take an advanced-important position in the development of the local society, by providing the local and regional work-market with well educated and trained Mechanical Engineers taking into account the international standards in education and training.

Program Objectives:

The objectives of the Mechanical Engineering Program compromises well with both program's vision and mission, and may be listed as follows:

1. Mechanical Engineering graduates are able to contribute knowledge, skills time and efforts to the profession, and to local & regional communities.
2. Mechanical Engineering graduates are well prepared to possess successful careers in the fields of Mechanical Engineering in local and regional markets. They demonstrate professionalism and a sense of social and ethical responsibilities in all their endeavors.
3. Mechanical Engineering graduates are well prepared to engage in life-long learning throughout pursuing graduate studies, professional development, practical training, and/or specialized certifications.

Admission Requirements

Students will compete for their admittance to the Mechanical Engineering Program according to their accumulative average in the General Secondary Education Certificate (Tawjihi), and University admission requirements.

Graduation Requirements

The Bachelor degree in Mechanical Engineering requires the successful completion of a minimum of 160 credit hours distributed between University and program requirements as shown in the following table:

	Compulsory	Elective	Free	Total
University Requirements	18			18
Program Requirements	129	12	2	143
Total	147	12	2	161

Indications of the course subject's digits:

The numbering system consists of 7 digits, the indication of each digit from left to right as follows:

- The first and second digits indicate the faculty: the number 06 indicates Engineering.
- The third and fourth digits indicate the study program: the number 21 indicates Mechanical Engineering. The fifth digit indicates the academic level: numbers in the range 0 to 5.

The sixth digit indicates the field number of each course such as shown in the following table:

Specialization	field Number
General	0
Mechanical Systems and Vibrations	1
Thermal and Fluid	2
Engineering Materials and Production	3
Thermal Systems and Power Stations	4
Projects, Articles and Special Topics	5

The seventh digit indicates a serial number for the course within the field and academic level.

Example:

The number of the course of Machine Design (2) is 0621410

Machine Design (2)					0621410	
0	6	2	1	4	1	0
Engineering Faculty		Mechanical Eng.		Level	Field	Sequence

University requirements (18)

Eighteen (18) mandatory credit hours, as follows:

Course #	Course Title	Credit H.	Prerequisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	English Language I	3	-
11000105	Palestinian Studies	3	-
11000108	Community Service	1	Finishing 32 credits
11000117	Leadership and communication skills	1	-
11000127	Introduction to Computer Science	1	-
11000322	English Language -II	3	-

Program Requirements (143)

Compulsory (129)

Hundred and twenty six (129) credit hours of engineering coursework are required to fulfill the program compulsory requirements:

Course #	Course Title	Credit H.	Prerequisite
10221101	Calculus I	3	
10221102	Calculus II	3	10221101
10221201	Calculus III	3	10221102
10221202	Engineering Mathematics	3	10221201
10221230	Probability and Statistics for Engineers	3	10221102
10222101	General Physics I	3	
10222102	General Physics II	3	10222101
10222115	General Physics Lab. For Engineering	1	10222102, or in Parallel
10223101	General Chemistry (1)	3	
10223107	General Chemistry (1) Laboratory	1	10223101
10601110	Statics	3	10221101 , 10222101
10606102	Engineering Drawing	2	
10621100	Engineering Workshop (1)	1	
10621101	Engineering Workshop (1) Practical	0	10621100, or in Parallel
10621200	Engineering Workshop (2)	1	10621100
10621201	Engineering Workshop (2) Practical	0	10621200, or in Parallel
10621214	Strength of Materials	4	Success in 10601110
10621210	Dynamics	3	10601110
10621213	Mechanical Drawing	2	10606102
10621220	Thermodynamics (1)	3	10222101, 10223101
10621301	Software Applications in Mechanical Engineering	2	10636111
10621310	Theory of Machines	3	10621210
10621317	Machine Design (1)	3	10621214
10621320	Fluid Mechanics (1)	3	10221202, (Success in 10601110)
10621328	Fluid Mechanics Lab.	1	10621320
10621329	Thermodynamics (2)	3	10621220
10621330	Engineering Materials	3	10223101, 10621200
10621331	Properties and Strength of Materials Laboratory	1	10621330, 10621214
10621332	Production and Manufacturing Processes (1)	3	10621330
10621400	Internship (1)	3	Finishing 120 Credits
10621410	Machine Design (2)	4	10621317
10621413	Applied Mathematics for Engineers	3	10221202
10621414	Mechanical Vibrations	3	10621210, 10221202
10621416	Mechanics of Machines and Vibrations Lab.	1	10621414, 10621310
10621420	Heat Transfer (1)	3	10621220
10621426	Thermal Sciences Laboratory	1	10621420
10621440	Heating and Air Conditioning	3	10621420, 10621320
10621522	Operations Management	3	10631301
10621526	Turbo-Machinery	3	10621320, 10621329
10621529	Buildings Mechanical Systems	3	10621320
10621551	Graduation Project (1)	2	Finishing 120 Credits
10621552	Graduation Project (2)	3	10621551
10626251	Engineering Numerical Analysis	3	10636111, 10221202

Course #	Course Title	Credit H.	Prerequisite
10631301	Engineering Economy and Feasibility Studies	3	10221102
10636111	Computer Programming	3	
10636410	Critical Thinking and Research Skills	3	
10641291	Electrical and Electronic Circuits	3	10222102
10641294	Electrical Circuits and Electronics Lab.	1	10641291, or 10641293
10641391	Electrical Machines	3	10641291, or 10641292
10641392	Electrical Machines Lab	1	10641391
10651471	Control Systems I	3	10641291, 10621414
10651571	Control Systems Laboratory	1	10651471
11032101	English Language in work location	0	Finishing 107 credits

Electives (12)

A minimum of twelve (12) credit hours of engineering coursework are required.

Specialization of Applied Mechanics: Twelve (12) credit hours from the following list

Course #	Course Title	Credit Hours	Prerequisite
10621401	Internship (2)	3	10621400 in Parallel with Prog. approval.
10621430	Industrial Plants Layout and Management	3	10621332
10621512	Rotor Dynamics	3	10621414
10621513	Finite Elements	3	10621414, 10621301
10621514	Fracture Mechanics	3	10621317
10621530	Computer Aided Design And Manufacturing	3	10621332, 10621410
10621531	Dies and Tools Design	3	10621332, 10621410
10621532	Production and Manufacturing Processes (2)	3	10621332
10621533	Pressure Vessels Design	3	10621320, 10621410
10621534	Material Selection in Mechanical Design	3	10621410
10621553	Special Topics in Applied Mechanics	3	Programme Approval
10631451	Maintenance Management	3	10631211
10651481	Transducers and Interfacing	3	10621214, 10641391
10651682	Robotics	3	10621301 or 10651372, 10621310

Specialization of Thermal Power:

Twelve (12) credit hours from the following list

Course #	Course Title	Credit Hours	Prerequisite
10621401	Internship (2)	3	10621400 in Parallel with Programme approval
10621520	Heat Transfer (2)	3	10621420
10621523	Fluid Mechanics (2)	3	10621320
10621524	Internal Combustion Engines	3	10621329
10621525	Thermal Power Stations	3	10621329
10621545	Diagnosis and Maintenance of HVAC systems	3	10621440
10621546	Computer Aided Design for HVAC Systems	3	10621440
10621547	Advanced HVAC Systems	3	10621440
10621548	Energy Conversions	3	10621420
10621549	Refrigeration	3	10621420
10621554	Special Topics in Thermal Sciences	3	Programme approval
10621629	Heat Exchangers Design	3	10621420
10651483	Hydraulic and Pneumatic Systems	3	10621310, 10621320

Free courses (2)

The student chooses freely two courses, each of two credit hours, offered from faculties other than the Engineering Faculty.

Internship

The student can register internship upon the completion of 120 credit hours successfully and according to one of the following two options:

- For a period of eight successive weeks during summer semester, or for an equivalent period of training during the first or the second semester. In all cases the student should practice a minimum of 320 training hours. In this option the student should register Internship (1) (10621400) course.
- For a period of sixteen successive weeks; this option is to give opportunity to some students to take only Internship (1) (10621400) and Internship (2) (10621401) concurrently during a fall or spring semester with a total of 6 CH. Students are selected according to their achievements, and the availability of a proper training opportunity for a full semester. This option is conditional to program approval.

Course Description

10221201 Calculus III

Parametric equations and polar coordinates, vectors in R^2 and R^3 and surfaces, vector valued functions, partial differential with applications and multiple integration, vector calculus and its aspects.

10221202 Engineering Mathematics

The course consists mainly of two topics: Linear Algebra and ordinary differential equations. The part of linear algebra deals with matrix operations, linear equations and their solution, vector space and linear transformation, and eigen values and eigen vectors. The part of differential equations deals with partial differential equations, solution of 1st order, and 2nd linear and nonlinear ordinary differential equations. Fourier series and transform, and Laplace transform.

10221230 Statistics and Probability for Engineers

Set theory, relative frequency and probability; joint probability and independent events. Random variables, distribution functions, density functions, and Gaussian random variables. Multiple-random variables, joint-distribution functions, joint-density functions, conditional distribution functions, and central limit theorem. Random processes, stationary, and independence. Correlation functions, covariance, and Gaussian random processes. Random processes spectral characteristics, power density spectrum, cross-power spectrum, relation between correlation functions and power density spectra.

10601110 Statics

This course introduces the students to the fundamental concepts of vectors, equilibrium of force system for particles and rigid bodies. It also looks at the application of principles of statics to structures, axial force, shear and bending moments, friction, centroid and the moment of inertia.

10606102 Engineering Drawing

This course covers several topics including basic drawing techniques and materials used, orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

10621100 Engineering Workshop (1)

Development of basic skills in fields of manual sheet metal fabrication, welding processes, and household electric circuits. Students should perform in individual practical exercises.

10621200 Engineering Workshop (2)

Theoretical and practical development of basic skills in the fields of metal machining, sand casting, metal forming and welding. Students should perform in individual practical exercises.

10621214 Strength of Materials

Introduction to mechanics of deformable bodies; concepts of stress and strain, classification of materials behavior, stress-strain relations and generalized Hooke's law. Applications to engineering problems involving members under axial loads, torsion of circular rods and tubes, bending and shear stresses in beams/members, combined loading and stress transformation. Stress in thin- and thick-walled cylinders, curved beams, shrink and press fits, stresses in rotating disks, contact stresses. Failure theories under static loading.

10621210 Dynamics

Kinematics of particles, planer dynamic analysis of rigid bodies. Force and acceleration, work and energy, impulse and momentum. Introduction to vibrations.

10621213 Mechanical Drawing

Auxiliary views. Temporary fasteners and springs; their construction and standards. Power screws and welded symbols. Dimensioning, tolerance, limits and fits using ISO system. Detail and working drawing. Assembly drawing.

10621220 Thermodynamics (1)

Properties and behavior of a pure substance. First law and second law analysis applied to different system and control volumes, availability and irreversibility.

10621301 Software Applications in Mechanical Engineering

Introduction to MatLab programming language. Solve applied mechanical engineering problems using MatLab. Build and analyze 3D Dynamic models and accomplish stress analysis using SolidWorks and Visual Nastran 4D and/or any other equivalent design software.

10621310 Theory of Machines

Kinematic analysis of mechanisms. Velocity and acceleration polygons. Static and inertia force analysis of machinery. Dynamic analysis of cams, and flywheels. Balancing of machines.

10621317 Machine Design (1)

Deflection of beams, deflection of members using energy method, buckling of columns, Fatigue failure theories. Design of basic machine elements including: screws, fasteners, welded joints, mechanical springs, and rolling contact bearings.

10621320 Fluid Mechanics (1)

Introduction to fluid mechanics and units, properties of fluids, and fluid statics. Basics of fluid flow. Energy in steady flow, momentum and forces in fluid flow. Similitude and dimensional analysis. Steady incompressible flow in pressure conduits, and applications to fluid machinery. Introduction to fluid measurements.

10621328 Fluid Mechanics Laboratory

Laboratory applications to the related topics of the theoretical course of fluid mechanics (1).

10621329 Thermodynamics (2)

Vapor and air-standard power and refrigeration cycles. Thermodynamic relations, and Psychrometry. Ideal and real mixtures and solutions. Chemical reactions and combustion.

10621330 Engineering Materials

Atomic structure and bonding, structure of crystalline solids, and diffusion. Imperfections in solids. Dislocations and strengthening mechanisms, fracture of materials. Phase diagrams and alloy formation. Ferrous and nonferrous metals and alloys.

10621331 Properties and Strength of Materials Laboratory

Hardness, tensile, compression, impact, torsion, creep and fatigue tests. Macro-and micro-examination of metals. Experiments in casting, forming, machining, welding, heat treatment and plastic manufacturing.

10621332 Production and Manufacturing Processes (1)

Production of ferrous materials. Production of non-ferrous materials. Sand casting, powder metallurgy, rolling, forging, extrusion and drawing. Metal cutting.

10621400 Internship (1)

A practical training of continuous 8 weeks period in an engineering institute approved by the program. The student should register for the course upon finishing the fourth year of study, which is equivalent to successful completion of 128 credit hours of program's compulsory and electives requirements.

10621410 Machine Design (2)

This course concentrates on the design of certain machine elements such as: spur, helical, bevel and worm gears, belt-pulley system, cables, chain-sprocket system, brakes and clutches, rotating shafts, flywheels. With computer applications.

10621413 Applied Mathematics for Engineers

Series solutions of differential equations, special functions (Legendre, Frobenius, Bessel...). Fourier Series, integrals, and transforms. Partial differential equations.

10621414 Mechanical Vibrations

Properties of oscillatory motion. Derivation of governing differential equations. Free and forced vibrations. Harmonically excited motion, rotating and reciprocating unbalance, support motion. Vibration isolation. Transient vibrations. Free and forced vibrations in multi-degrees-of-freedom systems.

10626251 Engineering Numerical Analysis

The course aims to clarify the basic skills of numerical methods such as error calculations, solving linear and non-linear equations and their systems, numerical differentiation and integration, solving ordinary differential equations and their systems, curve fitting and interpolation. Students will be practiced on some special software related to numerical methods.

10621552 Graduation Project (2)

Practical implementation of theoretical and experimental knowledge gained from graduation project I. Formal and scientific written report of the work done in parts I and II, and presentation with public defense of the graduation project.

10621416 Vibrations and Mechanics of Machines Laboratory

Practical experiments related to the given topics in the courses of vibrations, theory of machines and machine design.

10621420 Heat Transfer (1)

One dimensional conduction; steady and transient analysis. Introduction to convection heat transfer. Forced convection heat transfer in external flows. Radiation heat transfer; radiation properties, and radiation heat exchange between ideal surfaces.

10621426 Thermal Sciences Laboratory

Laboratory experiments related to heat transfer, thermodynamics and thermal processes.

10621440 Heating and Air Conditioning

Criteria for thermal comfort, introduction to heating and air conditioning systems. Vapor compression systems. Psychrometry, heating and cooling loads calculations. Classification of air conditioning systems. Duct system design, and pipe system design. Air conditioning control systems. Standards, symbols, selection, and layout and installation of heating and air conditioning systems components. Students in individual or groups should perform short projects to practice the main principles of the course.

10621522 Operations Management

This course addresses the management of operations in manufacturing and service firms. Diverse activities, such as determining the size and type of production processes, planning and scheduling the flow of materials, and the nature and content of inventories as well as other related topics.

10621526 Turbo-Machinery

Theoretical analysis of energy transfer between fluid and rotor. Principles of axial-, mixed-, and radial-flow pumps and turbines. Pumps applications. Jet engines and compressors.

10621529 Mechanical Systems for Buildings

Introduction to buildings systems. Analysis, design, and selection of fluidic, thermal, electro-mechanical and electrical systems. Cold water, hot water, sewer and drainage systems analysis, standards, codes, specifications and networks, fire-fighting systems and alarms. Elevators and escalators, and accelerators systems standards, selection and specifications. Introduction to electrical power supply networks specifications, standards, and selection.

10621551 Graduation Project (1)

Literature review of the selected project topic and preparation of the work out line of the project's practical implementation.

10631301 Engineering Economy and Feasibility Studies

This course aims at giving engineering students a practical background about the basics of economic analysis and evaluation of cash flow diagrams, breakeven point and expenses reduction. The course also aims at teaching students the meaning of present value, future value of money. Finally, the course teaches the basics of feasibility studies for engineering projects.

10636111 Computer Programming

This course covers basic programming concepts including writing, executing, and debugging programs. It also looks at concepts of modularity and encapsulation, focusing on modules and abstract data types and covers some basic data structures.

10636410 Critical Thinking and Research Skills

This course addresses the theoretical and practical considerations of critical thinking and research. It studies the process of developing, supporting and evaluating beliefs and arguments through effective inductive and deductive reasoning and cognitive skills. The course also applies the reasoning process to conduct and evaluate scientific research. The Students are expected to present relevant research topics for the course, in oral and written forms, to gain practical experience both conducting research as well as defending their own arguments and opinions.

10641291 Electrical and Electronic Circuits

Introduction, Ohm's law, Kirchoffe's laws, and division rule. Nodal analysis, Mesh Analysis, Linearity and superposition, Thevenin's and Norton's theorems. Inductance and capacitance. AC circuits and three phase circuit analysis. Semiconductor materials. Diodes and Transistors circuits. Operational amplifiers with applications to proportional, integral and derivative. Introduction to digital logic, digital electronics. Number systems and Logic gates.

10641294 Electrical and Electronic Circuits Laboratory

Practical experiments related to the given topics in the course of Electrical and Electronic Circuits.

10641391 Electrical Machines

Review of magnetic fields and circuits. Single and three phase transformers. Electromechanical energy conversion. DC-machines: DC-generators and DC-motors. Starting DC-motors and speed control. AC-machines: Single and three phase induction motors. Three phase synchronous machines.

10641392 Electrical Machines Laboratory

Practical experiments related to the given topics in the course of Principles of Electrical Machines.

10651471 Control Systems (1)

Open and closed loops (feedback) control systems. Modeling of physical systems: electrical, Mechanical, hydraulic and pneumatic systems. Linearization of nonlinear systems. System representations: System block diagrams and signal flow graphs. State variable models. Feedback control system characteristics, analysis and design. Performance of feedback control systems. Routh-Hurwitz stability. Steady state error coefficient. Routh locus Method. Introduction to frequency response. Exercises on principles of automatic control systems using Matlab and Simulink software.

10651571 Control Systems Lab.

Open and closed loop control systems with applications to level and flow of fluids, and electrical, electromechanical, and thermal systems. Position and speed Control. Principles of controlling servomechanisms and stability tests. System performance under the action of proportional (P), integral (I), derivative (D) compensation controllers. Time and frequency response measurements. Computer simulation of control systems using MATLAB and SIMULINK software.

10621401 Internship (2)

The student can register for the course in parallel with Internship 0621400 course, after program permission. These two courses together are for practical

training of continuous four months period in a special engineering institute approved by the program.

10621430 Industrial Plants Layout and Management

Introduction to plant layout and management. Plant location, industrial buildings, types and classification of plant layout. Facilities design procedures. Systematic layout planning: Product-Quality (P-Q) input data, material flow, relationship charts, flow and/ or activity relationship diagrams, space determinations, space relationship diagrams, and selecting the layout. Factors influencing plant layout: Materials, machines and equipment, employee, movement, waiting, service, building and flexibility. Line balancing and assembly lines. Project management.

10621512 Rotor Dynamics

Characteristics of rotor element. Monorotors and multirotors. Symmetric and asymmetric rotors. Backward and forward whirl. Campbell diagram. Instability of rotating machines. Effects of internal and external damping and bearing and seals. Effects of rigid and elastic bearings. Balancing. Gyroscopic and aerodynamic effects. Industrial applications: Turbocharger, centrifugal compressor, steam turbine, Profanes.

10621513 Finite Elements Analysis

Introduction to finite element methods. Integral formulation and variation methods. Modeling principles and mesh specification of one dimensional problems: derivation of element equations, assembly of element equations, imposition of boundary conditions, solution of equations, and error analysis. Introduction to two dimensional problems. Computer simulation for solving engineering problems.

10621545 Diagnosis and Maintenance of HVAC Systems

A basic study of the installation, maintenance, service and repair of residential, commercial and industrial Refrigeration and Air Conditioning systems. Tools and instruments used in the HVAC industry.

10621534 Material Selection in Mechanical Design

This course covers the following topics: the design process, material property charts, material selection basics, material selection case studies, process and process selection, multiple constraints and objectives, selection of material and shape, designing hybrid materials, materials and the environment; case studies.

10621546 Advanced HVAC Systems

Under floor heating and cooling, heating and cooling using solar energy, variable air volume (VAV), variable refrigerant volume (flow) VRV/VRF, thermal systems, geothermal systems. Proper selection of HVAC systems. Project work.

10621514 Fracture Mechanics

Role of failure prevention in Mechanical design. Stress and deformation. Classical theories of failure. Notches and notch sensitivity. Fracture Mechanics: Rowan–Irwin relationship, Linear elastic fracture mechanics, Elastic stress field approach, Energy balance approach, J-Integral. Fatigue: Low cycle fatigue, High cycle fatigue, and remaining life. Creep and some mathematical models. Wear.

10621520 Heat Transfer (2)

Forced convection heat transfer in internal flows. Free convection heat transfer, heat exchangers, boiling and condensation. Radiation heat exchange between gray surfaces. Multi-mode heat transfer. Introduction to two-dimensional conduction steady-state heat transfer.

10621523 Fluid Mechanics (2)

Potential flow and boundary layer analysis. Flow separation. The use of computational techniques to solve boundary layer problems. Viscous internal channel flow. One-dimensional Compressible flow in nozzles and ducts. Normal shock waves and channel flow with friction or heat transfer.

10621524 Internal Combustion Engines

Air standard cycles, combustion processes in ICE. Compression ignition engines, spark ignition engines. Engine parts design, supercharging, engine tests and performance.

10621525 Thermal Power Stations

Over view of different types of power stations, its components, features and applications. Economic studies, load curves, station performance. Selection of station. Energy rates.

10621530 Computer Aided Design And Manufacturing

Principles of computer aided design and manufacturing. Computer aided design: Transformation and manipulation of objects, description of curves and surfaces, solid modeling, and optimization techniques. Implementation of finite element method techniques for analysis of trusses, heat conduction, and dynamics. Computer integrated manufacturing and implementation of a CAD/ CAM system.

10621531 Dies and Tools Design

Principle of tool design. Tool Materials, Heat treatment of Cutting tools. Design of single point Tools, Drills, Milling and form relieved milling cutters, Broaches and their heat treatment, thread cutting tools, tool grindings, presswork die design principles, design of press-working dies, drawing die design, forming die design principle, design of open die and closed die forging, materials of die block.

10621532 Production and Manufacturing Processes (2)

Special casting processes, sheet metal forming, press working and tooling, forming and shaping of plastics and composite materials. Forming and shaping of ceramics and glass, joining of materials. Specialized production and manufacturing processes.

10621533 Pressure Vessels Design

Structural design criteria, stress categories and stress limits, design of cylindrical shells, design of heads and covers, design of nozzles and openings, fatigue assessment of pressure vessels, bolted flange connections, Design of vessel supports, Inelastic methods in pressure vessel. Case studies, ASME Boiler and Pressure Vessel Code.

10621547 Computer Aided Design for HVAC Systems

Use computer applications for estimating heating and cooling load, duct sizing, pipe sizing, variable refrigerant flow system design, and drawing HVAC Systems. Selection of HVAC system components.

10621548 Energy Conversions

Energy growth and economics. Energy classification, sources and utilization. Principal fuels for energy conversion. Production of thermal energy. Fossil-fuel systems. Nuclear reactor design and operation. Environmental impact of power plant operation. Production of mechanical and electrical energy. Energy storage.

10621549 Refrigeration

Refrigeration systems and refrigerants. Multi-pressure and multi-temperature refrigeration systems. Absorption refrigeration systems. Design and operation of refrigeration equipment. Load calculation and design of cold storage rooms. Selection of refrigeration systems components. Students in individual or groups should perform short projects to practice the main principles of the course.

10621553 Special Topics in Applied Mechanics

Current trends and developments in the field of Applied Mechanics.

10621554 Special Topics in Thermal Sciences

Current trends and developments in the fields of thermal sciences.

10621629 Heat Exchangers Design

Review of heat transfer. Types of heat exchangers, definitions and quantitative relationships, analytical and numerical solution procedures. Thermal and hydraulic design of heat exchangers, Design and analysis of cooling towers and water heating solar collectors. Review of mechanical design, codes, and materials of construction, corrosion damage, testing and inspection, costing.

10631451 Maintenance Management

Maintenance organization, components of a maintenance plan, impact of maintenance on production, system operation and documentation, manual and computerized documentation systems, planned maintenance, FMEA methodology and related topics. The course also gives an overview about reliability engineering and its effects on production systems.

10651481 Transducers and Interfacing

Static, dynamic and statistical characteristics of measurement system elements. Loading effects in measurement systems. Sensing elements: Resistive, capacitive, inductive, electromagnetic, thermoelectric, elastic, piezoelectric and electrochemical sensing elements. Signal conditioning elements: Deflection bridges and amplifiers. Signal processing elements: Analogue to digital (A/D) conversion. Introduction to specialized measurement systems, optical and ultrasonic measurement systems.

10651483 Hydraulic and Pneumatic Systems

Introduction to fluid power systems design and operation. Characteristics of hydraulic fluids and standard tests. Characteristics and selection of positive and non-positive displacement pumps. Characteristics and standards of filters. Linear and rotary hydraulic Actuators. Characteristics and design of hydraulic and pneumatic distribution systems. Hydraulic and pneumatic control valves. Design, sizing and analysis of hydraulic and pneumatic circuits.

10651682 Robotics

Robot fundamentals. Robot kinematics: position analysis. Differential motions and velocities (Jacobian and inverse Jacobian). Dynamic analysis and forces. Trajectory planning. Actuators and Sensors of robotic systems.

Staff Members:

Name	Degree	University of graduate
Nidal Mohammad Farhat	Assistant Professor	Polytechnic University of Valencia, Spain, (July, 2006).
Mohammed Abu-Hilal	Full Professor	Technical University Berlin, First Institute for Mechanics, Berlin, Germany, 1993.
Ahmed al-Ramahi	Associate Professor	Eastern Mediterranean University, Turkey, 1997.
Bashir M.Y NOURI	Assistant Professor	Katholieke Universiteit Leuven (K. U. Leuven), Belgium, 2001
Iyad Assaf	Assistant Professor	The University of Manchester 2005. UK 2006
Osayd Abdul Fattah	Assistant Professor	Moscow State Technical University, Moscow, 1993
Mahmoud A. Assad	Lecturer	The University of Manchester - Manchester - United Kingdom, 2009.
Ramez Ibrahim Mohammad Abdallah	Lecturer	Jordan University of Science and Technology (J.U.S.T), Jordan, 2000.
Salameh Abdel-Fattah	Lecturer	University of Louisiana, Louisiana, 1992.
Ihab Hisham Hefzi Alsurakji	Teaching Assistant	An-Najah National University, Palestine, 2008 (on leave)
waleed Abuzaina	Teaching Assistant	Al-Balqa' Applied University, Jordan, 2011
Abed Moen Daghlis	Teaching Assistant	Palestine Polytechnic University, Hebron, 1998
Luqman Hirzallah	Teaching Assistant	An-Najah National University, Palestine, 2010
Monem Masri	Teaching Assistant	Dipolma, Palestine Polytechnic University, 2001

{ Telecommunication Engineering Department }

Vision

Gain national and regional recognition for providing high quality and diversified education to produce world class engineers who will be successful in their professional careers and/or graduate studies.

Mission

Provide students with a supportive environment that facilitates learning to solve telecommunication engineering problems. The Telecommunication Engineering program is committed to excellence in student learning. Graduates of this program will be problem solvers, able to apply engineering principles to telecommunication systems. The department staffers use their background in teaching, research, and industry to prepare students to be successful as they move into the workforce or graduate school.

Program objectives

A Telecommunication Engineering graduate is expected to:

- Prove competent in designing, analyzing, enhancing, and executing modern telecommunication systems.
- Highly compete in a fast-changing technology world and become leaders, businessmen and women, directors, innovators or teachers in a large context of Telecom. Engineering.
- Adapt with the different responsibilities in a multi-cultural work environment through respect of the diversity and professionalism in the workplace and the society on a national and international level.
- Successfully Continue with their graduate studies and become consultants in their field of major.

Program outcomes

- An ability to apply knowledge of advanced mathematics, science and engineering to telecommunication problems.
- An ability to design and conduct telecommunication engineering-based experiments, as well as to analyze and interpret data.
- Ability to design a system, component, or process to meet desired needs, within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Ability to function on multi-disciplinary teams.
- Ability to identify, formulate, and solve telecommunication engineering problems.
- Understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- Understand the impact of engineering solutions on a global, economic, environ-

mental, and societal context.

- Recognition of the need for, and an ability to engage in life-long learning.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills, and modern engineering tools necessary for telecommunication engineering practice.

Curriculum Plan

The Department of Telecommunication Engineering offers a single major in telecommunication engineering. Students wishing to obtain a B.Sc. degree in this field must successfully finish 161 credits. Of these, 18 are university requirements, 143 are department requirements, 129 are compulsory requirements, and 15 are basic science and math courses).

Admission Requirements

Fulfillment of the specialization conditions in the Faculty of Engineering, taking into account the capacity of the program.

Graduation Requirements

University requirements (18 credits)

Course #	Course title	Credits
11000101	Islamic Culture	3
11000105	Palestinian Studies	3
11000102	Arabic Language I	3
11000103	University English I	3
11000322	University English II	3
11000117	Leadership and Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computer Science	1
110032100	Remedial English	0

Department requirements (143 credits)

Math and science courses (32 credits)

Course #	Course title	Credits	Prerequisite
10211101	Calculus I	3	
10221101	General Physics I	3	
10211102	Calculus II	3	10211101
10221102	General Physics II	3	10221101
10221115	General Engineering Physics Lab	1	10221102 or concurrently
10211201	Calculus III	3	10211102
10211202	Engineering Mathematics	3	10211201
10646233	Random Variables and Probability	3	10221102
10231101	General Chemistry I	3	
10231107	General Chemistry I Lab	1	10231101 or concurrently
10626251	Engineering Numerical Analysis	3	10211202+10636111
10211302	Partial Differential Equations I	3	10211202 or 10211203

Core Telecommunication Engineering Department courses (97 credits)

Course #	Course title	Credits	Prerequisite
10636111	Computer Programming	3	
10606102	Engineering Drawing	2	
10621100	Engineering Workshop 1 theory	1	
10621101	Engineering Workshop 1 Practical	0	10621100 or concurrently 10621100
10641211	Electrical Circuits I	3	10221102
10641212	Electrical Circuits II	3	10641211
10641214	Electronic Circuits I	3	10641211
10641215	Electrical Circuits Lab	1	10641211
10641270	Electromagnetic I	3	10641211
10641313	Electronic Circuits II	3	10641214
10641314	Electronic Circuits Lab	1	10641214
10641315	Electrical Measurements and Sensors	3	10641212 Or concurrently
10641343	Control Systems	3	10641373
10641374	Electromagnetic II	3	10641270
10641441	Control Systems Lab	1	Co-10641343
10636221	Digital Circuit Design 1	3	
10636411	Advanced Programming	3	10636111
10636428	Microprocessors and Microcontrollers	3	10636221
10636498	Microprocessor and Microcontroller Lab	1	10636428
10641373	Systems and Signal Analysis	3	10641211
10646322	Communication Principles	3	10641373+ 110216230 or 10646233
10646328	Communication Lab	1	10646322
10646342	Digital Communications	3	10646322
10631301	Engineering Economic and Feasibility Studies	3	10211102
10631207	Introduction to Engineering Management	3	
10646404	Internship I	3	Department approval
10646430	Multimedia Communication	3	10646342
10646441	Digital Signal Processing	3	10646342
10646538	Mobile Communication Systems	3	10646342

Course #	Course title	Credits	Prerequisite
10646443	DSP Lab	1	10646441
10646444	Telecommunication Networks	3	10646342
10646451	Speech and Audio Processing	3	10646441
10646461	Information and Coding Theory	3	10646342
10646470	Antennas	3	10641374
10646529	Advanced Communication Lab.	1	10646470; 10646561
10646540	Telecommunication Networking Lab	1	10646444
10646561	Microwave	3	10641374
10646589	Graduation Project I	2	Department approval
10646590	Graduation Project II	3	10646589
11032101	English for the Workplace	3	11000325 or 11000322

Two free courses: 2 credits each (Department approval)

Department elective courses (12 credits)

Course #	Course title	Credits	Prerequisite
10646550	Advanced Telecommunications Networks	3	10646444
10646541	Satellite Communication	3	10646342
10646544	Selected Topics in Telecommunications	3	Department approval
10646552	Introduction to Image Processing	3	10646441
10646564	Filters	3	10646441
10646572	Telephony Systems	3	10646342
10646574	Artificial Intelligence in Communications	3	10646441
10641443	Digital Control Systems	3	10641343
10646581	Radar systems	3	10641374
10641413	Electronics of Communications	3	10641313
10646334	Modeling and Simulation of Telecom Eng. Systems	3	10646342
10646442	Fiber Optics Communication	3	10641374; 10646342
*10646555	Internship II	3	

* This course gives a few students an opportunity to sign up for Internship I and Internship II (six credits) during a fall or spring semester, before the semester of graduation.

Students are selected according to their achievements, number of credit hours they have completed, and the presence of a training opportunity for a full semester.

Course Descriptions

10221201 Calculus III

This course is a study of parametric equations and polar coordinates, vectors in R^2 and R^3 and surfaces, vector valued functions, partial differential equations with applications and multiple integration, vector calculus and its aspects.

10221302 Partial Differential Equations

Topics covered in this course include the formation of a partial differential equation, methods of solutions of first order linear and nonlinear partial differential equations, methods of solutions of second order linear and nonlinear partial differential equations, Fourier series and transforms, wave equation, Laplace's equation, potential equation, equation of an infinite wire and the heat equation.

10223101 General Chemistry I

In this course, students learn basic concepts in chemistry, the structure of atoms, chemical law calculations, chemical bonding, forms of compounds, general laws in aqueous solution chemistry, general laws of gases and other theoretical subjects.

10221202 Engineering Mathematics

In this course, students learn about the classification and solution of first order equations with application, higher order equations and solutions, and power series and solutions. They also learn the fundamentals of partial differential equations, and methods of solution of first and second order nonlinear partial differential equations.

10641211 Electrical Circuits I

Topics covered in this course include circuit variables and elements; simple resistive circuits, techniques of circuit analysis; inductance and capacitance; natural and step response of RL, RC, and RLC circuits; and sinusoidal steady state analysis.

10641212 Electrical Circuits II

This course introduces power calculations, three phase circuits, series and parallel resonance, Laplace transform in circuit analysis, two port network, Laplace transformation, and filters.

10641214 Electronic Circuits I

Students are taught about electronic materials, device and principles, P-N junction diode and applications, Zener diodes and other 2 terminal devices, Bipolar (NPN –PNP) & FET (junction, enhancement and depletion MOSFETs) transistors constructions and theory of operations. They also receive instruction on transistor biasing circuits and graphical (load line) analysis. He course ends with an introduction to Op-amp circuits and application, and small signal models for diodes and transistors.

10641215 Electrical Circuits Lab

This lab provides an introduction to lab instruments, Ohm's law, network theorem, voltage source, characteristics in AC, capacitors and inductors, RLC series and parallel, resonance, and three phase power systems.

10641270 Electromagnetic I

This course covers several topics: vector algebra; orthogonal coordinate systems, static electric fields produced by discrete and continuous charge distributions; Gauss's law; divergence and divergence theorem; electrostatic potential and potential difference; gradient and conservative fields; energy stored in electrostatic fields; current and current density; continuity of current; conductors and their properties; conductor-free space interface, method of images; dielectrics; dielectric-dielectric interface, dielectric-conductor interface; resistance and capacitance; one dimensional Laplace's and Poisson's equations, separation of variables; Biot-Suuart law; Amper's law; Curl and Stocke's theorem; magnetic flux and magnetic flux density; vector magnetic potential; magnetic materials; magnetostatic boundary conditions; inductance and mutual inductance; and Maxwell's equations for static and steady fields in differential and integral forms.

10641313 Electronic Circuits II

This course teaches students about large signals amplifiers designs and analysis, small signal models for BJT, and amplifier analysis under various configurations: CE, CC and CB, small signal analysis for FET amplifier analysis for CS, CD and CG configurations; multistage and composite amplifiers; current sources and current mirrors; differential amplifiers and their analysis; power amplifiers (classes A, B, AB and C) and power calculations; and advanced op-amp circuits.

10641314 Electronic Circuits Lab

This course is a study of types of diodes, rectifier diodes, the half-wave rectifier, the bridge rectifier; on-state and off-state characteristics of the Zener diode; testing the layering and rectifying of a bipolar transistor; characteristics of the transistor; depletion layer Fets, characteristics of the Fets; multistage amplifier; differential amplifier, push-pull output amplifier, operational amplifier, static behavior of operational amplifier, and the dynamic behavior of the OP-AMP.

10641315 Electrical Measurements and Sensors

Topics examined in this course include measurement and error, system of units and standards of measurements, electromechanical indicating instruments bridge measurements, Watthourmeters, oscilloscopes, sensors and transducers, data acquisitions systems; design and applications of various measuring which includes AVO - meters, wattmeter, oscilloscopes, chart recorders. The course ends with a look at types and application of sensors.

10641343 Control Systems

This course involves the study of Laplace transformation, system representation; frequency response, bode plots, polar plots; root-locus compensation; cascade and feedback compensation; frequency-response plots; state-space trajectories and state variable feedback into modern control, development of the solution-time criterion, and use of the Quadratic Performance Index. The course concludes with computer applications in control systems.

10641374 Electromagnetic II

Topics taught in this course include Faraday's law; displacement currents; Maxwell's equations for time-varying fields; constitutive properties; boundary conditions for time-varying fields; TEM waves on lossless TL; per unit length parameters of TL; telegraphists and wave equations with their solutions on TL; characteristic impedance of TL; propagation, phase, and attenuation constants of TL; frequency-domain analysis of lossless transmission lines; input impedance of TL; reflections and matching of TL's; power flow on TL's; Smith chart; and uniform plane waves in lossless media.

Other topics covered include power flow and the Poynting vector; the wave equation; uniform plane waves in lossy media; conductors and dielectrics; polarization of uniform plane waves; normal and oblique incidence of uniform plane wave on plane boundaries; perpendicular and parallel polarization; total reflection and total transmission; group velocity and dispersion; and an introduction to metallic wave guides.

10641441 Control Systems Lab

This is mainly a study of the fundamentals of controlling, characteristics and responses of first and second order systems; open and closed loop systems; different types of controllers, effect of controllers on different systems, basic principles of PLC, basic principles of pneumatic systems, and machine drive controlling using contractors and timers.

10626251 Engineering Numerical Analysis

Numerical analysis is concerned with finding numerical solutions to problems, especially those for which analytical solutions do not exist or are not readily obtainable. This course unit provides an introduction to the subject and treats the topics of solving nonlinear equations, both in one variable and in many

variables, solving linear systems of equations and of approximating functions by polynomials. These topics are of great practical importance to science, engineering and finance, for example, and also have intrinsic mathematical interest. The course unit concentrates on theoretical analysis and on the development of practical algorithms

10636111 Computer Programming

This course introduces students to basic programming concepts, with writing, executing and debugging programs, and concepts of modularity and encapsulation. The course also focuses on modules and abstract data types. The course ends with a look at basic data structures.

10636221 Digital Circuits Design I

Topics studied in this course include Boolean algebra, number systems, logic gates, simplification, combinational logic circuit design; combinational circuits, sequential circuits, flip-flops, counters, registers (serial, parallel, and shift), state machines design; and synchronous and asynchronous systems.

10636411 Advanced Programming

This course begins with an introduction to Java, object-oriented programming concepts (Java classes, overloading and overriding methods, polymorphism and inheritances, abstract classes, interfaces), and string class. It then moves on to Graphical User Interface (GUI), recursion concepts, single link list and double link list, stacks, queues and sorting and searching; and files.

10636428 Microprocessors and Microcontrollers

This course is an introduction to designing microcontroller-based embedded computer systems using assembly and C programs, an examination of real time operating systems and their impact on performance and its applications in telecommunication engineering and sensors.

10636498 Microprocessor and Microcontroller Lab

This course focuses on familiarizing students with digital and microcontroller equipment, logic 0 and 1, TTL and CMOS, combinational logic design, decoders and counters; programming the boot loader, writing a keypad driver, using ADC of the PIC and LCD display, writing a driver to write alphanumeric data and draw images.

10641373 Systems and Signal Analysis

This course is a study of continuous-time signals and systems, continuous-time linear time-invariant systems, impulse response, convolution, system properties, relation to differential equations, Fourier series, Fourier transform; applications involving the Fourier transform, sampling, discrete-time signals and systems, discrete-time linear time-invariant systems, Fourier analysis of discrete-time signals/systems, DTFT, Z-transforms, and state variables.

10646233 Random Variables and Probability

This course provides an introduction to probability and statistics for engineers, including probability, combinatorics, random variables, functions of random variables, moments, inequalities and limit theorems, statistics, regression and estimation theory, autocorrelation and cross correlation of analog and discrete data, hypothesis testing, system reliability, and computer usage in solving problems involving probability and statistics.

10646322 Communication Principles

This course begins with a general introduction to communication systems; representation of signals; bandwidth; amplitude modulation, ordinary AM, DSB-SC, SSB, VSB, frequency translation, phase modulation and frequency modulation; narrow band FM, wide band FM, And transmission of information. It then moves to noise sources and their effects in communications systems; filters and demodulation devices; frequency division multiplexing, sampling theorem and noise models.

10646328 Communication Lab

This course is a study of signal source, resonance circuits, AM, DSB-SC, SSB-SC, FM, different kinds of demodulation for AM and FM, sampling, kinds of framing, DM, sigma delta modulation, PCM and noise in digital systems, and digital modulation techniques.

10646334 Modeling and Simulation of Telecom Eng. Systems

Students are expected to learn modeling and simulation software packages in telecommunication engineering systems and applications.

10646342 Digital Communications

Students are introduced to digital pulse modulation, principles of PCM, DM, SDM, ADM, linear & non-linear quantization, quantization noise, linear prediction, different kinds of signaling, TDM, equalization; bit error rate, error probability analysis for coherent and non-coherent detection, different kinds of digital modulation techniques (PSK, FSK, ASK), power spectra of digital signals, matched filter, and ISI.

10646404 Internship I

Each student is expected to spend eight weeks of training at a recognized engineering company. After completion of training, he/she is required to submit a detailed report summarizing the practical work experience (office and field work).

10646430 Multimedia Communication

This course includes an introduction to multimedia, design concepts user interface design, presentation graphics design, 2D animation, using standardized interfaces for graphics software, file compression, video

production, multimedia coding standards, including JPEG/JPEG-2000, H.26x, MPEG, and scalable video coding (SVC). In addition, considerations for constructing a video codec system will also be discussed. In the area of multimedia networking, special considerations for sending multimedia over the Internet and wireless networks, such as video adaptation, error resilience, error concealment, and quality of service will be discussed.

10646441 Digital Signal Processing

Topics covered in this course include sampling review, aliasing, up sampling, down sampling; effects of quantization and finite-word-length arithmetic; review of the Z-transform; structures for discrete time systems; discrete Fourier transform (DFT); fast Fourier transform (FFT); design of digital filters: FIR and IIR recursive and non-recursive; design of analog filters; and an introduction to image processing.

10646442 Fiber Optics Communication

Students will study the properties of optical fibers which include refractive index, attenuation, chromatic dispersion, and laser and LED optical repeater design. Fiber optic networks also will be examined, as well as long haul communications systems, local distribution, LANs, and inter- and intra-building applications. Fiber optic systems management, including security, fault detection and repair issues, are discussed.

10646443 DSP Lab

This course includes the study of real-time DSP to understand the real-time DSP systems principles and real-world applications. It also includes sampling and waveform generation, quantization, PCM encoding, delta modulation, digital modulation schemes (ASK, PSK, FSK), error correcting codes; read write from CODEC; fast Fourier Transform, FIR filter implementation (Low Pass, High Pass Band Stop), IIR filter implementation linear convolution auto correlation, and power spectral density.

10646444 Telecommunication Networks

This course provides an introduction to telecommunication networks, both LAN and WLAN, with particular attention to OSI network layer. The emphasis will be on the basic performance and engineering tradeoffs in the design and implementation of OSI networks. Students will learn not only how they work today, but also why they are designed the way they are and how they are likely to evolve in the future. We will draw examples primarily from the Internet. Topics to be covered include LAN, data link control protocol networks, routing, addressing, naming, switching, internetworking, and multiplexing. The course also provides an introduction to WLAN physical layer.

10646451 Speech and Audio Processing

This course is a study of the human speech production mechanism, speech characteristics, speech coding families, time and frequency domain analysis techniques, discrete modeling of speech, speech synthesis, windowing; short-term prediction, long-term prediction, LPC, samples of mobile communication speech coding, RPE-LTP, CELP, LPC transformation, pitch period. The course ends with applications on speech processing, like speech recognition.

10646461 Information and Coding Theory

This course introduces students to entropy and information theory, types of data, source coding, LZ, Huffman, Shannon-Fano; channel coding, secrecy coding; channel capacity, error control coding, detection and correction methods.

10646470 Antennas

This course provides definitions of antenna parameters, antenna-equivalent circuits and antenna theorems, antenna mutual coupling, horn antennas, reflector and lens antennas, microstrip patch antennas and arrays, Waveguide slot antennas and arrays. It ends with an analysis of near field antenna measurements, and antenna diagnostics.

10646561 Microwaves

This course involves the study of electromagnetic wave and transmission line theory, the Smith Chart, impedance matching, TM and TE modes, wave guides and waveguide devices, S-parameters, Magic T, attenuators, microwave components, microwave measurements, microwave links and propagation models.

10646529 Advanced Communication Lab

This lab will include some advance experiments on topics like fiber optics, TV circuits, antenna and transmission lines; characteristics of the fibers (structure, method of propagation, numerical aperture, modal and chromatic dispersion, attenuation, bandwidth), optical sources and detectors, LED, Laser diodes, photo diodes, optical connectors and coupling system, transmission and reception with TDM, attenuation in optical fiber, SWR, and microwave networks.

10646538 Mobile Communication Systems

The course will be based around the following areas: mobility, services, applications and drivers for mobile communications; qualitative appreciation of radio communications concepts: modulation, transmission and demodulation, antennas and propagation loss, interference, multi-path-fading; effects on system performance; cellular radio principles; cell structure and

frequency re-use; architecture of the support infrastructure; localization and handover; radio access: FDMA, TDMA, CDMA, OFDMA; system aspects of current mobile systems: 2G (GSM), 2.5G (GPRS, EDGE) and 3G (UMTS, HSDPA), GERAN and UTRAN. The course ends with an introduction to Long Term Evolution (LTE).

10646550 Advanced Telecommunication Networks

The course presents the main aspects of wireless communication networks for mobile users, with particular attention to IEEE 802.11 Wi-Fi systems, ad hoc and sensor networks. In this context, the course will help students to understand the most suitable technologies to be used for the implementation of such networks at the physical, data link and network layer levels.

10646540 Telecommunication Networking Lab

This lab examines certain telecommunication networks like fixed telephony networks, cellular communication networks; wireless communication networks as Wi-Fi and Bluetooth. It also includes computer networks and data communication, including network services and applications.

10646541 Satellite Communication

The course begins with a review of the basic concepts of satellite communications. Then it will look at the orbital aspects, with an emphasis on the geostationary orbit. Frequency assignments and propagation aspects that affect the satellite link are then discussed. The design of a digital satellite link is discussed in detail, including link budgets, the satellite subsystem, and on-board processing. Antennas and earth station technology are presented, including the design of very small aperture terminals (VSATs). The course then covers non-geosynchronous orbits and their applications. Specific applications of satellites are also explored, including the global positioning system (GPS), satellites for mobile communication, and satellite for internet.

10646544 Selected topics in Telecommunications

This course raises new topics and emphasizes current trends in telecommunication engineering.

10646552 Introduction to Image Processing

This course provides an overview of computer imaging systems, human visual system, image model, image enhancement, gray scale modes, histogram mod, discrete transforms, Fourier discrete cosine, walsh-hadamard, Haar, PCT, filtering, wavelet transform, pseudocolor, image enhancement, sharpening, smoothing Image restoration, overview, system model, noise, noise removal, degradation model, inverse filter, frequency filters, geometric transforms, and image compression: system model, lossless methods, and lossy methods.

10646564 Filters

Students in this course will understand filter definition and applications, the specification and response of Butterworth, Chebyshev and elliptic filters, frequency transformation LP to LP, LP to HP, LP to BP, design analog filters using passive and active elements, digital filters, capacitor filters, develop digital IIR filter structure and realization using software and hardware.

10646572 Telephony Systems

This course surveys the development of public switch telephone networks, human voice characteristics and certain channel characteristics including twisted pair channels, DTMF signaling, central office switching, trunk circuits, Erlang capacity and blocking probabilities, multiplexing and private branch exchange. digital telephony, call switching, echo suppression, modems, T1 and E1 trunks, integrated services digital networks (ISDN), digital subscriber lines (xDSL) and VoIP switched networks; switching techniques; traffic theory; signaling and SS7 call control protocol, switching networks and digital switching techniques.

10646574 Artificial Intelligence in Communications

This course is an overview of the main thrusts in artificial intelligence, starting with the historically symbolic, logic-based approaches to knowledge representation, planning, reasoning and learning, leading into more recent directions of statistics-based probabilistic approaches (such as Bayesian approaches, belief nets, probabilistic reasoning, etc.). The course also touches on more recent developments in natural language processing, visual processing, robotics, machine learning, and philosophical foundations.

10641443 Digital Control Systems

This course is an introduction to digital control, discrete time systems and the z-transform, sampling and reconstruction, open-loop discrete-time systems, closed-loop discrete-Time systems, time response characteristics, stability. It also provides an analysis of discrete-time linear systems, digital controller design, and an introduction to state-space methods.

10646581 Radar Systems

Topics covered in this course include radar equation and definition of RCS, analysis of SNR, detection theory antennas as technology, range and range ambiguity, Doppler and velocity measurements; images from range-Doppler mapping, imaging with SLR and SAR, signal coding in imaging and ambiguity function.

10646589 Graduation Project I

The course provides an introduction to research methodology, ways of undertaking a literature review, the manner of writing technical reports and narrowing down a topic for the graduation project.

10646590 Graduation Project II

This course is mainly a study and analysis of a specific problem in a field determined jointly by the student and the supervisor.

10641413 Electronics of Communication

This course is an overview of communication devices, impedance matching and transformations, oscillators; types analysis and circuits, loop gain analysis, VCO, PLL, mixers and applications, conversion losses, tuned power amplifiers, AGC circuit, low noise amplifiers, phase locked loops; circuits and applications.

10646555 Internship II

This course is an extra training course, together with Internship I (0646404). This course allows some outstanding students to spend a full semester (either Fall or Spring) of training before the graduation semester. Students are selected according to their achievements, number of credit hours they have completed and the presence of a training opportunity.

10631301 Engineering Economic and Feasibility Studies

This course covers the fundamental tools and concepts of economical evaluation of business and engineering projects, such as cash flow diagrams, discounted cash flow, break even and minimum cost analysis, present value, future value, net present value, interest rates, decision making analysis and depreciation. The course also covers the fundamentals of feasibility studies such as terms of reference, details and problems of the current system, study methodology, possible solutions and recommendations, including a description of the costs and benefits to the enterprise.

10631207 Introduction to Engineering Management

This course covers several topics, such as human resources management, the engineering code of ethics, technical reporting, and management core topics (such as planning, organizing, leading, and controlling). It also covers essential topics in project management, financial management, and marketing management, which are essential for future engineering managers to lead in high impact technology-based projects. Serving to further broaden students' perspectives is a discussion of web-enabled engineering applications and globalization as well as the impact of emerging market forces on engineering enterprises and managerial functions in the new millennium.

Faculty members

Maher Khamash, Assistant professor, Moscow Institute of Energy, Technological University, Moscow, Russia, 1993.

Allam Musa, Associate Professor, East Mediterranean University, Northern Cyprus, 1996

Ahmed el-Masri, Assistant Professor, Polytechnique University de Torino, Torino, Italy, 2012.

Sa'ed Tarabey, Assistant Professor, Polytechnique University de Torino, Torino, Italy, 2011.

Falah Mohammed, Assistant Professor, Queens University, UK, 2004.

Naser Abu Zeid, Assistant Professor, Eastern University Mediterranean, Northern Cyprus, 2002.

Jamal Kharousheh, Lecturer, University of Jordan, Amman, Jordan, 1988.

Khadeje Mayale-Lecturer- Polytechnique de Torino /Italy.

Yousef Da'ameh, Lecturer, University of Bradford, Bradford, UK, 2012.

{ Urban Planning Engineering Department }

Vision

Looking to play a leading role in teaching, research and training in urban planning. Providing a distinguished level of education that matches the global level and is capable of excellence, competition and creativity.

Mission

To make every possible effort to prepare national cadres qualified and trained on the ground in various areas of urban planning and its developed techniques, able to develop plans and strategies related to the development of the physical and spatial environment, which contribute to achieving the objectives of development plans, meet the requirements of the labor market, and improve the living conditions of the population and the development of Palestinian society to become an affluent society.

General Goal

This program aims in general to develop students' knowledge and experience in the field of urban planning in order to be able to improve the quality of the physical environment.

Specific Objectives

1. Provide students with the foundations and principles that help to improve the spatial, economic and social environment.
2. Cover the need of the public sector (municipalities, ministries and concerned institutions) and the private sector (engineering offices and consulting firms) of specialists in the field of urban planning and development.
3. Provide students with techniques and skills related to planning in order to facilitate their practice.
4. Improve and strengthen the practice of urban planning and development in Palestine.
5. Meet the needs of neighboring Arab countries as well as Arab Gulf countries for planners, to follow accelerated urban developments, as well as the face of urban and environmental problems and challenges.

Admission Requirements

1. Minimum 80% in Tawjihi (Scientific track)
2. Passing the Skills Exam organized by the Department of Urban Planning Engineering (DUPE), and held only once at the beginning of each academic year. Students cannot re-sit for this exam more than once under any circumstances.
3. Students are admitted in accordance with their averages calculated on the basis of 50% for high school exams + 50% for skills exam). The DUPE, according to its needs and abilities, determines the number of students who would be admitted in coordination with the Deanship and the Board of the Faculty of Engineering.

6. Program Requirements

The Faculty of Engineering at An-Najah National University awards students a B.Sc. degree in Urban Planning Engineering after completion of a total of 160 credit hours.

Requirements	Credit Hours			Total
	Compulsory	Elective	Free	
University	18	-	-	18
Department	129	12	2	143
Total	147	12	2	161

I. University Requirements (18 credit hours)

Course No.	Course Title	Credit Hours	Prerequisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	-
11000322	University English II	3	11000103
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	1	-
11000108	Community Service	1	-
11000127	Introduction to Computer Science	1	-
Total		18	

2. Department Requirements (143 credit hours)

(a) Compulsory Courses (129 credit hours):

Course #	Course title	Credit	Prerequisite
10211101	Calculus I	3	
10211102	Calculus II	3	
10221101	General Physics I	3	
10216230	Statistics and Probability for Engineers	3	
10636111	Computer Programming	3	
10616115	Drawing and Visualization Techniques	3	
10616131	Design Principles	3	Admission to DUPE
10616132	Introduction to Environmental Design	2	Admission to DUPE
10616133	Urban Planning Principles	2	10616132
10801150	Principles of Economy	2	-
10616204	Demographic Aspects in Planning	2	10221230
10616205	Principles of Geographic Information Systems	3	-
10616210	Principles of Maps	3	-
10616220	Surveying for Planners	2	10221101, 10221102
10616221	Surveying for Planners Lab	1	10616220, 10616115 concurrently
10616222	Integrated Geospatial Technology	2	10616220
10616223	Integrated Geospatial Technology Lab	1	10616221
10616224	Urban Sociology	2	-
10616234	Environmental Design Studio I	3	10616131 10616133
10616235	Environmental Design Studio II	3	10616234
10616240	Site Planning	2	-
10616243	History and Theories of City Planning	3	10616133

Course #	Course title	Credit	Prerequisite
10616260	Basic Principles in Construction Engineering	2	10222101, 10222102
10616261	Characteristics of Materials and Soil	2	-
10616306	Applications of Geographic Information Systems in Planning	3	10616205
10616315	Urban Transportation Planning	3	-
10616316	Infrastructure Planning	3	10616261
10616320	Practical Training I	2	10616338 or DUPE's approval
10616332	Housing Planning	3	-
10801334	Urban Economics	3	10801150
10616337	Planning Studio I	3	10616235
10616338	Planning Studio II	3	10616337
10616361	Planning Systems, Laws and Legislation in Palestine	3	-
10616348	Land Use Planning	2	-
10616364	Urban Geography	2	-
10616365	Urban Morphology	2	-
10616420	Practical Training II	2	10616320 or DUPE 's approval
10616421	Planning Studio III	3	10616338
10616422	Planning Studio IV	3	10616421
10616423	Development and Strategic Planning	2	-
10616425	Urban Design	2	-
10616445	Urban Modeling and Spatial Interaction	2	10616333
10616447	Urban Management	2	-
10616450	Seismic Planning Response and Disaster Management	3	10616260
10616465	Sustainable Planning and Development	2	-
10616480	Computer Aided Planning	3	10616111
10616501	Projects Evaluation Methods	2	10221101
10616513	Planning Studio V	3	10616422
10616514	Graduation Project I	3	10616422
10616515	Graduation Project II	3	10616513 10616514
10616567	Professional Practices in Planning	3	10616422
11032101	English at the Workplace	3	11000325 11000322
Total		129	

(b) Elective Courses (12 credit hours): to be selected from the following courses:

Course #	Course title	Credit	Prerequisite
06164281	Rehabilitation and Urban Renewal	2	-
10616449	Integrated Planning for Transportation and Land Uses	2	10616315
10616463	Landscape Architecture	2	-
10616507	Geographic Information Systems Management in Planning Institutions	2	10616306
06165291	Planning of Special Areas	2	-
06165341	Statistical Applications in Planning	2	10616233
06165351	Environmental Planning	2	-
06165431	Modern Theories in Urban Planning	2	10616243
10616546	Rural Planning	2	-
06165471	Comparative Planning Studies	2	-
06165491	Planning of Public Transportation Systems	2	10616315
06165701	Regional Planning	2	
06165741	Energy Planning and Management	2	-
10616575	Urban Planning in Developing Countries	2	-
10616576	Tourism Planning	2	-
10616578	Islamic Cities Planning	2	-
10616579	Buildings Laws and Legislations	2	-
10616584	Local Administration Systems	2	-
10616585	Post-earthquake and Disaster Planning	2	10616450
10616586	Special Topics in Planning	2	-

(c) Free courses (2 credit hours):

The student chooses two credit hours course offered by other faculties.

Course Description

10636111 Computer Programming

This course begins with a review of the methods of analysis and logical thinking to solve various issues, allowing students to learn to find solutions using the flow diagram of the flowcharts and Zip Assistant (Pseudo code) and follow-up solutions to detect and correct logical errors. It then moves on to teach students about C++ language which includes input and output sentences, expressions, variables and constants, control sentences, redundancy and control, as well as matrices, functions and indicators. The course ends with an introduction to compositions, entities and structures.

10616115 Drawing and Visualization Techniques

This course trains students on the use of graphics and plans to express thinking, documenting and visualizing urban design and planning, using various means, as well as study drawing and visualization techniques, and the ability to read and understand the plans and planning projects, and related design and planning elements and terminology.

10616131 Principles of Design

In this course, students recognize the role and importance of design for urban planning, and learn the basic principles of urban design process through knowing the general concepts and ideas used in the design theories. They also learn how to express different ideas in the urban design process. Prerequisite approval of DUPE.

10616132 Introduction to Environmental Design

This course is an introduction to the definition of environmental design and philosophy, specialties (architecture, urban design, urban planning, and landscape architecture) and the relationship between them on one hand and between them and other disciplines like environmental science, geography and engineering sciences on the other hand. Prerequisite approval of DUPE.

10616133 Urban Planning Principles

This course aims to introduce students to the principles, foundations, concepts and objectives of planning in general and urban planning in particular. It is a study of the characteristics and components of the city, relationship of urban planning with the engineering fields such as architecture, urban design and landscape on the one hand, as well as its relationship with the human

sciences such as geography, economics, sociology, management, law and environmental sciences. Students will learn how to identify the three levels of planning (national, regional, local), definition of planning process in terms of goals, characteristics, and types of plans, methodology or stages of preparing the plans.

10801150 Principles of Economy

This course examines the basic concepts of macroeconomics, national income and methods of measurement, the balance of the national income and total consumption and the consumption function, total investment, investment spending and its impact on the national economy, as well as basic concepts of microeconomic and its functions and objectives, income and expenditure cycle, value theory and its evolution, consumer behavior theory, production theory, distribution theory, market competition and market monopoly.

10616204 Demographic Aspects in Planning

This course looks at the basic principles, methods and techniques of demography which are relevant to planners. Topics include the structure and distribution of population, the methods and techniques of population projection and an analysis of the causes, trends and impacts of different migration patterns both at the national and international levels.

10616205 Principles of Geographic Information Systems (GIS)

This course aims to acquaint students with geographic information systems in terms of components, characteristics, uses, capabilities and limitations. The course includes an overview of the history and development of geographic information systems, parts and requirements of geographic information systems, analysis of maps, satellite structures, representation and analysis of data, in addition to offering the latest developments in geographic information systems.

10616210 Principles of Maps

This course includes the study of measurement of lengths and distances; measurement of levels and altitude using the (Level), or leveling; using the (total station) to read distances and points; calculation of the coordinates and deviations, identifying trends and polygons, detailed maps and Cadastral Mapping; errors calculation and applying the Least Square method in correcting elevations coordinates and spaces.

10616220 Surveying for Planners

This course is an introduction to theory of errors, distance measurement, leveling, Theodolite and its applications, electronic distance measurement, coordinate geometry and traverse surveying. Prerequisites

10616220 Surveying for Planners Lab

Students in this course are supposed to apply in the field the principles taught in Surveying for Planners 10616220. In particular, the following topics will be covered: chain surveying, leveling, angle measurement and EDM (Distomat) applications (coordinate geometry).

10616222 Integrated Geospatial Technology

This course provides necessary foundation of skills in geographic information technologies, which are used for collection of urban data. Following an introduction, students start to learn basic techniques. Theory concepts follow each lab training segment. These are GPS, photogrammetry, Remote Sensing and LIDAR processing, and finally the course discusses how to integrate all these technologies using GIS.

10616223 Integrated Geospatial Technology Lab

This lab is practical applications of all topics covered in the Integrated Geospatial Technology course.

10616224 Urban Sociology

This course is a comparative study of urban societies and institutions. It looks at the origins and evolution of towns and cities, the relationship between industrialization and urbanization in the Third World, rural-urban migration, unemployment, the informal sector and squatter housing.

10221230 Statistics and probability for engineers

This course deals with the following topics: Set theory, relative frequency and probability; joint probability and independent events. Random variables, distribution functions, density functions, and Gaussian random variables. Multiple-random variables, joint-distribution functions, joint-density functions, conditional distribution functions, and central limit theorem. Random processes, stationary, and independence. Correlation functions, covariance, and Gaussian random processes. Random processes spectral characteristics, power density spectrum, cross-power spectrum, relation between correlation functions and power density spectra.

10616234,10616235 Environmental Design Studio I & Environmental Design Studio II

This course is a study of the development of design and planning skills through practical exercises on field surveys to gather preliminary information for planning land such as land uses, environmental features, movement, visual survey and buildings conditions, etc. Students practice reading aerial photos and remote sensing maps and knowledge of the presentation of information through plans, tables and graphs. The course is also a study of a residential neighborhood or district by collecting and analyzing primary and secondary data. The skills and techniques, learned by the student in Design Principles,

Introduction to Environmental Design and Urban Planning Principles, are applied. Students are expected to identify and display problems, objectives, analyzes, programs and alternatives using plans, pictures, graphics, tables and charts.

Prerequisite for Environmental Design Studio I 10616133; Prerequisite for Environmental Design Studio II is 10616234.

10616240 Site Planning

This course is a comprehensive study of the concept and context of site planning. It provides students with the basic principles and phases of site planning process including the analysis of physical and natural characteristics of sites, selection and distribution of activities, transportation systems and design elements applicable to site.

10616243 History and Theories of City Planning

In this course, students study the emergence and development of cities since pre-industrial era to the present time in terms of the factors that contributed to the evolution and development as well as planning trends and their impact on the urban planning of cities, in addition to reviewing a number of examples of the different cities in the world. The course also addresses evolution and development of city planning thought and content, and the factors affecting it, the concept of urban spaces, methods of visual analysis and understanding the character of space and its mental image, social and economic impacts on the structural and typical composition of the city.

10616260 Basic Principles in Construction Engineering

This course introduces students to the basics of engineering construction and types of facilities, loads, stability, reactions, and internal forces in the structures. It also includes the study of loads and types of building blocks and construction systems such as beams, frames and trusses. Then the course studies the stresses and forces and types of centralization and decentralization and the study of concrete sills and methods of analysis.

10616261 Characteristics of Materials and Soil

This course introduces students to the most important construction materials, and includes a description of the materials used in architectural structures and knowledge of their properties, cement, lime, asphalt, wood, steel, aluminum, building stones, cement and asphalt admixtures. The course also teaches students to analyze the basics of soil mechanics including soil classification, properties, real and effective stress, permeability, shear strength and endurance, integration and falling and the collapse of the dust in the slopes.

10616306 Applications of Geographic Information Systems (GIS) in Planning

How to collect data, conversion and processing through practical examples (database design, automation of information, spatial data analysis) as well as identifying the relevant computer programs. Uses and applications of GIS in urban planning at the level of land uses, housing, building permits, public health and environment, road network and transportation, public services and utilities and others.

10616315 Urban Transportation Planning

This course teaches students how to identify the concept and content of urban transportation planning, study the characteristics of mobility in urban areas, transport planning and decision making, supply and demand on transportation, collection and processing of information. It is also a study and analysis of topics related to uses of urban land as well as site selection of urban activities.

10616316 Infrastructure Planning

This course begins with a review of types, elements and systems of infrastructure facilities and their impact on planning including water, electricity, sewage and storm water drainage, telephone and solid waste. Then it moves to types of international and local standards and methods used in the planning, design, implementation and maintenance of public utilities and their role in the formation of urban program. Students also learn how to determine the required quantity and quality of services and facilities for the urban projects and compare the performance of these systems and the impact of demographic changes on the quality and degree of their efficiency.

10616320, 10616420 Practical Training I and Practical Training II

The student undertakes training two times; at the end of the third and fourth years for a period of two months each. In the first period, students are trained in a relevant ministry or municipality in urban planning and master plans, and learn how to prepare these plans and procedures for adoption and implementation. In the second period, they are trained in companies or engineering offices engaged in the fields of planning and design in order to identify the nature of their work and the bidding for projects, preparation and supervision as well as identify the procedures and tasks related to offices and companies in the context of the Engineers Syndicate.

The approval of the department on choice of training placement is required. Also, the student must submit a detailed report after each internship and the report has to be discussed by a department committee which has the mandate to extend the period of training if the report does not meet the requirements.

10616332 Housing Planning

This course introduces students to the basics of planning and design of housing and the problems related to the planning of housing projects and residential areas. It gives an idea about the local and global housing projects in terms of the basic foundations in their planning properly in line with the requirements of the environment and society.

10801334 Urban Economics

Topics covered in this course include economic theory, the purposes of urban planning, the evaluation and functions of urban planning in market economies, urban economics as a field of study, theories of urban spatial structure, urban economic structure, techniques of urban economic analysis, economic basis study of community, and economics of major urban problems, the meaning of development in different economic theories, unbalanced and balanced growth, dualism, economic “take-off”, income distribution, labor market, development planning and desegregation of national plans and regional growth theories.

10616337, 10616338 Planning Studio I and Planning Studio II

This course includes practice and practical application of concepts and the basics of planning. Students are taught to understand the holistic dimension of planning by studying the mutual relations with the surrounding environment and learn about the different aspects that affect the planning process, through study and preparation of a realistic master plan for a selected Palestinian community. The comprehensive field survey of land uses, buildings conditions, facilities and services, movement and visual survey, demographic and economic base and the possibilities and constraints in this community is undertaken. The course also highlights analysis of information for the preparation of general recommendations and development program. The course ends with a look at the preparation of planning alternatives proposed for the development and implementation phases.

Prerequisite for Planning Studio I 10616234; prerequisite for Planning Studio II 10616337.

10616348 Land Use Planning

This course addresses the role of land uses in urban planning, classification of land uses in terms of types, size ratios, distribution, and relationships; the structure of land uses and its relationship to movement systems; factors of change in land uses and the impact on economic, social and environmental aspects. It also highlights calculation of spatial requirements, population growth rates, distribution pattern of services and facilities, and related standards for land uses. The course also discusses the role of market forces and social and economic factor in determining the types of land uses.

10616361 Planning Systems, Laws & Legislation in Palestine

This course is a study and analysis of the transformation in planning laws and regulations, current planning issues and development proposals, development agencies and legislation in Palestine.

10616364 Urban Geography

This course is a study of concepts and the basics of geography and its relation to urban areas, systems and hierarchy of settlements, models of urban form and configuration, the type and density of different land uses in the urban space, the study of statistical methods used in the description and analysis of spatial distribution.

10616364 Urban Morphology

Topics covered in this course include concept, elements and theories of urban morphology; the emergence of urban design schools in the nineteenth century and the twentieth century in the context of the evolution of trends and theories of urban design, exploring the urban space from construction perspective. There is also in the course basic concentration on correlations between social, economic and experimental compositions of the urban environment.

10616421, 106163422 Planning Studio III and Planning Studio IV

This course focuses on study, planning and design of the center of a medium size city and the impact of internal and external determinants of the direction and development of this center. Students are taught how to identify problems, objectives, strategies and stages of development. They also learn about survey and analysis of land uses, movement, the commercial element, and urban controls and spatial structure. The course also focuses on the process of urban renewal in terms of economic, social and administrative aspects, analysis of the degree of influence of re-development in terms of interest, cost and quality of investment and the stages of planning and finance.

10616423 Development & Strategic Planning

This course introduces students to the fundamentals and concepts of development and strategic planning and gives an idea of local and global development and strategic plans in terms of the methodology of their preparation and relationship to urban and spatial planning.

10616425 Urban Design

This course consists of an analysis of urban form as a product of the social, economic and political forces and the aesthetic theories. It looks at contemporary international experience in urban design and adaptability of the developed criteria and methods to local needs.

10616445 Urban Modeling and Spatial Interaction

Students in this course receive instruction on how to identify the concepts and basics and how to build models, systems theory, the interrelationships between theory and model. The course is also a study and analysis of the theories and spatial interaction models. At the end of the course, there will be practical examples of applications of these theories and models in urban spatial environment.

10616447 Urban Management

This course covers several topics such as policies, stages and management of planning at the local and regional levels, and its structural organization, decision-making levels, and distribution of business and management of staff and the related office procedures. It also covers planning programs for the government sectors, and coordination at all levels as well as programming budgets. The course caps with the steps for setting up and implementing the development plans, planning, public relations and citizen participation in the planning process.

10616450 Seismic Planning Response & Disaster Management

This course is a study the fundamentals of seismic planning response, natural disasters, earth glides and land use planning. It includes conceptual bases, elements and structure of disaster management, the analyses of risks, ability of injury, preparation, expectation, warning, responding, behavior, and rehabilitation. The study will include seismic scenarios and disaster management plans. Practical examples and visual materials will be used.

10616465 Sustainable Planning and Development

This course is study of the concepts, policies and trends of sustainable planning and development. The course analyses nontraditional approaches to community planning and design and focuses on concepts and policies associated with the design of sustainable communities. It studies future alternatives for community planning and design in terms of sustainable development.

10616480 Computer Aided Planning

Students study computer techniques used in decision support related to design of sustainable cities through testing and evaluation of various alternatives and their impact on various aspects, the most important of which is “City Engine”.

10616501 Projects Evaluation Methods

This course introduces students to how undertake feasibility studies particularly in terms of market study and assessment of the demand for sales. This is in addition to analysis of materials and inputs and their characteristics; the

study of technical feasibility, manpower, costs, implementation schedule, and study the financing of projects (Project Finance) and the financial evaluation and economic analysis and profitability. The course also looks at the national profitability of the project or what is known as Benefit-Cost-Analysis and strategies for investment decisions, and standards of comparison between the projects under study, with practical case studies.

10616513 Planning Studio V

Students will prepare a model plan for a new city by examining the factors and policies of selecting the new city, comparing a number of sites and choosing the appropriate location for it. There will be also a survey and analysis of economic, social, geographical, topographical, geological, climatic, natural, and network communications; preparation of the development and planning program of the new city and the proposed comprehensive plan.

10616514 Graduation Project I

This course is a study of the preparation of theoretical background and program of graduation project through research, primary and secondary data collection and analysis, putting urban planning policies, strategies, objectives, and specifications through various tracks with the preparation of an integrated report on the project. Students' work will be linked with realistic and existing projects in one of the government agencies and private sector institutions.

10616515 Graduation Project II

Students create urban plans based on surveys, analyzes and conclusions that have worked in the course of graduation project. This includes the work of a planning report to reflect students' abilities to practice the profession in all its intellectual, analytical, and technical dimensions. The graduation project is supposed to focus on the study of problems and solving them in the Palestinian environment.

10616567 Professional Practices in Planning

This course discusses the nature of the performance of the profession and the role of the planner and the roles of others. It also addresses rules and laws of the practice of planning and levels of advisers and practitioners of planning, ethics and the types of contracts and implementation of plans. Laws, procedures, rules and the nature of practice of the planners in both government and private sectors are highlighted. The course includes field visits to private and government planning institutions, to make reviews of projects they have. The course concludes with how to create a planning office and prepare programs for implementation and practice stages.

10616428 Regeneration and Urban Renewal

The course covers a number of topics such as concept and importance of urban regeneration and urban renewal; types of renewal like removal and

rebuilding, renovation, preservation and rehabilitation; economic, historical, political, social, administrative and technical aspects in the redevelopment process; methods and stages of innovation applied in different countries, including the surveys, analyses and solutions and relationship with the size of projects, the role of government agencies, investors, property owners, municipalities, citizens and representatives of different interests in the process of urban regeneration and urban renewal.

10616449 Integrated Planning of Transportation and Land Use

Students in this class will learn how transportation investments can be consistent with the principles and practices of land use planning and development, and how land use decisions influence the transportation system. The class introduces the effects that the existing and future transportation systems may have on land use development demand, choices, and patterns. The class focuses on how the land use/transportation integration can increase viable options for people to access opportunities, goods, services, and other resources to improve the quality of their lives.

10616463 Landscape Architecture

This class is a study of the conceptual and theoretical bases of landscape architecture. Topics include the nature and use of natural and manmade landscape materials and elements to develop an understanding of the making of outdoor spaces and their sequential development through practical projects and examples.

10616507 Geographic Information Systems Management in Planning Institutions

This course explores a full range of critical aspects related to strategic, operational, and project management for GIS. This includes business planning, organizational frameworks, organizational policy and protocols, staffing requirements, project planning and prioritization, economics of GIS, ethical and legal issues, and impacts of GIS on society.

10616529 Planning of Special Areas

This course is a study of the principles, foundations and theories of planning areas of special character such as tourist areas, cultural centers, industrial areas, educational centers, medical centers, historic districts, with a focus on some special areas in Palestine such as the camps, the Jordan Valley, Jerusalem, metropolitan areas, etc.

10616534 Statistical Applications in Planning

This course teaches students how to identify the basic principles of statistics, the study of uses of statistics in planning, implementation and practice for a range of quantitative and statistical methods and tools in planning, use of information for description, prediction, comparison and analysis.

10616535 Environmental Planning

Topics taught in this course include basic concepts in environmental planning, environmental impact assessment and analysis, sources of environmental pollution and ways of controlling it. There is also a studying of the effects and impacts of urban and industrial development of putting standards for planners in order to control these effects.

10616543 Modern Theories in City Planning

This course is a study of recent developments in city planning theories in terms of the components and owners of these theories and ideas. It is also a study of the applications of these theories in the American and European cities and the cities of the Third World with a focus on the Arab cities.

10616546 Rural Planning

This course looks at the natural resources, inputs and services for agricultural development. Topics include the role of agriculture in economic development, the measures of economic growth and development, the determinants and policies of rural development and planning and the implementation of practical approaches to rural development.

10616547 Comparative Planning Studies

This course is an analysis of issues, policies and approaches to planning and implementing urban and regional development in various countries.

10616549 Planning of Public Transportation Systems

The class introduces planning and operational methods for urban public transportation. Students will learn about the history of public transportation, and the modern technological, and operating characteristics of transit vehicles and systems. They will learn also about the financing, management and institutional aspects of public transportation. The class will introduce par transit short-range planning, operational strategies, revenue-fare structures, service monitoring, mode choice and transit demand relating to service. The class will be supported by computer-aided methods for planning, designing, and managing transit systems.

10616570 Regional Planning

Students in this course are introduced to the region and its identification methods; the situation of the region in the administrative and spatial structure at the national level. Students also study the administrative and spatial units of the region and the economic, social and spatial relations. The course also provides an introduction to the process of economic growth and its impact on the growth differences between regions in terms of income, and urban development; the most important regional problems and manifestations. The course ends with a review of some planning and regional development theories and models and their applications in some developed and developing countries.

10616574 Energy Planning and Management

This course explores energy resource issues in urban planning. Topics include the strategies for incorporating energy efficiency into housing, land-use, transportation, social services and community development. It also consists of an analysis of energy policy, with emphasis on innovative public and private sector initiatives at the community level.

10616575 Urban Planning in Developing Countries

This course looks at the historical evolution of city system in the developing countries. This includes cultural and environmental factors effecting similarities and variations, a comparative analysis of urbanization and social change and a changing physical morphology of the major cities.

10616576 Tourism Planning

This course introduces a conceptual and theoretical framework of tourism and its significance as a tool for social and economic development. It includes an investigation of the policies, strategies related to the planning of tourism and provision of tourism activities and services at the national, regional and local levels, emphasizing the issues related to tourism management and organization.

10616578 Islamic Cities Planning

This course looks at the basic principles of Islamic town planning. This includes the evolution of Islamic cities, their architectural and spatial patterns, the general rules that affected their growth, the relationship between Islamic concepts of architecture and planning and the corresponding modern theories.

10616579 Building Laws and Legislation

In this course, students study laws and legislation related to urban planning, organization of buildings, rental of premises, occupancy of roads, advertising, commercial and industrial shops as well as laws to improve the environment such as sewage and hygiene, and others. Focus will be on the study of examples and experiences of the laws and legislation adopted in developed and developing countries.

10616584 Local Administration Systems

This course includes general principles of administrative organization in the administrative authority in terms of the definition of administrative centralization and decentralization, the concept of local administration and its basic philosophy and components. It also includes a study of some applications of local administration systems with focus on the local administrative system in Palestine.

10616585 Post-earthquake & Disaster Planning

This course is a study of the principles, procedures and practices of earthquake preparedness and disaster and rehabilitation within an integrated context to reduce risks, and improve the delivery of assistance to post-earthquake or disaster, and enhance the effectiveness of rehabilitation efforts.

10616586 Special Topics in Planning

This course is a study and analysis of various significant issues and topics in planning and urban development. This includes the stages of urban growth such as urbanization, suburbanization, desurbanization and reurbanization.

Staff members:

Dr. Ali AbdelHameed: Assistant Professor, Urban and Regional Planning-Middle East Technical University, Turkey, 1996.

Dr. Fidaa Yassin: Assistant Professor-University of Illinois Urbana Champaign, USA, 2010.

Dr. Emad Dawas: Assistant Professor-University of Washington, USA, 2011.

Dr. Ehab Hijazi: Assistant professor, University of Osnabrück, Germany, 2012.

{ Civil Engineering department }

Introduction

The foundation of the department of civil engineering was as early as the foundation of the faculty of engineering itself, with the beginning of the academic year of 1979-1978, as it is very important for the other aspects of engineering, therefore, it was developed in a short period of time.

Currently, the department grants a BA degree in civil engineering where the students are taught the basic foundations in the fields of civil engineering, which include: constructions, engineering of bases and soil mechanics, transportation system engineering, environment engineering, engineering administration, water engineering, and surveying.

The department also grants an MA degree in: construction, roads and transportation, water and environment.

To obtain a B.A in civil engineering, students must finish 160 credit hours in an estimated studying period of 5 years, in the last year of which, students conduct a graduation project where they apply the basic scientific data of one of the fields of civil engineering.

The department also has several laboratories which contribute in strengthening the foundations of engineering for the students, and the relationship with local community as they provide tests and counseling related to civil engineering. The labs. Currently available are: soil mechanics lab. , roads Lab., traffic engineering Lab., construction materials Lab., fluids mechanics and hydraulics lab, material resistance lab., computer lab. and surveying Lab.

The Department also provides a an academic staff of PhD and MA holders who cover all the primary and the secondary fields of civil engineering. At the same time, new staff is being prepared to cover the requirements of the department.

Vision

The Department of Civil Engineering seeks to achieve excellence in teaching, learning, research and community services, and to provide local and regional markets with qualified graduates in various civil engineering fields.

Mission

- Achieve regional leadership in civil engineering education.
- Prepare students scientifically and practically and train them for competent and professional engineering practice.
- Prepare students to address various civil engineering problems based on solid technical foundations.
- Provide opportunities for scientific research and practical applications in civil engineering for the advancement and development of Palestinian society.
- Assure quality and foster systematic pursuit of improvement in education in order to graduate engineers with abilities and skills to analyze and interpret data, design and conduct experiments; and to apply knowledge to solve civil engineering problems in global, economic, societal, and environmental contexts, considering social, political, ethical, health, safety, and sustainability aspects, within a life-long learning framework.

2. Program Objectives and Outcomes

Civil Engineering Program educational Objectives:

- To enable students to have the capacity and the skills that would make them succeed in their future careers within the framework of continuing education.
- To allow students to possess a high degree of professionalism, innovation, communication and creativity in solving civil engineering problems.
- To enable students to demonstrate professional ethics, and be aware of the environmental and societal issues related to the profession of engineering.

Civil Engineering Educational Program Outcomes:

- An ability to apply knowledge of mathematics, science, and engineering to various civil engineering fields - including surveying, civil engineering materials, geotechnical engineering, structures, highways and transportation, water and environment, and civil engineering management.
- An ability to design and conduct civil engineering experiments, as well as to analyze and interpret related data.
- An ability to design structural, highway and transportation, water and environmental systems and components, or civil engineering operations and management processes to meet desired needs.

- An ability to function in multi-disciplinary teams.
- Ability to identify, formulate, and solve civil engineering problems.
- An understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- A deep understanding of the impact of civil engineering solution in a global context
- Recognition of the need for and an ability to engage in life-long learning.
- Knowledge of up-to-date and contemporary issues in civil engineering.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Admission Requirements

To be admitted to the Civil Engineering Program, the students will compete for admission based on their cumulative average in the General Secondary School Education Certificate (Tawjihi).

Program Requirements (160 credits)

	Credit Hours			
	Compulsory	Elective	Free	Total
University Requirements	18			18
Department Requirements	129	12	2	143
Total	147	12	2	161

University Requirements (18 credits)

Course #	Course title	Credits	Prerequisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	-
11000322	University English II	3	11000103
11000105	Palestinian Studies	3	-
11000117	Leadership and Communication Skills	1	-
11000108	Community Service	1	-
11000127	Introduction to Computer Science	1	-
Total		18	

Department Requirements (129credits)

a. Compulsory courses (117 credits)

Course #	Course Title	Credits	Prerequisite
10221101	Calculus I	3	
10221102	Calculus II	3	10221101
10222101	General Physics I	3	
10222102	General Physics II	3	10222101
10222115	Physics Lab for Engineering	1	10222102
10223101	General Chemistry I	3	
10223107	General Chemistry I Lab	1	10223101
10221201	Calculus III	3	10221102
10221202	Engineering Mathematics	3	10221201
10221230	Statistics and Probability for Engineers	3	
10626251	Engineering Numerical Analysis	3	10221201
10222110	Physical Geology	3	10222101
10601100	Introduction to Civil Engineering and Engineering Ethics	1	
10601110	Static	3	10221101,10222101
10601201	Mechanics of Materials	3	10221102,10601110
10601202	Mechanics of Materials Lab	1	10601201
10601340	Fluid Mechanics	3	10621210
10601342	Hydraulics	3	10601340
10601343	Fluid Mechanics and Hydraulics Lab	1	10601342
10601440	Hydrology	3	10601342
10601350	Environmental Engineering I	3	10231107 10601341
10601450	Environmental Engineering II	3	10601350
10601451	Environmental Engineering Lab	1	10601450
10601310	Structural Analysis I	3	10601201
10601311	Structural Analysis II	3	10601310,10601210,10626251
10601390	Design of Reinforced Concrete Structures I	3	10601310
10601490	Design of Reinforced Concrete Structures II	3	10601390,10601311
10601420	Steel Structures	3	10601311,10601390
10601205	Construction Materials	3	10221101
10601206	Construction Materials Lab	1	10601205
10601301	Building Construction	2	10606102 10601205
10601302	Building Construction Lab	1	10601301
10601220	Surveying I	2	10211230
10601221	Surveying I Lab	1	10601220
10601320	Surveying II	2	10601220,10601221
10601321	Surveying II Lab	1	10601320
10601330	Soil Mechanics	3	10222110,10601201
10601331	Soil Mechanics Lab	1	10601330
10601360	Transportation Systems I	3	10601330,10601320
10601361	Transportation Systems I Lab	1	10601360
10601460	Transportation Systems II	2	10601360
10601461	Transportation Systems II Lab	1	10601460
10601470	Engineering Economics	2	10221201
10601300	Principles of Scientific Research and Technical Writing	2	11000322

Course #	Course Title	Credits	Prerequisite
10601430	Foundation Engineering	3	10601330
10601472	Engineering Management	3	10601301 10601470
10601400	Practical Training	3	
10601471	Specifications and Quantities Estimating	3	10601301 10601470
10601598	Graduation Project I	3	10601300
10601599	Graduation Project II	3	10601598

b. Compulsory courses from other departments (09 credits)

Course No.	Course Title	Credits	Prerequisite
11032101	English at the Workplace	3	
10606102	Engineering Drawings	2	
10636111	Computer Programming	3	
10621100	Engineering Workshops I (Theory)	1	
10621101	Engineering Workshops I (Practice)	0	
Total		9	

Elective courses (12 credits)

Course #	Course Title	Credits	Prerequisite
10601312	Structural Analysis III	3	10601311
10601510	Conceptual Design	3	10601390
10601511	Advanced Steel Design	3	10601420
10601512	Design of Reinforced Concrete Structures III	3	10601490
10601513	Pre-stressed Concrete	3	10601420
10601514	Plastic Design	3	10601420
10601515	Stone Masonry	3	10601301, 10601205
10601516	Computer Application in Structures	3	10601311
10601517	Special Topics in Structures	3	10601311
10601518	Structural Dynamics and Seismic Engineering	3	10601311
10601519	Structural Failure Analysis	3	
10601520	Adjustments of Survey Measurements	3	10601320
10601521	Advanced Topics in Survey	3	10601320
10601521	Geographic Information System	3	10601320
10601530	Advanced Soil Mechanics I	3	10601330
10601531	Advanced Soil Mechanics II	3	10601330
10601532	Advanced Foundation I	3	10601430
10601533	Advanced Foundation II	3	10601430
10601534	Computer Application in Geotechnical Engineering	3	10601430
10601535	Advanced Practical Applications in Soil Mechanics	3	10601330
10601540	Ground Water	3	10601440
10601541	Systems and Operations in Hydrology	3	10601440
10601542	Water-Plant-Soil System	3	10601440
10601543	Drainage Systems	3	
10601544	Advanced Hydraulics	3	10601341
10601545	Water Resources Management	3	10601440
10601550	Environmental Systems Engineering	3	10601350
10601551	Air Pollution Control Engineering	3	10601350

Course #	Course Title	Credits	Prerequisite
10601552	Solid Waste Management	3	10601350
10601553	Modeling of Environmental Systems	3	10601450
10601554	Water and Wastewater Technology	3	10601450
10601555	Environmental Impact Assessment	3	10601450
10601556	Green Buildings and Infrastructure	3	10601450
10601557	Computer Applications in Water and Environmental Engineering	3	10601450
10601558	GIS in Water and Environmental Engineering	3	10601450
10601560	Traffic System Management	3	10601460
10601561	Advanced Pavement Design	3	10601360
10601562	Transportation Planning	3	10601460
10601563	Special Topics -Traffic Engineering	3	10601460
10601574	Advanced Traffic Engineering	3	10601460
10601565	Advanced Highway Design	3	10601360
10601570	Project Management and Control	3	10601472
10601571	Productivity Improvement and Quality Control	3	10601472
10601572	Site Management and Safety Factors	3	10601472
10601573	Advanced Construction Project Management	3	10601472
10601500	Professional Practices	3	10601400
10601580	Advanced Topics in Civil Engineering	3	
10601581	Civil Engineering Systems	3	
10601582	Special Topics in Civil Engineering	3	
10601583	Advanced Topics in Civil Engineering Materials	3	

Free Courses: 2 Credit Hours

Course Descriptions

10601100 Introduction to Civil Engineering and Engineering Ethics:

A survey of the history of engineering and its evolution and relationship with other disciplines in engineering and science; fields of work; engineering design: types, divisions, requirements, important relations mainly with planning and management; engineering ethics; regulations of the profession; and principles of solving engineering problems.

10222110 Physical Geology:

This course studies various types of geological sciences and their relationship to other sciences. Topics covered include cosmology, crystallography, mineralogy, petrology and soil and rock engineering behaviour.

10601110 Statics:

This course introduces the students to the fundamental concepts of vectors and the equilibrium of force system for particles and rigid bodies. It also looks at the application of the principles of statics to structures, axial force, shear and bending moments, friction, the centroid, and moment of inertia.

10601205 Construction Materials:

This course is a study of the properties and behavior of building materials used in civil engineering, such as cement, concrete, metals, plastic, and wood. Students will also learn about the standard specifications and testing methods associated with production and quality control methods, as well as workplace safety procedures.

10601206 Construction Materials Lab:

This lab allows students to do various experiments related to construction materials.

10601201 Mechanics of Materials:

Topics covered in this course are: fundamental principles and theories of stress and strain and their interrelationship; mechanical properties of materials; pressure; the influence of temperature; shear and bending forces and stresses; flexural and compound stresses; maximum and minimum strains, deflection of beams; and the stability of columns.

10601202 Mechanics of Materials Lab:

This lab includes laboratory applications and experiments on the topics covered in the Mechanics of Materials course.

10601210 Dynamics:

Introduction to kinematics of particle and rigid bodies, kinetics of rigid force and acceleration, work and energy, impulse and momentum, free and forced, damped and undamped vibrations for ramp, uniform and sinusoidal loads. Introduction to ground acceleration and response spectrum curves.

10601470 Engineering Economics:

Topics covered include principles and ways used by the engineer to justify the economic decisions concerning long and short-term planning, development of skills in preparing cash-flow as well as present and future value calculations. The students are introduced to different ways used in evaluating projects and their economic feasibility using present value, future value, annual payments, and rate of return profit to choose most feasible project and computer applications and basic concepts management.

10601220 Surveying I:

This course is an introduction to surveying and covers theory of errors, distance measurement, leveling, the theodolite and its applications, electronic distance measurement, coordinate geometry and traverse surveying, areas and volumes.

10601221 Surveying I Lab:

There will be field exercises to cover all of the subjects of Surveying I 61222

10601300 Principles of Scientific Research and Technical Writing:

Students are introduced to the fundamentals of scientific research, types of research, experimentation, simulation, statistical analysis, creative thinking, presentation skills, technical report writing, and theses.

10601301 Building Constructions:

The subjects taught in this course include the types of construction; site preparation; safety at the construction site; the elements of a building and their types, such as foundation, columns, beams, roof, etc.; the materials used in the construction process, such as concrete, blocks, steel, stones, etc.; and the finishing elements such as plastering, painting, tiling, electrical and mechanical work, elevators, etc. Overall, this course aims to develop the student's abilities to construct a building from beginning to end.

10601302 Building Construction Lab:

This lab includes practical drawing applications of various exercises related to building construction, using AutoCAD programme.

10601310 Structural Analysis I:

This course is an analysis of statically-determinate beams, trusses, compound and simple, cables and arches and rigid frames. It also includes a study of

deflection computation using different methods, and a study of influence lines for determinate elements. It ends with an introduction of how indeterminate structures are solved using the matrix method.

10601311 Structural Analysis II:

This course focuses on the analysis of statically-indeterminate structures and frames using the matrix method and the moment distribution method. There will also be an introduction on the dynamics analysis of structures, as well as computer applications.

10601320 Surveying II:

Building on Surveying I, this course addresses route surveying and horizontal control surveys. It also provides an introduction to photogrammetry, Global Positioning Systems (GPS) measurements, and an introduction to Geographic Information Systems (GIS).

10601321 Surveying II Lab:

There will be field exercises to cover all the subjects of Surveying II.

10601330 Soil Mechanics:

Students will learn the fundamental principles of soil behavior, including physical and mechanical properties, as well as its classification, identification, and soil-testing. Students will also be introduced to the principles of permeability and seepage as well as the theory and applications of consolidation. The course ends with a look at shear strength applications on soil and soil bearing for building foundations and other purposes.

10601331 Soil Mechanics Lab:

This lab covers various practical experiments on soil mechanics principles.

10601340 Fluid Mechanics:

This course is a study of fluids under conditions of rest and motion, fluid properties, fluid statics, kinematics, systems, control volumes, conservation principles, ideal incompressible flow, impulse-momentum principles, real fluid flow, and similitude dimensional analysis. It concludes with a study of steady state flow in pipes and uniform flow in channels.

10601341 Hydraulics:

In this course, students learn about applications of pipe flow and open channels and hydraulic machines (pumps and turbines). The course also provides introduction to the design requirements of water systems, including water supply, storm water drainage, wastewater collection, and hydraulic structures. It ends with an introduction to software used for water systems design.

10601342 Fluid Mechanics and Hydraulics Lab:

Topics covered in this course include principles of fluid mechanics and hydraulics through laboratory experiments. Experiments cover fluid properties, hydrostatics and pressure measurement, velocity and flow measurement, orifices, Venturi meters, and weirs, in addition to flow in open channels and pumps.

10601350 Environmental Engineering I:

This course is an introduction to environmental engineering. It begins with a chemistry review; equilibrium and kinetics; mass balance for conservative materials, and steady state mass balance for reactive materials and reactor models. It then moves to population prediction and water demand; conventional water treatment; coagulation and flocculation; softening; sedimentation; filtration; and disinfection; water storage and distribution; and reservoirs, pipes, pumps, and valves. It concludes with a study of design and analysis of water distribution networks using software packages.

10601360 Transportation Systems Engineering I:

This course focuses on basic design aspects of highway geometrical design, which includes roadway elements, route selection, vertical and horizontal alignment, and cross-sectional elements. It also addresses basic principles of highway structural design, sub grade material, and construction materials for roadways, asphalt mix design, and design of flexible and rigid pavement structures.

10601361 Transportation Systems Engineering I Laboratory:

This course introduces students to the application of route location and design of highways principles through design project. It also studies subgrade and granular material tests for highway construction; highway bituminous materials general properties and gradation testing; asphalt mix design and binder recovery testing; and highway deformation and friction testing. It also touches on quality control tests for highway construction.

10601390 Design of Reinforced Concrete Structures I:

Students are introduced to the bending force and bridges design: singly and doubled bridges reinforcement, designing reinforced concrete bridges, bridges resistant to shear force and bending force; steel connections design and calculation of the length of the columns connections; calculation of one-way solid slabs; designing structural elements that are central to forces of pressure.

10601400 Practical Training

This is an 8-week practical training course of at least 320 practical hours. This engineering practical training should be performed in a creditable engineering establishment.

10601490 Design of Reinforced Concrete Structures II

Students are introduced to analysis and design of continuous reinforced concrete beams using ACI moment and shear coefficients, design of slender columns subjected to axial load and bending, analysis and design of building frames, design of two-way solid slabs, analysis and design of torsion and shear, serviceability requirements, cracking control, short and long term deflection analysis for simple and continuous beams, and design for RC frames for seismic forces.

10601420 Steel Structures

This course provides students with a background about specifications, requirements, and behavioral principles and design of structural steel tension, compression, and flexural members. The course also introduces the types of connections: riveted, bolted, and welded. The course finally provides structural detailing for trusses, beams, and columns and frame elastic designs. It also includes some computer applications.

10601430 Foundation Engineering

This course begins with review of soil mechanics and introduction to subsurface exploration. Then it covers bearing capacity of shallow foundation, stress distribution and foundation settlement. Then it moves to lateral earth pressure and retaining structures. This course ends with an introduction to the pile foundation system. It includes computer applications.

10601440 Hydrology

Students are introduced to hydrological cycle, processes, and systems; meteorological parameters and concepts related to hydrology; precipitation, evaporation and transpiration, infiltration and stream flow; stream flow hydrographs and modeling. Students are also introduced to rainfall-runoff analysis; probability in hydrology, and groundwater hydrology.

10601450 Environmental Engineering II

This course covers wastewater generation and collection by sewers, and the design of sewer networks using software. It also provides an introduction to wastewater microbiology and microbial kinetics and wastewater composition characteristics. Students also learn about the design of conventional wastewater treatment plants, ponds, aerated lagoons, activated sludge and trickling filters. The course ends with a look at sludge handling and water reuse.

10601451 Environmental Engineering Lab

This lab covers basic chemistry and chemical calculations related to environmental engineering. Students learn about lab methods and interpretation of results. They are expected to do essential environmental lab experiments of main water and wastewater quality parameters, such as pH,

alkalinity, conductivity, turbidity, BOD, COD, and biological microorganisms. The course ends with a demonstration and determination of efficiency of coagulation and flocculation, sedimentation, filtration, and activated sludge systems, and water and wastewater purification.

10601460 Transportation Systems Engineering II

Topics studied in this course include principles of traffic operations, which include characteristics of the elements of the transportation systems, traffic engineering studies, principles of traffic flow, and intersection control (including principles of signal design, capacity and level of service for freeways/multi-lane highways and signalized intersections). The course ends with a look at the fundamentals of the transportation planning process and the principles of travel demand forecasting.

10601461 Transportation Systems Engineering II Laboratory

This lab introduces students to various traffic engineering studies: data collection, tabulation, and analysis, including using the appropriate software for data collection, manipulation, and analysis. The lab includes an application project.

10601471 Contracts, Specifications, and Quantities Estimating

This course introduces the basic principles of calculating the costs of civil engineering projects and the ways of estimating the costs of contractor, subcontractors, owners, and design engineers. The course also looks at types and ways of estimating costs, types of contracts and their conditions, construction project costs, quantity takeoffs, pricing, claims, change orders, types of drawings and various components of the project. It concludes with a look at technical specifications, their types, and methods of their writing, in addition to risk management and losses during execution.

10601472 Construction Projects Management

Topics covered in this course include basic principles of project management, project analysis and planning, programming, organizing, and controlling during construction stage. The course also covers the different ways for project programming, such as the critical path method. In addition, it looks at ways of distributing and controlling costs, safety and quality control during. This course explains how to allocate the resources and level them for the project. It also shows how to draw cash flow and how to crash the duration. This is in addition to an explanation of costs, safety, and quality control during implementation. Finally, some computer programs will be applied (Ms Project, PRIMAVERA, etc.).

10601598 Graduation Project I

10601599 Graduation Project II

In these two courses, which are completed in two consecutive semesters, each student is expected to select a civil engineering problem in consultation with his/her supervisor and the approval of the department head. The work produced should reflect the high standard of academic strength, expressive ability and professional orientation at the final stage of the student's preparation. The project prepared by the student should be defended in front of a special committee.

10601312 Structural Analysis III

This course focuses on the analysis of statically indeterminate structures (trusses, beams, grids, frames, plates and shells) using the finite element method. It also provides an introduction to dynamics and stability of structures. It also includes computer applications.

10601510 Conceptual Design

This course highlights the importance of conceptual design; conceptual design requirements; loads calculations including wind and seismic; and the design of several structural elements. Students are also introduced to two- and three-dimensional design of structures and invention methods in structures.

10601511 Advanced Steel Design

This course elaborates on some special requirements for the design of steel structures. Topics include the design of plate-girders and built-up sections, and the design of steel-concrete composite members, in addition to an introduction to the design of high-rise and multi-story steel buildings, with a focus on moment- and shear-resisting systems (including the design of moment-connections and bracing systems for gravity and lateral loads). Also, the course will offer an introduction to the design of steel structures against fire hazards.

10601512 Design of Reinforced Concrete Structures III

This course is an analysis of thin shell structures using the theory of shells. It teaches students how water tanks and domes are designed, in addition to footing and retaining wall design. The course includes computer applications.

10601513 Pre-stressed Concrete

Topics covered in this course include several design methods for pre-stressed concrete; stresses calculations; stress losses in pre-stressed concrete; deflection in pre-stressed concrete elements; design to resist shear loads; dimensions of pre-stressed concrete structural elements and fixing joints.

10601514 Plastic Design

This course covers plastic behavior in structures; the theory of ultimate analysis and finite design; ultimate loads for structural elements; loads causing

frames failure; slab analysis based on plastic methods; and elastic conditions for resisting seismic loads.

10601515 Stone Masonry

This course focuses on stone specifications, blocks and concrete units, design of stone walls, and stone building rehabilitation. The course includes applications and lab tests on stone.

10601516 Computer Application in Structures

This course is a series of several computer applications in civil engineering, including finite elements, structural dynamics, stability theory, and bridge engineering.

10601517 Special Topics in Structures

Selected topics in areas of structural engineering and design will be thoroughly studied and analyzed.

10601518 Structural Dynamics and Seismic Engineering

The course makes a thorough presentation of the fundamentals of dynamic equilibrium of structures. This applies to discrete and continuous systems. The response of structures to free and forced vibrations, pulses and earthquakes for both damped and undamped structures is presented in detail. Dynamic analysis of buildings follows; this includes normal modal analysis, numerical integration, and the response spectrum method. Design of structures to resist dynamic loads based on seismic building codes and using commercially available computer software is also studied.

10601519 Failure Analysis

This course covers structural behavior, the definition of failure, and the main sources of failure (including locations of failure, methods of preventing failure, causes of failure and remedy methods).

10601520 Adjustments of Survey Measurements

This course highlights surveying errors, the propagation of variances and covariances, weights, and least squares adjustment (method of observation equations and method of condition equations).

10601521 Advanced Topics in Surveying

This course will cover advanced topics in surveying outside of the topics covered in ordinary courses.

10601522 Geographic Information Systems (GIS)

This course is an introduction to GIS, data models and structures, georeferencing and coordinate systems, data collection and data entry, spatial analyses, visualization, and choosing a GIS.

106015530 Advanced Soil Mechanics I

This course will cover advanced topics in soil mechanics regarding soil improvements, site investigation, and land sliding and slope stability.

10601531 Advanced Soil Mechanics I

This course will cover advanced topics in the physical and chemical properties of soil, the theory of consolidation, and advanced topics in shear strength of cohesive and cohesion-less soils.

10601532 Advanced Foundation I

This course covers advanced topics in foundation engineering, such as pile foundation, sheet piles, braced excavation systems, and building on difficult soils.

10601533 Advanced Foundation II

This course covers advanced topics in geotechnical earthquake engineering and rock mechanics.

10601534 Computer Application in Geotechnical Engineering

This course is a series of computer geotechnical applications using special geotechnical software.

10601535 Advanced Lab in Soil Mechanics

This course offers lab experiments that will be done by the students individually on cohesive, cohesion-less soils, and rocks.

10601540 Ground Water

This course covers several topics: the importance of groundwater, the distribution of subsurface water, aquifer types, soil texture, general soil parameters, general aquifer parameters, and springs. It also covers the concept of hydraulic head; Darcy's law; the determination of the hydraulic conductivity; storage in confined and unconfined aquifers; heterogeneity and anisotropy; the general equation of groundwater flow; groundwater flow directions and flow nets; steady state flow in confined and unconfined aquifers; groundwater modeling; and components of pumping wells and well hydraulics. The course also touches on general concepts of salt-water intrusion, groundwater contamination, and soil water in the vadose zone, groundwater recharge, and groundwater management.

10601541 Systems and Operations in Hydrology

Topics covered in this course include hydrologic systems and processes for surface water; analysis of metrological data; hydrology of urban, rural, forests, and arid areas; hydraulic models for flood routing calculations; model for surface flow; statistical models for analysis of hydrologic data; and computer applications.

10601542 Water-Plant-Soil System

This course begins with the relationship between water, soil, and plant. Then it moves to plants' water requirements, irrigation scheduling, water transport and distribution, irrigation schemes, wastewater reuse in agriculture, and the impacts of irrigation on the environment.

10601543 Drainage Systems

This course is a review of pipe networks and open channel hydraulics, drainage structures, and storm water management. Applications include urban drainage, rural, and agriculture drainage. The course includes software application.

10601544 Advanced Hydraulic

This course includes further applications in pipe and open channel flow and hydraulic structures, unsteady flow in pipes, water hammer, hydraulics of sediment transport, spillway and design of small dams.

10601545 Water Resources Management

This course covers several topics: the importance of management; elements of water resources; components of water resources management; spatial and temporal scales of water resources management; concepts and methods of optimization (including linear programming and integer programming, with an emphasis on graphical, analytical, and computer solutions); the optimal design of water distribution networks; groundwater management and the use of lumped parameter models; surface water management (including reservoir operation); artificial recharge; multi-criteria decision analysis; and genetic algorithms. It ends with a look at the impact of climate change on groundwater and unconventional water resources.

10601550 Environmental Systems Engineering

This course begins with a review of environmental systems, reactor models and mass balance. Then it moves to the study of steady and unsteady state solutions of mass balance equations, water pollution sources, quantification and control, air quality, pollution and control, soil, soil quality, solid waste management, noise pollution, water and environmental quality standards, and conservation and management.

10601551 Air Pollution Control Engineering

This course is an introduction to air quality and air pollution, air pollutants emissions and sources, and the impact of air pollution and greenhouse gases on health and climate change. It is also a study of meteorology and air-pollution dispersion models, in-combustion air pollution control, post-combustion air pollution control, industrial air pollution control, control of particulate matter, control of VOCs, SO_x and NO_x, absorption and

absorption of air pollutants, GHG emission control, and indoor air quality engineering. The course ends with a look at recent advances on related topics.

10601552 Solid Waste Management

This course is an overview of the roles and functions of solid waste services and an appreciation of the legislation relevant to the collection and disposal of wastes and curbside recycling; understanding the sources of wastes their nature and classification; understanding the options available for the minimization, recovery, re-use, treatment, and disposal of wastes; understanding the practical aspects of curbside recycling schemes; understanding the various types of collection systems and the different types of vehicles and transport systems; understanding how alternating collection systems may be employed for the collection of refuse and recycling; appreciation of the special needs of dealing with health care wastes; appreciation of the processes involved in inviting, tendering, and awarding contracts; and understanding the process of effectively monitoring and managing contracts in wastes collection and curbside recycling schemes.

10601553 Modeling of Environmental Systems

Water quality regulations, fate and transport processes, water-quality models for rivers, lakes, wetlands, oceans, ground water, and watersheds are discussed, in addition to air quality models.

10601554 Water and Wastewater Technology

This course is designed for persons wishing to work in water utilities, environmental engineering consultancies, process contractors, equipment manufacturers, industrial water users, environmental agencies, and suppliers serving the international water and environment sectors. The course covers the technology and process design used to prevent pollution and to provide pure water for drinking and industrial use. New technologies, engineering, and management techniques will be presented.

10601555 Environmental Impact Assessment

Students in this course conduct objective evaluation and formal description of a real natural system or geographic region; prepare a unified document summarizing physical, biological and social aspects of a study area; and make reviews of pertinent laws and EIS documents.

10601556 Green Buildings and Infrastructure

Topics covered include goals and regulations for green buildings siting and structure design efficiency; and green solutions and technologies for water, energy, waste, and indoor air.

10601557 Computer Applications in Water and Environmental Engineering

This course includes a series of applications of commercially available software

programs in analysis and design of water and environmental systems; and it includes main software programs for water distribution networks, sewerage, and storm drainage.

10601558 GIS in Water and Environmental Engineering

This course introduces GIS technology commonly applied to environmental engineering problems. By the end of the course, the student should be able to effectively solve problems of spatial nature and convey GIS-based analysis to decision makers. The course utilizes Arc GIS software. The course covers concepts related to general attribute relationships, analyzing spatial relationships, feature geometry manipulation, using Model-Builder, Network Analyst, Spatial Analyst, and 3-D Analyst. Several case studies from environmental and sanitary engineering disciplines will be discussed and furnished to provide insight into realistic applications of GIS.

10601560 Traffic System Management

Students in this course are introduced to the management of the various types of traffic systems, including CBD streets and junctions, arterials and freeways; the management of residential area streets; public transportation management; restraint measures and parking management; measures to improve safety and environmental quality; and traffic administration. The course also includes an application of transportation systems management concepts in the urban areas in Palestine.

10601561 Advanced Pavement Design

Students in this course receive advanced knowledge and practical training in the analysis and design of highway and airport pavements, and on principles of theoretical and practical approaches of design. Various methods of design are introduced for both flexible and rigid pavements. Stresses in both types of pavements are studied and analyzed. The course ends with an introduction to the principles of pavement management, pavement evaluation, maintenance, and rehabilitation.

10601562 Transportation Planning

Topics covered in this course cover the transportation planning process, transportation studies, data collection and management, transportation modeling, land use and transportation planning, demand analysis, network and supply analysis, and forecasting travel demand. The course concludes with a look at impact assessment and evaluation.

10601563 Special Topics - Traffic Engineering

This course raises advanced topics of interest to students related to traffic engineering and its computer applications.

10601564 Advanced Traffic Engineering

This course begins with an introduction to emerging issues and trends in traffic engineering. Then it moves to traffic flow characteristics, gap acceptance and queuing theory, signalized intersection design and capacity analysis, highway capacity and level of service, signalized corridor analysis and traffic safety.

10601565 Advanced Highway Design

This course is a study of geometric design of highways as related to operation, capacity, and safety; alignment, drainage, and roadways features. It also touches on the use of computer software for preparing highway design drawings.

10601570 Project Management and Control

This course introduces the characteristics and concepts of the construction industry; the facility delivery process; labor productivity; construction costs; scheduling; cost accounting; emerging technologies relevant to the construction industry; project organizations; the design and construction process; labor, material, and equipment utilization; cost estimation; construction pricing and contracting; construction planning; cost control and monitoring accounting; and management systems construction.

10601571 Productivity Improvement and Quality Control

Topics covered in this course include the different management theories, how to improve productivity and its effects on project cost, how to prepare a schedule, how to control quality for the construction projects, and risk management.

10601572 Site Management and Safety Factors

Topics covered in this course include the principles of project management; on-site safety factors during the construction phase; the effects of accidents on the time, cost and quality of the project; and the material used and their risks.

10601573 Advanced Construction Project Management

The course provides a survey-level treatment of many aspects of the construction project management process. It also provides an overview of the process and the foundation for advanced study at the graduate level, to enable students to have a working awareness and some knowledge of several construction management issues. The primary goal of this course is to familiarize students with the construction industry, activities that take place throughout a construction project, and responsibilities involved in successfully managing construction. Specific topics will include the difference between “cm” and “CM,” a description of the construction management process, description of project controls, and a description of how to “keep score” of a construction project’s success or failure.

10601580 Advanced Topics in Civil Engineering

This course raises advanced topics in civil engineering that provide a detailed study of courses covered in fourth and fifth years of the undergraduate program.

10601581 Civil Engineering Systems

This course will introduce the students to the engineering approach for planning, design, implementation and operation of civil engineering systems. Other topics that are covered in this course are failure analysis of civil engineering systems, reliability and sustainability of civil engineering systems, professional practices and documentation of civil engineering systems.

10601582 Special Topics in Civil Engineering

Selected topics in civil engineering will be thoroughly studied and analyzed.

10601585 Advanced Topics in Civil Engineering Materials

This course addresses physical and chemical aspects of constitution and fundamental properties of materials; cements and concrete mixes; asphalts and asphaltic concrete; and laboratory investigations, sampling and testing.

10601500 Professional Practices

This is an 8-week practical training course of at least 320 practical hours. This engineering practical training should be performed in a creditable engineering establishment. This includes administrative and field work, where the student is involved in most of the works and activities of the establishment, such as: attending meetings, data analysis, engineering reports, in addition to involving the student in the engineering designs, calculating the costs and quantities, and preparing bidding documents for engineering projects.

Staff Members:

Name	Degree	University of graduate
Marwan N. Haddad	Professor	Environmental Engineering, University of Syracuse, USA, 1986
Sameer A. Abu Aisheh	Professor	Pennsylvania State University, USA, 1987
Nabil M. Dmaid	Associate Professors	Dundee University, England, 1995
Khaled Al-Sahili	Associate Professors	Michigan State University, USA, 1995
Anan F. Jayoussi	Associate Professors	Utah State University, USA 1995
Najeh S. Tamim	Associate Professors	Ohio State University, USA, 1992
Dr. Hafez Q. Shaheen	Associate Professors	Water Engineering, University of Braunschweig, Germany, 1991
Dr. Numan Mezyed	Associate Professors	Colorado State University, USA, 1990
Dr. Riyad A. Awad	Associate Professors	Pennsylvania State University, USA, 1989
Isam G. Jardaneh	Associate Professors	Utah State University, USA, 1994
Mohammad N. Al-Masri	Associate Professors	Utah State University, USA
Abdel Fattah Hasan	Assistant Professors	University of Miami, USA, 2009
Ameen H. Helou	Assistant Professors	North Carolina State University, USA, 1981
Abdulrazzaq Touqan	Assistant Professors	Stanford University, USA, 1989
Mohammad Azzam Ghazal	Assistant Professors	Pennsylvania State University, USA, 1992
Shaker S. Bitar	Assistant Professors	University of Manchester, England, 1996
Wael Abu Asab	Assistant Professors	Kassel University, Germany, 1993
Munther Diab	Assistant Professors	Eastern Mediterranean University, Turkey, 1998
Wael Haj Yasin	Assistant Professors	Nagoya University, Japan, 2010
Mahmoud Dwaikat	Assistant Professors	Michigan State University, USA, 2013
Abdulhaleem Khader	Assistant Professors	University of Utah, USA, 2012
Imad Al-Qasem	Lecturers	Jordan University of Science and Technology Jordan, 2009
Ibrahim Arman	Lecturers	Najah National University, Palestine, 2004
Mohammad Abu Nimeh	Lecturers	KFUPM, Saudi Arabia, 2012

{ Department of Computer Engineering }

The Vision:

The vision of the computer engineering department is to produce high-quality graduates who possess solid theoretical and practical foundation, through emphasizing scholastic excellence, practical skills, and professional competency to produce the leaders in the computing field. We strive to achieve our vision while expanding the scientific knowledge through research and contributing positively to the community.

The Mission:

The mission of the Computer Engineering Program is to:

- Equip its graduates with the theoretical and practical skills needed to assume leadership positions in industry, government, and academia.
- Promoting active learning, critical thinking, and engineering judgment, coupled with the ability to apply knowledge for solving engineering problems in the global, economic, societal, and environmental contexts.
- Enhance the scientific, mathematical, and technical knowledge of the graduates and train them to acquire the ability to analyze, synthesize, and design core parts of modern computing systems.
- Expand the knowledge in computer engineering through research in many fields to advance the state of the art and perform community services.
- Assure quality and foster systematic pursuit of improvement in education, while considering social, political, ethical, health, safety, and sustainability aspects, within a life-long learning framework.

The Educational Objectives:

The Department of Computer Engineering recognizes that our graduates will choose a variety of career paths in the emerging global economy. Whatever path they select, we have the following objectives for our graduates:

- They will be able competent enough to efficiently design, analyze, and enhance modern computer systems.
- They will be able to pursue successful careers and leadership roles in the Computer Engineering field both in the software and hardware disciplines or any other related areas, whether in an entrepreneurial, professional or academic setting.
- They will be able to demonstrate professional attitude, effective communication & team-working skills in addition to strong sense of ethical and social responsibility on the global and local scales.
- They will demonstrate an ability to engage in life-long learning and continual self-development through graduate studies or professional training.

Program Outcomes for undergraduate students in Computer Engineering:

- An ability to apply knowledge of mathematics (integral & differential, linear algebra, statistical and discrete), science (especially physical), and engineering.
- An ability to design and conduct experiments in the field of computer engineering as well as analyze and interpret data.
- An ability to analyze and design complex hardware to meet desired needs within realistic economic, environmental, social, political, ethical and health constraints assuring safety, sustainability, and manufacturing capacity.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve computer engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- A broad education necessary to understand impact of software and hardware engineering systems and solutions in a global, economic, environmental, and societal context.
- Recognition of the need for and ability to engage in lifelong learning especially in the area of computer engineering.
- Knowledge of contemporary issues in the computer engineering field.
- An ability to use the techniques, skills, and modern computer engineering tools necessary for hardware/ software engineering practice.

Admission Requirements:

To be admitted to the Computer Engineering program, the students will compete for the admission based on their cumulative average in the General Secondary Education Certificate (Tawjihi).

Graduation Requirements for the B.Sc. Degree in Computer Engineering:

To earn the B.Sc. degree in Computer Engineering, the student must successfully complete 161 credit hours as follows:

University Requirements	18 Credit Hours
Department Requirements	143 Credit Hours
Total	161Credit Hours

Curriculum:

University Requirements (18 credits)

Course No.	Course Title	Credits
11000101	Islamic Culture	3
11000102	Arabic Language	3
11000103	English Language 1	3
11000322	English Language 2	3
11000105	Palestinian Studies	3
11000117	Communication Skills	1
11000108	Community Service	1
11000127	Introduction to Computers	1
Total		18

Department Requirements (143 credits)

Mandatory Courses (123 credits)

Course No.	Course Title	Credit	Pre-requisite
10221101	Calculus 1	3	
10221102	Calculus 2	3	
10222101	Physics 1	3	
10222102	Physics 2	3	
10222115	General Eng. Physics lab	1	
10221201	Calculus 3	3	10221102
10221202	Engineering Mathematics	3	10221201
10221230	Statistics and Probabilities for Engineers	3	
10223101	General Chemistry	3	
10223107	General Chemistry Lab 1	1	
10606102	Engineering drawing	2	
10641211	Electrical Circuits 1	3	10222102
10641214	Electronic Circuits 1	3	10641211
10641215	Electrical Circuits lab	1	10641211
10641313	Electronic Circuits 2	3	10641214
10641314	Electronic Circuits lab	1	10641214
10641373	Systems & Signal Analysis	3	10641211
10626251	Engineering Numerical Analysis	3	10636111 , 10221202
10636111	Computer Programming	3	
10636211	Data Structure and algorithms	3	10636111
10636212	Object Oriented Programming	3	10636211
10636215	Discrete Mathematics	3	
10636221	Digital Circuits Design I	3	
10636291	Digital Circuits Design I Lab	1	10636221
10636304	*Internship	3	Department approval
10636312	Software Engineering	3	10636212
10636315	Database Systems	3	10636211
10636316	Web programming	3	10636212
10636318	Digital Image Processing	3	10636211
10636321	Digital Circuit Design II	3	10636221
10636322	Microprocessors	3	10636221
10636323	Computer Architecture I	3	10636322
10636332	Digital Electronic Circuits	3	10636321
10636351	Data and Computer Communication	3	10641373
10636391	Digital Circuit Design II Lab	1	10636321
10636392	Microprocessors lab	1	10636322
10636410	Critical Thinking and Research Skills	3	
10636423	Computer Architecture II	3	10636323
10636426	Microcontrollers	3	10636321
10636451	Operating Systems	3	10636323
10636454	Computer Networks I	3	10636351
10636455	Computer Networks II	3	10636454
10636475	IT Business Management	3	10636312
10636493	Computer Design Lab	1	10636323
10636496	Microcontrollers Lab	1	10636426
10636581	Graduation Project I	3	----

Course No.	Course Title	Credit	Pre-requisite
10636582	Graduation Project II	3	-----
10636594	Networks Lab	1	10636454
11032101	English for the Workplace	3	
Total		126	

*The Internship duration is 320 working hours (approximately eight weeks). It must take place after finishing the fourth year (the student should have finished 120 credits). This course amounts to 3 credits.

Elective Courses (15 credits)

Course No.	Course Title	Credit	Pre-requisite
10636305	**Internship II	3	Department approval
10636314	Algorithms and Computational Complexity	3	10636211
10636415	Advanced Database Systems	3	10636315
10636416	Compiler Construction	3	
10636417	Artificial Intelligence and Machine Learning	3	
10636418	Computer Graphics	3	
10636419	Neural Networks and Fuzzy Systems	3	
10636422	Advanced Microprocessors	3	10636322
10636456	Distributed Operating Systems	3	10636451
10636464	Special Topics I	3	
10636511	Information and Network Security	3	10636454
10636521	Computer Components and Interfacing	3	
10636523	Parallel Processing	3	10636323
10636525	Real-time Systems	3	
10636526	Fault Tolerant Computing	3	
10636528	Digital Control	3	
10636554	Special Topics in networks	3	10636454
10636563	Multimedia Applications	3	
10636564	Special Topics II	3	
10636568	VLSI	3	

** This course gives the opportunity for some students to undertake their internship for a duration of a full fall or spring semester by registering the internship I and internship II courses at the same time (i.e. it amounts to a total of 6 credits), provided that the student does not register any other course during that semester. To be eligible for this internship track, the student must undertake the internship before the graduation semester and he/she must obtain a special permission from the department based on the student's achievements, number of credit hours the student passed, and the availability and quality of a training opportunity for a full semester.

Free Courses (2 credits)

Courses offered to other departments:

Course No.	Course Title	Credit	Pre-requisite
10636374	Microprocessor for Mechatronics I	3	10636111
10636428	Microprocessor and Microcontroller	3	
10636474	Microprocessor for Mechatronics II	3	10636374
10636476	Microprocessor for Mechatronics Lab	1	10636374
10636498	Microprocessor and Microcontroller Lab -	1	10636428
10636527	Embedded Systems	3	

Courses Description:

10636111 Computer Programming

Basic structured programming languages concepts: data types, expressions, input/output and modularity. Writing, executing, and debugging programs.

10636211 Data Structures & Algorithms

Data types and structures. Dynamic storage allocation. Linked lists. Binary tree representations and traversals. General trees. Searching and Sorting. Queues and Stacks. Hashing. Graphs, Depth-first algorithms, Breadth-first search.

10636212 Object Oriented Programming

Object oriented programming concepts: Classes, Encapsulation, Data Hiding & Abstraction, Single & Multiple Inheritance and Polymorphism. Writing programs using an objected oriented language such as C++ or Java.

10636215 Discrete Mathematics

The mathematical topics most directly related to computer engineering: logic, relations, functions, basic set theory, countability and counting arguments, proof techniques, mathematical induction, graph theory, combinatorics, discrete probability, recursion, recurrence relations, and number theory. Emphasis will be placed on providing a context for the application of the mathematics within computer engineering.

10636221 Digital Circuit Design I

Boolean algebra, Number Systems, logic gates, Simplification, combinational logic circuit design. Combinational circuits, Sequential Circuits, flip-flops, counters, registers (serial and parallel shifting), state machines design. Synchronous Systems.

10636291 Digital Circuits Design I Lab

Introduction to TTL and CMOS circuits. IC characteristics. Boolean Function design and implementation. Seven segment displays. Decoders, Shift registers, ROM, RAM, Mono-stable and Astable multi-vibrators and 555 timers. Sequential circuit design.

10636312 Software Engineering

Introductory, intermediate and some advanced level software engineering concepts: What is software engineering, Socio-technical systems, emergent

system properties, and the system engineering process, Critical Systems, Software Processes, Software requirements, Requirements engineering process, System and context models, Architectural design, Unified Modeling Language (UML) and Software Testing, evolution, Security and Dependability.

10636314 Algorithms and Computational Complexity

Introduction to algorithms. Design and analysis of algorithms and data structures. Techniques for the design of efficient algorithms. Time and space complexity. Recurrences. Sorting and order statistics. Advanced design and analysis techniques (dynamic programming and greedy algorithms). Efficient algorithms for manipulating graphs. NP-complete problems.

10636315 Database Systems

Introduction and fundamental concepts, system organization and implementation of database systems. Data modeling and Database design. Relational data model. Relational algebra and calculus. Functional dependencies. Normalization. Query languages and query optimization. Constraints and triggers.

10636316 Web programming

Web page programming using a variety of advanced languages: HTML, XML, Web programming languages such as XSLT, JavaScript, JSP, PHP, MYSQL, ASP, server-side programming and designing interactive content using Web tools.

10636318 Digital Image Processing

Introduction to digital image processing, digital image fundamentals, image enhancement, color image processing, image compression, morphological image processing and object recognition.

10636321 Digital Circuits Design II

Algorithm State Machine Design. Analysis and design of asynchronous sequential circuits. Programmable logic devices (PLA, PAL, CPLD, FPGA) and their applications. Hardware Description languages: VHDL. Clock generators and timing circuits. Electrical characteristic of logic gates and the interpretation of datasheets.

10636322 Microprocessors

Microprocessors systems, Microprocessor Architecture. The 8088/8086 microprocessor, addressing Modes, the Instruction Set and assembly programming of the 8088/8086 family. Hardware Specifications, Memory interface, Input/ output Interface and Interrupts.

10636323 Computer Architecture I

Computer Components, the Hardware/Software Interface, Historical Overview, Computer Performance, Instruction Set, Integer Arithmetic, Datapath and Control Design for: single cycle, multi-cycle and pipelining. Basic Memory and Cache.

10636332 Digital Electronic Circuits

Digital logic families (RTL, DTL, TTL, ECL, I²L, CMOS), CMOS properties (Voltage transfer characteristics and switching times), OP-AMPS circuits and their interfacing, Analogue-to-Digital and Digital-to-Analogue conversions, sensor circuits (optical and ultrasonic), Regulated Power Supplies, Driver Circuits and power demanding circuits (Relays, H Bridges, High Current Drivers, Power Electronics SCRs, Triacs, and SGT). An introduction to Layout design rules is also presented in this course.

10636351 Data and Computer Communication

Principles of data communication and networking: Data Coding and Encoding Techniques, Information Theory, Protocol principles: Error control (detection and correction) techniques and algorithms, Asynchronous & Synchronous Transmission Methods and Physical interfaces, Transmission fundamentals and principles, Modulation and Demodulation methods, Various Transmission Media, Multiplexing, Digital Modulation and Performance. Introduction to Flow control and Data Link Control.

10636391 Digital Circuit Design II Lab

Clock generators, Oscillators, Asynchronous Circuits, Algorithmic state machine, FPGAs, CPLDs and VHDL experiments.

10636392 Microprocessors Lab

Introduction to the Microprocessor (Intel 80386) and its Architecture, Addressing Modes, Data Movement Instructions, Arithmetic and Logic Instructions, Program Control Instructions, Programming the Microprocessor, Interrupts. ADC, DAC, and I/O interfacing & control.

10636410 Critical Thinking and Research Skills

This course addresses the theoretical and practical considerations of critical thinking and research. It studies the process of developing, supporting and evaluating beliefs and arguments through effective inductive and deductive reasoning and cognitive skills. The course also applies the reasoning process to conduct and evaluate scientific research. The Students are expected to present relevant research topics for the course, in oral and written forms, to gain practical experience both conducting research as well as defending their own arguments and opinions.

10636415 Advanced Database Systems

Object-oriented/object-relational databases, data warehousing, on-line analytic processing (OLAP), database mining and knowledge discovery, Information integration and mediation, query optimization, databases and the WWW, continuous query processing, distributed databases, heterogeneous databases and data integration.

10636416 Compiler Construction

Fundamentals of compilers and interpreters: symbol tables; lexical analysis, syntax analysis, semantic analysis, code generation, and optimizations for general purpose programming languages.

10636417 Artificial Intelligence and Machine Learning

AI definition, intelligent agents, problem solving by searching, genetic algorithms, constraint satisfaction problems, games, knowledge and reasoning, first order logic, uncertainty and probabilistic reasoning, learning and neural networks.

10636418 Computer Graphics

Basic elements of a computer graphics rendering pipeline; architecture of modern graphics display devices; geometrical transformations (rotation, scaling, translation, and their matrix representations), homogeneous coordinates, projective and perspective transformations; algorithms for clipping, hidden surface removal, rasterization, and anti-aliasing; scan-line based and ray-based rendering algorithms, lighting models for reflection, refraction, and transparency, graphics libraries and tools such as OpenGL, and 3D-MAX modeling tools.

10636419 Neural Networks and Fuzzy Systems

Basic concepts of neural networks and fuzzy logic systems, perceptrons, classification of neural networks, feed-forward networks, single- and multilayer perceptrons, feed-back networks, Hopfield networks, unsupervised learning, fuzzy groups, fuzzy logic, fuzzy numbers, fuzzy relations, fuzzy graphs, entropy, fuzzy logic system design, co-operation of neural networks and fuzzy systems,

10636422 Advanced Microprocessors

Architecture of 32 bit and 64 bit microprocessors. Assembly and high-level programming of advanced microprocessor systems. Study of a microprocessor family such as 80x86: Pentium, PII, etc. Comparative study of different families of microprocessors. Dynamic memory and input/output interfacing.

10636423 Computer Architecture II

Instruction Set Architectures. Advanced concepts in: Pipelining, multi-threading & multi-core design, Memory hierarchy and IO design. Introductory concepts in distributed & parallel processing.

10636426 Microcontrollers

Micro-controller architectures and peripherals, embedded operating systems and device drivers, compilers and debuggers, timer and interrupt systems, interfacing of devices, communication. Emphasis on practical application of development platforms. The course includes building a practical project using a popular embedded controller.

10636451 Operating Systems

Principles of operating systems. Process management, synchronization, virtual memory management, resource allocation and deadlock, Auxiliary storage and File system implementation.

10636454 Computer Networks I

Computer networks architectures, protocol layers, Internet protocols, transmission media, encoding systems, error detection, switching. Data link layer and multiple access channel protocols. Network layer, network routing, congestion control and flow control. End-to-end transport services and protocols. Network security and privacy. Applications layer including electronic mail, virtual terminals, file transfer, and Internet applications.

10636455 Computer Networks II

The Design and configuration of high speed LANS. Wireless networks. WANS overview: Frame-relay, ISDN, leased lines, ATM and other Wan topologies. Rerouting protocols and Access Lists. Network management: SNMP. Router and level 3 switch configuration. The course includes a practical project.

10636456 Distributed Operating Systems

An in-depth examination of the principles of distributed systems in general, it covers core topics in distributed system design and implementation including: structure, topology, processes and threads, distributed inter-process communication, distributed process scheduling, naming, event ordering, fault tolerance, data replication and consistency.

10636464 Special Topics I

This course covers current trends in Computer Engineering.

10636475 IT Business Management

Management of IT systems, software and hardware, e-commerce, and network management. The course also emphasizes how to start and manage IT business feasibility studies.

10636493 Computer Design Lab

Hands-on experience in designing a processor. Students are given an instruction set and asked to build the data path using off-the-shelf components. The students are also asked to design and implement hard-wired control of the data path.

10636496 Microcontrollers Lab

Emphasis on practical application using a microcontroller development platform: Micro-controller architectures, peripherals, embedded operating systems, device drivers, compilers, debuggers, timer, interrupt systems, interfacing of devices and communications.

10636511 Information and Network Security

Symmetric encryption, stream vs. block ciphers, asymmetric encryption, hash functions, data integrity, message authentication codes, digital signatures, networks and IP security, SPAMs, certificates & public key infrastructure and TLS/SSL.

10636521 Computer Components and Interfacing

Structure and components of hardware and software systems. Machine organization, including central processor and input-output architectures; operating systems, including process, memory, storage, and file management. Drives and Drivers; Floppy and hard disks, CD-ROMs. Interface cards.

10636523 Parallel Processing

Introduction to parallel computing, parallel architectures (shared memory & distributed memory), multi-core architectures, principles of parallel algorithm design, parallel programming models and methods for shared and distributed memory systems, Performance Analysis of Parallel Programs, parallel algorithms and applications.

10636525 Real-Time Systems

Principles of Real time systems. Design and construction of software for real-time computer systems. Software architectures. Requirements and specification methods. Scheduling algorithms and timing analysis. Real-time operating systems. Real-time programming languages.

10636526 Fault Tolerant Computing

Faults and their manifestation, issues, theory, and techniques of reliable systems design, testing, design for testability, self-checking and fail-safe circuits, coding techniques, system-level fault diagnosis, fault-tolerant communication, reliable software design, and evaluation criteria.

10636528 Digital Control

This is an introductory course on digital control theory. It emphasizes a discrete-time viewpoint for the analysis of dynamical systems and the synthesis of control laws meeting given design specifications. Main content includes basic concepts of computer control systems and digital control theory, z-transform, discrete and sampled-data systems, design using transform techniques, PID controller

Implementation and tuning, digital control system simulation using Matlab/Simulink and Control Toolbox.

10636554 Special Topics in Networks

This course covers current trends in Computer Networks

10636563 Multimedia Applications

Developing multimedia applications utilizing special tools. Computer Animation & Graphics. Principles of interactive multimedia applications. Digital Media representations. Designing multimedia for the web. Emphasis on student projects to develop a practical application using multimedia tools.

10636564 Special Topics II

This course covers current trends in Computer Engineering.

10636568 VLSI

CMOS logic, CMOS fabrication and layout, MOS transistor theory, performance evaluation, CMOS families, sequential circuit design, data-path subsystems, array logic and memory, input and output pads.

10636581 Graduation Project I

The student is expected to design and implement a practical software package.

10636582 Graduation Project II

The student is expected to design and implement the hardware and software for a practical system.

10636594 Networks Lab

Networks installation, configuring routers and switches, network simulations, installation and configuration of servers, network analysis and design.

10636374 Microprocessor for Mechatronics I

History and development of The 80x86 microprocessors. The 80x86 architecture. The central processing unit. Memory addressing and data formats. Address/data and control buses. The CPU /Memory interface. The Instruction set, and addressing modes. Assembly language programming.

10636428 Microprocessor and Microcontroller

Microcontroller architecture. Addressing modes and instruction sets. Subroutines and interrupts. Working with software development tools including: IDE, editor, assembler, simulator and C compiler. Interfacing techniques including: parallel, serial, timers and analogue peripheral interfaces.

10636474 Microprocessor for Mechatronics II

Clock and timing of control signals, bus operations, memory interfacing. I/O interface and peripheral devices. Interrupts. Serial and parallel port interface. Configurable I/O ICs. I/O Assembly Programming.

10636476 Microprocessor for Mechatronics Lab

Introduction to Programming the 8088/ 8086 kit. Writing practical assembly language programs. Interfacing experiments on peripherals with applications to DAC, RS232 communication, LED Matrix, LCD, ADC, DC motor, and stepper-motor. Practical project in the field of microprocessor interfacing.

10636498 Microprocessor and Microcontroller Lab

Introduction to microcontroller interfaces and design. Interfacing digital inputs and outputs. Experiments include: building microcontroller systems using temperature sensors, RS232 communication, motor control, LCD, and other types of displays.

10636527 Embedded Systems

Designing and programming basic, simple standalone embedded systems, Basic Hardware architecture of modern low/medium end microcontrollers, Fundamental software architecture of the microcontroller-based embedded systems, User-processor Interface design ability with LCD displays, keypads, and buzzers, Assembler and C programming of stand-alone embedded system microcontrollers, Timing in embedded systems, Interrupt management, servicing, and hierarchical interrupt structures with application, building embedded networks with serial communication. The students will apply the basic system design concepts they learn in a practical project.

Staff of Department:

Name	Degree	University of graduate
Ashraf Armoush	Assistant Professor	RWTH Aachen University - GERMANY,2010
Aladdin Masri	Assistant Professor	Ecole Centrale de Lille ,2009
Hanal Abuzant	Assistant Professor	Ecole Centrale de Lille
Luai M. Malhis	Assistant Professor	University of Arizona,1996
Raed Alqadi	Assistant Professor	University of Wisconsin-Madison,1995
Samer Arandi	Assistant Professor	University of Cyprus – Cyprus,2011
Sufyan Samara	Assistant Professor	University of Paderborn - GERMANY,2010
Anas Toamah	Lecturer	Jordan University of Science and Technology, Jordan,2008
Haya Sammaneh	Lecturer	Jordan University of Science and Technology, Jordan,2006
Muhannad R. Al-Jabi	Lecturer	Jordan University of Science and Technology, Jordan,2005
Tasneem Abu-Eideh	Teaching Assistant	An-Najah National University, Palestine, 2009
Alaeddin Alabdallah	Teaching Assistant	Al-Najah National University,Palestine,2006
Muna Qanadilo	Teaching Assistant	Al-Najah National University,Palestine,2007

{ Material Engineering Program }

The Vision

The Vision of the Material Engineering and Science Department at An-Najah National University is:

To produce graduates who are well-rounded in material engineering education and research and who are equipped with professional skills, scientific background, and ethical and professional values, and are prepared to meet the related needs of industry or for advanced academic study in materials-related disciplines.

The Mission

The Mission of the Material Engineering and Science Department at An-Najah National University is:

- To contribute to the development of materials industry in Palestine by providing students with up-to-date knowledge and skills through course work, modern laboratories, opportunities to conduct cutting-edge research with distinguished faculty mentors, and opportunities to participate in leadership and service activities.
- To produce graduates with outstanding scientific, technical and experimental competence to enable them to analyze and interpret data, design and conduct experiments in the field of material engineering.
- To apply knowledge to solve material engineering problems in global, economic, societal, and environmental contexts, considering social, political, ethical, health, safety, and sustainability aspects, within a lifelong learning framework.

Program educational objectives (PEO's) of the Material Engineering Program

Graduates of the Material Engineering program at An-Najah National University are expected to have the following PEO's

1. Our graduates will be able to demonstrate professionalism with a high ability to work within a team with good communication skills.
2. Our graduates will pursue career growth through professional development while upholding the cultural heritage of the Palestinian people.
3. Our graduates will be prepared to work in different countries, sensitive to cultural aspects and with a strong foundation in applied material engineering to meet the standards of local and international needs.

Student outcomes

1. The ability to apply knowledge of mathematics, science, and engineering.
2. The ability to design and conduct experiments, as well as to analyze and interpret data.
3. The ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. The ability to function on multidisciplinary teams.
5. The ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. The ability to communicate effectively.
8. A broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for, and an ability to engage in, life-long learning
10. Knowledge of contemporary issues.
11. The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Graduation requirements

The Bachelor degree in Material Engineering requires a minimum of 159 credit hours of course work. A detailed distribution of the minimum credit hours required for obtaining the Bachelor degree in Material Engineering is shown below:

	Compulsory	Elective	Free	total
University requirements	18			18
Department requirements	128	9	4	141
Total	146	9	4	159

I- University requirements (18 credits)

University Compulsory Courses

Course code	Course title	Credit hours	Prerequisite
110001011	Islamic Culture	3	
110001021	Arabic Language 1	3	
11000103	English Language 1	3	
110003221	English Language 2	3	
11000105	Palestinian Studies	3	
110001171	Leadership and Communication Skills	1	
11000108	Community Service	1	
11000127	Introduction to Computer	1	
Total Credits		18	

II- Department requirements (141 credits)

A. Mandatory courses offered by the Material Engineering Department
(141 credit hours) They include:

Course no.	Course Name	C.H.	Prerequisite
10223101	General Chemistry 1	3	
10223107	General Chemistry 1 Lab	1	10223101 or concurrent: 10223101
10222101	General Physics I	3	
10222115	General Eng. Physics Lab	1	
10222102	General Physics II	3	12210102
10221101	Calculus I	3	
10221102	Calculus II	3	12110102
10221201	Calculus III	3	12110202
10221202	Engineering Mathematics	3	12120102
10221230	Statistics and Probabilities for Engineers	3	
10223102	General Chemistry 2	3	12310102
10223108	General Chemistry 2 Lab	1	123107/02 10223102
10626251	Engineering Numerical Analysis	3	10636111, 10221202
Total Credits		33	

A.1 Math and Science Courses (33 credit hours)

A.2 Compulsory Courses from the Department of Materials Science and Engineering (95 Credit hours)

Course no.	Course Name	C.H.	Prerequisite
10636111	Computer Programming	3	
10621100	Engineering workshop(1)	1	
10621101	Engineering Workshop Practice	3	
10606102	Engineering Drawing	2	
1661212	Structure of Materials	3	10211661
10661211	Introduction to Materials Engineering	3	10221102,10223102,10222102
10661213	Thermodynamics of Materials	3	10221201,10223102,10222102
10661214	Metals and Alloys	3	10221102,10223102,10222102
10661215	Fluid and Thermal Sciences	3	10221102,10223102,10222102
10661216	Phase Transformation and Kinetics	3	10661213
10661217	Vacuum and Thin-Film Materials Technologies	3	10661213
10661311	Polymeric Engineering Materials	3	10221102,10223102,10222102,10661211
10661312	Mechanical Properties of Materials	3	10686213,1661212
10661313	Electrical and Magnetic Materials	3	10661312
10661314	Biomedical Materials	3	10661311
10661315	Composites Materials	3	10661211,10661311
10661316	Electronic Device Materials and Fabrication	3	10661215,10661214
16061411	Corrosion Science and Engineering	3	1661315
10661412	Fracture and Fatigue of Materials	3	10661312
10661413	Materials Laboratory	1	10661211
10661414	Mechanical Properties Laboratory	1	10661312
10661415	Magnetic and Optical Laboratory	1	10686313
10661416	Polymer Laboratory	1	10661311
10661417	Thermodynamic and Kinetic Laboratory	1	10661213

Course no.	Course Name	C.H.	Prerequisite
10661419	Internship I	3	At least 75%of credit hours completed
10661431	Advance Material Science	3	10661211
10661432	Advanced Materials Characterization Techniques	3	10661312
10661433	Ceramic Materials	3	10661212
10661434	Physical Metallurgy	3	10661214
10661437	Growth Aspects of Semiconductor	3	10661215
10661438	Theory and Modeling of Material Properties	3	10221202,10661213
10661439	Materials Processing	3	10661214,10661311
10661440	Process and Product Design	3	10661439
10631301	Engineering Economics and Management	3	10221101
10661591	Graduation Project I	2	
10661594	Graduation Project II	3	
	University Elective Courses 1	2	
	University Elective Course 2	2	
Total Credits		95	

Elective Courses from the Department of Materials Science and Engineering
(9 credits from the following)

Course code	Course title	Credit hours	Prerequisite
10661435	Advanced Electronic Properties of Materials	3	
10661441	Mathematical Methods for Materials Scientists	3	
10661442	Special Topics in Chemistry	3	
10661443	Electrochemical Processing of Materials	3	
10661444	Sustainable Energy	3	
10661420	Internship II	3	Concurrent with10661419
Free courses		2	

Courses description

10222115 General Engineering Physics Lab

This course includes experiments in the fields of electricity and mechanics. It continues the lab experimentation in the subjects covered by Physics I and Physics II.

10626251 Engineering Numerical Analysis

The course aims to clarify the basic skills of numerical methods such as error calculations, solving linear and non-linear equations and their systems, numerical differentiation and integration, solving ordinary differential equations and their systems, curve-fitting and interpolation. Students will be practiced on some special software related to numerical methods.

10661591 Graduation Project I

In this course, a student undertakes an independent project for the design and development of materials and industries - either experimental, theoretical or both. This can be in any area of material engineering under the supervision of a faculty advisor. The objective of the project is to show the student how to apply his/her knowledge of material engineering principles to a problem and in doing so to demonstrate his/her skills and creativity. The problem may be tackled by a group of students, but contributions should be individually assessed. At the end of the term, the student must give an oral presentation of his/her project and submit a hard copy report.

10661594 Graduation Project II

In this project, the student applies what he/she has found in the Graduation Project I. He/she will make visits to Palestinian plants and design a piece of equipment in the college labs. At the end of the term, the student must give an oral presentation of his/her project and submit a hard copy report.

10631301 Engineering Economics and Management

Topics covered include principles and ways used by the engineer to justify the economic decisions concerning long- and short-term planning, the development of skills in preparing cash-flow, as well as present and future value calculations. The students are introduced to different ways used in evaluating projects and their economic feasibility using present value, future value, annual payments, and rate of return profit to choose most feasible project and computer applications and basic concepts management.

10621100 Engineering Workshop (1)

This course is designed to develop basic skills in fields of manual sheet metal fabrication, welding processes and household electrical circuits. Students will perform individual and practical exercises.

10661211 Introduction to Materials Engineering

Phenomena such as heat capacities, phase transformations, and multiphase equilibrium to chemical reactions and magnetism; symmetry properties of molecules and solids; structure of complex, disordered, and amorphous materials; tensors and constraints on physical properties imposed by symmetry; and determination of structure through diffraction. Real-world applications include engineered alloys, electronic and magnetic materials, ionic and network solids, polymers, and biomaterials.

10661212 Structure of Materials

Material types and its application, material structure and crystalline systems, space lattices and symmetry, point groups and space groups, imperfect crystals and point, line and surface defects, principles of X-ray diffraction, single crystal diffraction, powder patterns, Fourier transforms, Patterson functions, grain size effects, diffuse and small-angle scattering, Bragg and Laue, X-ray topography, the relationship between microstructures of solid materials and their engineering properties, the dependence of mechanical, electronic, magnetic, thermal, and chemical properties of metals, semiconductors, ceramics, polymers, and glasses on their chemical bonding, electronic structure, atomic arrangement, and phase composition.

10661213 Thermodynamics of Materials

Laws of thermodynamics, energy and entropy, criteria for equilibrium, introduction to statistical thermodynamics, construction of phase diagrams, multi-component and multiphase systems, solid solutions, eutectics and eutectoids, incongruent melting and peritectics, application of phase diagrams: prediction of a material's microstructure, properties and engineering applications, surface energy and capillary effects; phase boundary shifts, microstructure coarsening, electrochemistry: equilibrium in electrolytes, Roubaix diagrams.

10661214 Metals and Alloys

Crystal structures of metallic elements, structures of solid solutions, phase diagrams and their determinations, phase changes and the effects on their properties, ferrous and non-ferrous metals and their applications, strengthening processes, mechanical failures and their prevention, environmental effects with special reference to oxidation and corrosion, metal extraction and processing.

10661216 Phase Transformation and Kinetics

Diffusion, Fick's first and second laws of diffusion and diffusion mechanisms, interface, fully coherent, semi-coherent and incoherent interfaces, interfacial energy and strain energy and coherency loss, solidification, nucleation and growth, solidification of alloys and eutectics, diffusional transformation: nucleation and growth, TTT diagram, spinodal transformation, diffusionless transformation and strengthening mechanism, applications of phase transformations

10661217 Vacuum and Thin-Film Materials Technologies

Vacuum technology; vacuum pumps and vacuum systems, gas kinetics and Hertz-Knudsen equation in growth of low dimensional structure, thermal evaporation, deposition; adsorption, surface diffusion, nucleation, and structure development, epitaxy, surface morphology and misfit dislocations, overview of chemical vapor deposition, energy beams, and thin film analyses techniques

10661311 Polymeric Engineering

Polymer structure-property relations: thermoplastics, thermosets, elastomers, biopolymers, ionomers, polyelectrolytes and liquid crystalline polymers; molecular weight distribution; crystallinity. Polymer classes and applications. Polymer phase transitions. Polymer synthesis: free-radical, cationic, anionic, condensation, oxidative and ring-opening polymerisations, in bulk, solution and microemulsion media. Polymer characterization by thermal, spectroscopic, surface and imaging methods. Polymer degradation and stabilization.

10661312 Mechanical Properties of Materials

Major topics include deformation, strains and stresses, elastic and viscoelastic properties, tension test: yielding, strain hardening, and necking, dislocation geometry and crystal structures, dislocation properties and dislocation interaction, plastic deformation in both single and poly-crystalline materials, overview of strengthening mechanisms in crystalline materials.

10661313 Electrical and Magnetic Materials

Dielectric materials: dipole moment, polarization mechanisms, ferroelectricity, piezoelectricity, dielectric strength and ionic conductivity; magnetic materials: origin of magnetic moment, Hund rules, paramagnetic, ferromagnetic, ferrimagnetic and antiferromagnetic materials, exchange coupling, magnetic anisotropy, magnetic hysteresis, soft magnets, permanent magnets and magnetic recording media; superconductivity, Meissner effect and critical temperature, BCS theory, Type I, Type II and High-Tech superconductors, applications of superconducting materials.

10661314 Biomedical Materials

The course will introduce the fundamentals of biomaterials science and engineering, such as bulk and surface properties of biomaterials, interaction of biomaterials with host tissues of biomaterials, and the use of materials in orthopedic, cardiovascular, dental and other applications. Other topics include properties of materials, classes of materials used in biology and medicine (metals, polymers, ceramics, composites, etc.). Other topics will include properties and processing of polymeric biomaterials, biological responses to biomaterials and their evaluation, biocompatibility issues, biodegradable polymeric materials, application of polymeric biomaterials in medicine will be discussed with emphasis on drug delivery systems and tissue engineering application.

10661315 Engineering Composites

Concept, classification and uniqueness in structure and properties of composite materials; commonly-used fabrication techniques for PMCs, MMCs and CMCs; important reinforcement phases; interfacial bonding, control and measurements for interfacial strength; formulation and relationships between elastic properties and geometrical parameters in lamina, in-plane random long fiber lamina, laminates, and short fiber composites; fiber end effects, load transfer at the interface; mechanical properties and failure of lamina, laminates and short fiber composites; fracture and energy absorption mechanisms in composite materials.

10661316 Electronic Device Materials and Fabrication

Classes of electronic materials for devices, semiconductors, insulators and conductors, printed circuit board, hybrid circuits, integrated circuit, semiconductor ingots and wafers, defects in semiconductors and their effects on electronic properties, gettering and applications, metal-semiconductor contacts, bipolar and MOS devices, wafer fabrication processes, lithography, doping of semiconductors, predeposition and drive-in diffusion, ion implantation, interconnect and metallization, silicides and diffusion barriers, basic assembly and packaging. Learning objectives: Modern electronic materials and related processes for wafer fabrication and circuits.

10661411 Corrosion Science and Engineering

Significance of corrosion, technological, economical, scientific principles of corrosion, electrochemical and thermodynamic considerations, kinetics and passivity, corrosion types, general, bimetallic, pits, crevices, intergranular and stress corrosion, causes of corrosion, environmental and metallurgical effects, influence of Singapore's tropical marine environment, engineering corrosion prevention, design and materials selection, coatings and inhibitors, cathodic and anodic protection, corrosion monitoring and inspection.

10661412 Fracture and Fatigue of Materials

Material fracture at atomistic scale: bond breaking; material damage at microscale: the nucleation, propagation and interaction of dislocations, void formation, crack initiation and propagation; fracture mechanics and its application to material design and selection; experimental measurement of fracture toughness; mechanisms of fatigue crack nucleation and growth; fatigue crack growth models and their applications to material life prediction; creep micro-mechanisms and creep fatigue; non-destructive evaluation techniques; case studies.

10661413 Materials Laboratory

The laboratory subject combines experiments illustrating the principles of quantum mechanics, thermodynamics and structure with intensive oral and written technical communication practice. Specific topics include: experimental exploration of the connections between energetics, bonding and structure of materials, and application of these principles in instruments for materials characterization; demonstration of the wave-like nature of electrons; hands-on experience with techniques to quantify energy (DSC), bonding (XPS, AES, FTIR, UV/Vis and force spectroscopy), and degree of order (x-ray scattering) in condensed matter; and investigation of structural transitions and structure-property relationships through practical materials examples.

10661414 Mechanical Properties Laboratory

Hardness, tensile, compression, impact, torsion, creep and fatigue tests. Macro-and micro-examination of metals. Experiments in casting, forming, machining, welding, heat treatment and plastic manufacturing.

10661415 Magnetic and Optical Laboratory

Electrical and magnetic techniques in such measurements as the Earth's magnetic field, an absolute measurement of current, and RLC resonance. Optical investigations include the study of sodium and hydrogen discharge lamps with a grating spectrometer, refraction and geometric optics of thin lenses, and single- and multiple-slit diffraction.

10661416 Polymer Laboratory

Characterization of polymers by different methods, including spectroscopic (nuclear magnetic resonance, Raman, infrared), mechanical (tensile, dynamic mechanical, rheological), microscopic (electron and optical microscopy), physiochemical (intrinsic viscosity, differential scanning calorimetry, gel permeation chromatography) and scattering (light, x-rays). Molecular simulation techniques introduced. Preparation and characterization of the most important polymer types. Radical, cationic, anionic polymerization; copolymerization;

10661417 Thermodynamic and Kinetic Laboratory

Experiments will be designed to study topics in macroscopic physical chemistry dealing with the bulk properties of matter and energy. These experiments include the properties of gases, the First and Second Laws of thermodynamics and their application to physical and chemical systems, phase and chemical equilibria, rates of reactions and chemical kinetics, and x-ray diffractometry.

10661419 Practical Work

6 months practical work in factories, companies and research centers.

10661431 Advance Materials Science

Properties and identification of nano-sized structured materials, including: free clusters, fullerene and nano-tubes, nano-rods, nano-particles in matrix, multi-layers GMR effect AMR effect, quantum dots, nano-crystalline materials, grain boundary.

10661432 Advanced Materials Characterisation Techniques

Topics include X-ray analysis (X-ray diffraction, X-ray absorption, X-ray fluorescence, X-ray structural analysis, and energy dispersive X-ray analysis), surface analysis (X-ray photoelectron spectroscopy and secondary ion mass spectroscopy), vibrational spectroscopy (infrared spectroscopy and Raman spectroscopy), and thermal analysis (thermogravimetric analysis and differential scanning calorimetry).

10661433 Ceramic Materials

The major topics covered in this module include crystalline structure of important ceramics, ceramic phase formation and development, ceramic particles and powders, theories of sintering, grain growth and abnormal grain growth, microstructural controls for designed structural and functional properties as well as important engineering ceramics and their applications.

10661415 Physical Metallurgy

The Introduction to Physical Metallurgy course aims to provide a general introduction to the field of Physical Metallurgy. The course covers phase diagrams, transformation diagrams and the associated thermodynamics, diffusion, liquid-solid transformations, ferrous and non-ferrous materials and cold work, recovery and recrystallisation.

10661432 Advanced Electronic Properties of Materials

Topics to be covered include materials for microelectronics, growth of microelectronic materials and the manufacture of microscopic heterostructures, band theory of solid state materials, band structure of the most popular electronic materials (Si, Ge, GaAs) and alloys, size quantization of electronic states in heterostructures, electron transport in solids, contacts

between semiconductor materials, theory of modern transistors, optical properties of semiconductors, light emitting diodes.

10661437 Growth Aspects of Semiconductor

Semiconductor surfaces and structures, aspects of epitaxy in growth of low dimensional III-V and Si based semiconductor materials, in-situ characterisation techniques and monitoring epitaxial growth by molecular beam epitaxy: structural, kinematic theory of LEED and application of RHEED, surface topography, composition and growth modes probed by STM, XPS and Auger spectroscopy, layer by layer, layer-island and island growth, problems of sensitivity and selectivity in the study of surfaces and interfaces.

10661438 Theory and Modeling of Material Properties

Introduction to quantum chemistry and quantum electronics, band theory of solid materials, transport phenomena in solids from the microscopic viewpoint, random processes in solids, Monte-Carlo calculations of diffusion, introduction to the theory of phase transitions, crystal growth and precipitation, self-organization in open non-equilibrium solid state systems, molecular dynamics modeling of properties and processes in condensed materials.

10661439 Materials Processing

The goal is to teach cost-effective and sustainable production of solid material with a desired geometry, structure or distribution of structures, and production volume. Toward this end, it is organized around different types of phase transformations which determine the structure in various processes for making materials, in roughly increasing order of entropy change during those transformations: solid heat treatment, liquid-solid processing, fluid behavior, deformation processing, and vapor-solid processing. The course ends with several lectures that place the subject in the context of society at large.

10661441 Mathematical Methods for Materials Scientists and Engineers

Mathematical techniques necessary for materials science and engineering and engineering topics such as energetics, materials structure and symmetry, materials response to applied fields, mechanics and physics of solids and soft materials. Mathematical concepts and materials-related problem solving skills. Symbolic algebraic computational methods, programming, and visualization techniques. Topics include linear algebra, quadratic forms, tensor operations, symmetry operations, calculus of several variables, eigensystems, introduction to complex analysis, systems of ordinary and partial differential equations, phase plane analysis, beam theory, resonance phenomena, special functions, numerical solutions, statistical analysis, Fourier analysis, and random walks.

10661442 Special Topics in Chemistry

This course covers energy conversions used in the production of top commodity chemicals, fossil fuels, alternative energy sources from plants and their wastes, energy from disposed plastics and rubber, and the prospects of hydrogen as a fuel.

10661443 Electrochemical Processing of Materials

This course covers a variety of topics concerning superconducting magnets, including thermodynamic and transport properties of aqueous and non-aqueous electrolytes, the electrode/electrolyte interface, and the kinetics of electrode processes. It also covers electrochemical characterization with regards to d.c. techniques (controlled potential, controlled current) and a.c. techniques (voltametry and impedance spectroscopy). Applications of the following will also be discussed: electrowinning, electrorefining, electroplating, and electrosynthesis, as well as electrochemical power sources (batteries and fuel cells).

10661444 Sustainable Energy

The assessment of current and potential future energy systems is covered in this course and includes topics on resources, extraction, conversion, and end-use, with emphasis on meeting regional and global energy needs in the 21st century in a sustainable manner. Different renewable and conventional energy technologies will be presented and their attributes described within a framework that aids in evaluation and analysis of energy technology systems in the context of political, social, economic, and environmental goals.

10661215 Fluid and Thermal Sciences

This course begins with an introduction to the properties of fluids, fluid statics and pressures, applications of conservation of energy to fluid systems. Then it moves to principles of heat transfer, mainly conduction and convection heat transfer.

10661440 Process and Product Design

The course focuses on design aspects of materials from a product and process perspective. It is a project-driven course that combines the disciplines of creative design with studies in material engineering, materials and manufacturing processes. It provides the skills to design and develop competitive products in both quality and design for the Palestinian and international markets.

Staff Members:

Name	Position	University of Graduation
Hassan Sawalha	Assistant Professor	Wageningen University, the Netherlands, 2009
Nasha'at Nassar	Assistant Professor	Calgary University
Shady Sawalha	Lecturer	(LECCE) University, Italy, 2001
Osaid AbdelFatah	Lecturer	Moscow University of Technology, Moscow
Maha Fuqaha	Teaching Assistant	An-Najah National University, 2008
Yosef Ratroot	Teaching Assistant	An-Najah National University, 2007

{ Mechatronics Engineering Program }

Introduction

Mechatronics, in terms of computer control of electric motors, was first used by an engineer at Japan's Yaskawa Electric Co. in the late 1960s. The word has remained popular in Japan, and has been in general use in Europe for many years. Mechatronics, however, has been slow to gain industrial and academic acceptance as a field of study and practice in Great Britain and the United States. Worldwide, its increasingly prominent place is shown by the growing number of undergraduate and postgraduate mechatronics engineering courses that are now being offered. In the 1970s, mechatronics engineering developed from being just a training course at the Japanese industry, where it was concerned mostly with servo technology used in products such as automatic door openers, vending machines, and auto-focus cameras, to the field of teaching and specialization at Japanese universities. In the 1980s, as information technology was being introduced, engineers began to embed microprocessors in mechanical systems to improve their performance. Numerically-controlled machines and robots became more compact, while automotive applications such as electronic engine controls and antilock-braking systems became widespread.

By the 1990s, communications technology was added to the mix, yielding products that could be connected in large networks. This development made new functions possible, such as the remote operation of robotic manipulator arms. At the same time, new, smaller - even micro-) scale-sensor and actuator technologies are being used increasingly in new products. As significant as these developments may seem, a good deal of skepticism remains about the idea of codifying them in an engineering field called "mechatronics." "It's certainly a catchy word," but it's an evolutionary, rather than revolutionary, development. Mechatronics is really a familiarity with all the other technologies - computers, software, advanced controls, sensors, actuators, and so forth - that make the advanced products possible. Mechatronics is not a single area; rather, it is a mixture of technologies and techniques that together help in industrial developments. Therefore, mechatronics engineering can be defined as the synergistic combination of mechanical, electronics, control, and computer engineering, all integrated horizontally and vertically through the design processes and manufacturing.

Mechatronics engineering meets the needs of the national, regional and international job markets. The diagram on the right defines mechatronics engineering (see the intersect circles) and presents the structure of the academic study plan, and also the general work fields (automotive, aerospace, xerography, defense systems, consumer products, manufacturing and material processing) that may get an advantage or support from mechatronics engineers. Looking in-depth inside the general work areas where mechatronics engineers may obtain job opportunities, one can notice that these work areas include all the needs of a developed society. For this reason, mechatronics engineers have a very wide range of job opportunities in the local, regional, and international markets. On the other hand, the diversity in the job opportunities makes the unemployment among mechatronics engineers negligibly small or even non-existent among mechatronics engineers.

Program Justifications

1. An-Najah National University and its Engineering Faculty have a rich educational background and new-modern infrastructure that make the Engineering Faculty capable of establishing and running the new Mechatronics Engineering Program.
2. The four pillars of mechatronics (mechanical, electronics, computer and control) exist in the faculty's departments of Mechanical Engineering, Electrical Engineering, and Computer Engineering, making it easy to run the Mechatronics Engineering Program. Suitable teaching staff, laboratories, and a library, all necessary for the success of the program, are in place.
3. The University mission indicates clearly that An-Najah National University has a great responsibility for the development of the Palestinian society. The Mechatronics Engineering Program will provide an extra support for the university to achieve its national goals by creating a new technological base for the development of the national industry that would enhance the development of the local economy as well as the Palestinian society.
4. Establishing new engineering programs, such as mechatronics engineering, in the Palestinian universities is a national necessity and priority for three major reasons:
 - Developing and raising the Palestinian society to international levels.
 - Education is one of the best investments in Palestine as a developing country.
 - Mechatronics engineering will develop the national economy by providing local education for Palestinian students, and providing the Arab world with well-educated and trained mechatronics engineers.
5. The Palestinian market and the regional market are in need for well-qualified mechatronics engineers.

Against the background of the University and the proposed program (Mechatronics Engineering Program), it is crystal clear that this program goes in line with the general policies set by the Palestinian Ministry of Education and Higher Education.

Program vision

Educate engineers who can blend all types of modern technology and provide it to the society to have a respective enhancement in its economic development.

Program Mission

The mission of the Mechatronics Engineering Program focuses on three dimensions: local, regional and international. It is also based on and inspired by the missions of both the Faculty of Engineering and the University. The Mechatronics program has been established to take an advanced, important position in the development of the local community, by providing the national and regional labor markets with well-educated and trained mechatronics engineers, while taking into account the international standards in education and training.

Program Objectives

The objectives of the Mechatronics Program are in harmony with both the program's vision and mission:

6. Mechatronics engineering graduates are able to contribute knowledge, skills, time and effort to the profession, and to local and regional markets.
7. Mechatronics engineering graduates are well-prepared to assume successful careers in the fields of mechatronics engineering in local and regional markets. They will demonstrate professionalism and a sense of social and ethical responsibilities in all of their endeavors.
8. Mechatronics engineering graduates are well-prepared to engage in life-long learning by pursuing graduate studies, professional development, practical training, and/or specialized certifications.

Admission Requirements

Students will compete for their admission to the Mechatronics Engineering Program according to their cumulative average in the General Secondary Education Certificate (Tawjihi), and the University admission requirements.

Graduation Requirements

The Bachelor of Science degree in Mechatronics Engineering requires completion of a minimum of 160 credit hours of course work. A detailed distribution of the minimum credit hours required for obtaining a B.Sc. in Mechatronics Engineering is given below:

	Compulsory	Elective	Free	Total
University Requirements	18			18
Department Requirements	132	9	2	143
Total	150	9	2	161

Key for course digits:

The numbering system consists of 7 digits; each digit from left to right is as follows:

The first and second digits stand for the faculty: 06 stands for Engineering.

The third and fourth digits refer to the study program: 51 stand for Mechatronics.

The fifth digit refers to the academic level: numbers are in the range of 6 to 9.

The sixth digit refers to the field number of each course:

Specialization	field Number
Mechanical and Hydraulic Systems	6
Control Systems, Computer and Software	7
Mechatronics Systems	8
Electrical and Electronic Systems	9

The seventh digit refers to the serial number of the course within the field and academic level.

Example: Robotics # is 0651582.

Robotics					0671582	
0	6	5	1	5	8	2
Engineering		Mechatronics		Level	Field	Sequence

University Compulsory Requirements (18 credit hours)

Course #	Course Title	Credit	Prerequisite
11000101	Islamic Culture	3	-
11000102	Arabic Language	3	-
11000103	University English I	3	-
11000105	Palestinian Studies	3	-
11000108	Community Service	1	completion of 32 credits
11000117	Leadership and Communication Skills	1	-
11000127	Introduction to Computer Science	1	-
11000322	University English II	3	-

Department Requirements (143 credit hours)

Compulsory courses (132)

Course #	Course Title	Credit	Prerequisite
10221101	Calculus I	3	
10221102	Calculus II	3	10221101
10221201	Calculus III	3	10221102
10221202	Engineering Mathematics	3	10221201
10221230	Probability and Statistics for Engineers	3	10221102
10222101	General Physics I	3	
10222102	General Physics II	3	10222101
10222115	General Physics Lab. for Engineering	1	10222102, or in parallel
10223101	General Chemistry I	3	
10223107	General Chemistry I(Laboratory)	1	10223101
10601110	Statics	3	10221101 , 10222101
10606102	Engineering Drawing	2	
10621100	Engineering Workshop I	1	
10621101	Engineering Workshop I (Practical)	0	10621100, or in parallel
10621200	Engineering Workshop II	1	0621100
10621201	Engineering Workshop II (Practical)	0	10621200, or in parallel
10621214	Strength of Materials	4	completion of 10601110
10621210	Dynamics	3	10601110
10621213	Mechanical Drawing	2	10606102
10621261	Principles of Thermo-Fluids and Heat Transfer	3	10223101; 10601110
10621310	Theory of Machines	3	10621210
10621335	Engineering Materials for Mechatronics	2	10223101; 10621200
10621414	Mechanical Vibrations	3	10621210; 10221202
10621416	Mechanics of Machines and Vibrations Lab.	1	10621414; 10621310
10621461	Thermo-Fluids and Heat Transfer Lab	1	10621261
10626251	Engineering Numerical Analysis	3	10636111; 10221202
10631207	Introduction to Engineering Management	3	

Course #	Course Title	Credit	Prerequisite
10631301	Engineering Economy and Feasibility Studies	3	10221102
10631340	Manufacturing Processes I	3	10621335
10636111	Computer Programming	3	
10636215	Discrete Mathematics	3	10636111
10636221	Digital Circuits Design I	3	
10636291	Digital Circuits Design I (Lab)	1	10636221
10636374	Microprocessor for Mechatronics I	3	10636221
10636476	Microprocessor for Mechatronics Lab	1	10636374
10641292	Electrical Circuits	3	10222102
10641293	Electronics	3	10641292
10641294	Electrical and Electronics Circuits Lab	1	10641291 or 10641293
10641391	Electrical Machines	3	10641291 or 10641292
10641392	Electrical Machines Lab	1	10641391
10641411	Power Electronics	3	10641293
10651372	Mechatronics Programming	2	10636111
10651462	Machine Element Design	3	10621214
10651471	Control Systems I	3	10641291; 10621414
10651481	Transducers and Interfacing	3	10621214; 10641391
10651482	Transducers and Interfacing Lab	1	10651481
10651483	Hydraulic and Pneumatic Systems	3	10621261; 10621310
10651484	Internship	3	completion of 120 credits
10651571	Control Systems Lab.	1	10651471
10651572	Programmable Logic Controllers	3	10636374
10651585	Graduation Project I	2	completion of 120 credits
10651682	Robotics	3	10621301 or 10651372; 10621310
10651683	Robotics and Automation Lab.	1	10651682
10651684	Design of Mechatronics Systems	3	10651471; 10651481
10651686	Graduation Project II	3	10651585
11032101	English for the Workplace	0	completion of 107 credits

Electives:

A minimum of nine (9) credit hours of engineering coursework are required.

Course #	Course Title	Credit	Prerequisite
10621413	Applied Mathematics for Engineers	3	10221202
10621513	Finite Elements Analysis	3	10621414; 10651372
10636474	Microprocessor for Mechatronics II	3	10636374
10641591	Electric Drive	3	10641391; 10641411
10651485	Internship II	3	10651484 in parallel with Dept. approval
10651573	CAD/ CAM Systems	3	10651462; 10631340
10651574	Control Systems II	3	10651471
10651675	Fuzzy Logic Control	3	10651471
10651681	Automation and Production Systems	3	10621210; 10631340
10651687	Mobile Robots	3	10651682
10651688	Special Topics in Mechatronics	3	Dept. approval

Free Courses (2 credit hours)

The student chooses freely two, two-credit hour courses offered by faculties other than the Faculty of Engineering.

1. Internship

The student can sign up for an internship upon the successful completion of 120 credit hours and according to one of the following two options:

- For a period of eight successive weeks during summer semester, or for an equivalent period of training during the first or the second semester. In all cases, the student should complete a minimum of 320 training hours. In this option, the student should register for Internship 1 0651484.
- For a period of sixteen successive weeks: This option is to give opportunity to some students to take only Internship I 0651484 and Internship II 0651485 concurrently during a fall or spring semester with a total of 6 credit hours. Students are selected according to their achievements and the availability of a proper training opportunity for a full semester. This option is conditional on department approval.

Course Description

10221201 Calculus III

Topics covered in this course include parametric equations and polar coordinates, vectors in R^2 and R^3 and surfaces, vector valued functions, partial differential with applications and multiple integration, and vector calculus and its aspects.

10221202 Engineering Mathematics

This course covers mainly two topics: linear algebra and ordinary differential equations. Linear algebra deals with matrix operations, linear equations and their solution, vector space and linear transformation, and eigen values and eigenvectors. The second topic, on differential equations, deals with partial differential equations, solution of 1st order and 2nd order linear and nonlinear ordinary differential equations. The course ends with the study of Fourier series and transform, and Laplace transform.

10221230 Statistics and Probability for Engineers

This course covers the following topics: set theory, relative frequency and probability; joint probability and independent events; random variables, distribution functions, density functions, and Gaussian random variables; multiple-random variables, joint-distribution functions, joint-density functions, conditional distribution functions, and central limit theorem; random processes, stationary, and independence; correlation functions, covariance, and Gaussian random processes; random processes spectral characteristics, power density spectrum, cross-power spectrum, relation between correlation functions and power density spectra.

10601110 Statics

This course introduces the students to the fundamental concepts of vectors, equilibrium of force system for particles and rigid bodies. It also looks at the application of principles of statics to structures, axial force, shear and bending moments, friction, centroid and the moment of inertia.

10606102 Engineering Drawing

This course covers several topics, including basic drawing techniques and materials used, orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

10621100 Engineering Workshop I

Students in this course are expected to master basic skills in fields of manual sheet metal fabrication, welding processes, and household electric circuits. Students should also do individual practical exercises.

10621200 Engineering Workshop II

This workshop focuses on theoretical and practical development of basic skills in the fields of metal machining, sand casting, metal forming and welding. Students are expected to do individual practical exercises.

10621214 Strength of Materials

This course begins with an introduction to the mechanics of deformable bodies; the concepts of stress and strain, the classification of materials behavior, stress-strain relations and generalized Hooke's law. It then moves to applications of engineering problems, involving members under axial loads, torsion of circular rods and tubes, bending and shear stresses in beams/members, combined loading and stress transformation. The course ends with stress in thin- and thick-walled cylinders, curved beams, shrink and press fits, stresses in rotating disks, contact stresses; and failure theories under static loading.

10621210 Dynamics

Topics covered in this course include the kinematics of particles, two- and three-dimensional dynamics of rigid bodies, force and acceleration, work and energy, impulse and momentum. It concludes with an introduction to vibrations.

10621213 Mechanical Drawing

Topics taught in this course include auxiliary views; temporary fasteners and springs and their construction and standards; power screws and welded symbols; dimensioning, tolerance, limits and fits using ISO system; detail and working drawing and assembly drawing.

10621261 Principles of Thermo-Fluids and Heat Transfer

This course looks at the basic principles, concepts and definitions of thermodynamics, the properties of pure substances, the 1st and 2nd laws of thermodynamics, fluid mechanics and heat transfer, basic principles of fluid dynamics, conservation law, dimensional analysis and external and internal flow in pipes.

10621310 Theory of Machines

Students in this course learn how to conduct kinematic analysis of mechanisms; and velocity and acceleration polygons. They are also introduced to static and inertia force analysis of machinery; dynamic analysis of cams, and flywheels and balancing of machines.

10621335 Engineering Materials for Mechatronics

Students in this course are introduced to mechanical properties of metals and strengthening mechanisms; failure of solids; fracture, fatigue, and creep; phase diagrams; metal alloys and thermal processing of metal alloys. The course concludes with an introduction to corrosion.

10621414 Mechanical Vibrations

This course covers the following topics: properties of oscillatory motion; derivation of governing differential equations; free and damped vibrations; harmonically-excited motion, rotating and reciprocating unbalance, support motion; vibration measurements and vibration isolation; transient vibrations; and free and forced vibrations in multi-degrees-of-freedom systems. The course ends with an introduction to vibration absorbers and continuous systems.

10621416 Vibrations and Mechanics of Machines Laboratory

Students conduct practical experiments related to the given topics in the courses of vibrations, theory of machines and machine design.

10621461 Thermo-Fluids and Heat Transfer Lab

This course looks at experiments applied to heat transfer, thermodynamics and fluid mechanics.

10626251 Engineers Numerical Analysis

The course aims to clarify the basic skills of numerical methods such as error calculations, solving linear and non-linear equations and their systems, numerical differentiation and integration, solving ordinary differential equations and their systems, curve fitting and interpolation. Students will be drilled on special software related to numerical methods.

10631207 Introduction to Engineering Management

This course provides students with basic knowledge of the topics of human resources management, engineering profession ethics, project management, and technical report writing. It also covers the principles of organizational management, such as organizing, controlling, staffing and motivation in a way that reflects the importance of these topics in the current globalized markets.

10631301 Engineering Economics and Feasibility Studies

This course aims at giving engineering students a practical background about the basics of economic analysis and evaluation of cash flow diagrams, the breakeven point and expenses reduction. The course also aims at teaching students the meaning of the present and future value of money. Finally, the course teaches the basics of feasibility studies for engineering projects.

10631340 Manufacturing Processes I

This course is a study of basic manufacturing processes, including the casting process, the bulk deformation process, the chip removal process, and joining processes. The course also offers an introduction to numerical control machining.

10636111 Computer programming

This course covers basic programming concepts, including writing, executing, and debugging programs. It also looks at concepts of modularity and encapsulation, focusing on modules and abstract data types and covers some basic data structures.

10636215 Discrete Mathematics

This course covers the mathematical topics most directly related to computer engineering. Topics include logic, relations, functions, basic set theory, countability and counting arguments, proof techniques, mathematical induction, graph theory, combinatorics, discrete probability, recursion, recurrence relations, and number theory. Emphasis will be placed on providing a context for the application of the mathematics within computer engineering.

10636221 Digital Circuits Design I

Students in this course receive instruction on Boolean algebra, number systems, logic gates, simplification, combinational logic circuit design; combinational circuits, sequential circuits, flip-flops, counters, registers (serial, parallel, shift), state machines design and synchronous and asynchronous systems.

10636291 Digital Circuits Design I (Lab)

This course is an introduction to integrated circuits, introduction to transistor-transistor logic (TTL) and CMOS circuits' IC characteristics; Boolean function design and implementation; seven segment display; decoders, shift registers, ROM, RAM; monostable and astable multi-vibrators, and 555 timing timer; sequential circuits design.

10636374 Microprocessor for Mechatronics I

This course traces the history and development of the 80X86 microprocessors and the 80X86 architecture and central processing unit. It also introduces memory addressing and data formats and address/data and control buses. It also focuses on the CPU/Memory interface, the Instruction set, and addressing modes and assembly language programming.

10636476 Microprocessor for Mechatronics Lab.

This course begins with an introduction to programming of the 8088/8086 kit and writing practical assembly language programs. It then moves to interfacing experiments on peripherals with applications to DAC, RS232 communication,

LED Matrix, LCD, ADC, DC motor, and step-motor. Students are expected to carry out a practical project in the field of microprocessor interfacing.

10641292 Electrical Circuits

Topics covered in this course include units, definitions, independent source, dependent source, Ohm's law, Kirchoffe's laws, and division rule; Nodal analysis; Mesh Analysis; Linearity and superposition; Thevenin's and Norton's theorems; inductance and capacitance; source free RL and RC circuits; the unit-step forcing function; RLC circuits; the sinusoidal steady-state response; and the phase concept. The course ends with an introduction to alternating current circuits, and single- and three-phase circuit analysis.

10641293 Electronics

This course covers the following topics: semiconductor materials; p-n junction and p-n junction diode; DC analysis and models; Zener diodes and Schottky diodes; diode circuits: rectifiers, regulators, clippers, clampers, and multiple diode circuits; BJT transistors: basics, DC analysis, biasing, and applications; BJT amplifiers and its characteristics: common collector, common base, and common emitter; and the field-effect transistor: MOSFET and its DC analysis with applications.

10641294 Electrical and Electronics Circuits Lab.

Course topics include laboratory equipment; Ohm's law, series-parallel resistances, Kirchoff's laws, voltage and current divider rules, delta-wye transformations; Thevenin's and Norton equivalents, superposition and reciprocal theorems, maximum power transfer and three-phase circuits.

10641391 Electrical Machines

This course begins with a review of magnetic fields and circuits; single- and three-phase transformers; electromechanical energy conversion; DC-machines: DC-generators and DC-motors; starting DC-motors and speed control; AC-machines: single- and three-phase induction motors and three-phase synchronous machines.

10641392 Electrical Machines Lab

Students in this course do laboratory experiments on single- and three-phase transformers; electromechanical energy conversion, DC-machines: DC-generators and DC-motors, starting DC-motors and speed control, AC-machines: single- and three-phase induction motors and three-phase synchronous machines.

10641411 Power Electronics

Topics covered in this course include the thyristor, power electronics circuits, diode circuits and rectifiers, controlled rectifiers, static switches, AC- voltage controllers, and DC choppers.

10651372 Mechatronics Programming

This course is an introduction to MatLab programming language for matrix operations, and solution of linear equations; programming in MATLAB (Programs and Functions m-files) and the software library of m-defined functions; graphical representation of data structures and analysis of mechatronics systems using SIMULINK software. Students will learn how to build and analyze 3D Dynamic models and accomplish stress analysis using solid works and Visual Nastran 4D and/or any other equivalent design software.

1651462 Machine Element Design

Students are introduced to transmission mechanisms and kinematics, types of joints, pulleys and belts, gears and gear trains, cams, clutches brakes flywheels, bolts, shafts, bearings, keys and springs.

10651471 Control Systems I

Students receive instruction on open and closed loops (feedback) control systems; modeling of physical systems: electrical, mechanical, hydraulic and pneumatic systems; linearization of nonlinear systems; system representations: system block diagrams and signal flow graphs; state variable models; feedback control system characteristics; performance of feedback control systems; Routh-Hurwitz stability; steady state error coefficient; Routh locus method. Students also receive an introduction to frequency response.

10651481 Transducers and Interfacing

This course allows students to learn about static, dynamic and statistical characteristics of measurement system elements; loading effects in measurement systems; sensing elements: resistive, capacitive, inductive, electromagnetic, thermoelectric, elastic, piezoelectric and electrochemical sensing elements. They also learn about optical and ultrasonic measurement systems; signal conditioning elements: deflection bridges and amplifiers and signal processing elements: analog to digital (A/D) conversion.

10651482 Transducers and Interfacing Lab.

In this lab, students do experiments on transducers and their construction; experimental identification of static characteristics of sensing elements: ideal straight line, non-linearity, sensitivity, hysteresis, resolution, and error bands. They also conduct experiments on loading effects in measurement systems as well as experiments on deflection bridges and amplifiers and analog to digital conversion and data acquisition.

10651483 Hydraulic and Pneumatic Systems

This course begins with an introduction to fluid power systems design and operation, characteristics of hydraulic fluids and standard tests; characteristics and selection of positive and non-positive displacement pumps; characteristics

and standards of filters; Linear and rotary hydraulic actuators; characteristics and design of hydraulic and pneumatic distribution systems. The course concludes with a look at hydraulic and pneumatic control valves and design, sizing and analysis of hydraulic and pneumatic circuits.

10651484 Internship I

This is an 8-week practical training course in an engineering institution/office. Approval by the department is a must. The student should register for the course upon completion of the fourth year of study, or successful completion of 128 credit hours of program's compulsory and elective requirements.

10651571 Control Systems Lab

This lab focuses on open and closed loop control systems with applications to level and flow of fluids, and electrical, electromechanical, and thermal systems; position and speed control. Students are introduced to principles of controlling servomechanisms and stability tests. Students make observations of system performance under the action of proportional (P), integral (I), derivative (D) compensation controllers and time and frequency response measurements. They also have first hand observation of computer simulation of control systems, using MATLAB and SIMULINK software.

10651572 Programmable Logic Controllers

Course topics include principles and application of programmable logic controllers (PLC); hardware components and construction of PLCs; general PLC programming procedures; programming ON-OFF inputs to produce ON-OFF outputs; creating ladder diagrams from process control descriptions; PLC timer and counter functions; intermediate functions: arithmetic, number comparison, skip and master control relay functions, and data systems; advanced functions: utilizing digital bits, sequencer and matrix functions; alternate programming languages; analog PLC operation and networking PLCs.

10651585 Graduation Project I

In this course, students are expected to do a literature review of the selected project topic and prepare a working outline of the project's practical implementation.

10651681 Automation and Production Systems

This course is an introduction to industrial automation; manufacturing operations, material handling and identification technologies (Material handling, material transport systems, storage systems, and automatic data capture). Manufacturing systems include single-station manufacturing cells, group technology and cellular manufacturing, flexible manufacturing systems, manual assembly lines, transfer lines and similar automated manufacturing systems, and automated assembly systems.

10651682 Robotics

Students receive instruction on robot fundamentals, robot kinematics: position analysis; differential motions and velocities (Jacobian and inverse Jacobian); dynamic analysis and forces; trajectory planning; actuators and sensors of robotic systems.

10651683 Robotics and Automation Lab.

Students in this course learn about programming and simulation of robot industrial operations, programming with practical applications of the CNC-Lathe and CNC milling machines; and simulation of industrial processes using standard PLCs. They also do practical experiments on industrial automation with applications to assembly stations and product sorting laboratory equipments.

10651684 Design of Mechatronics Systems

The course begins with a background on mechatronics systems design; mathematical modeling and computer simulation of mechatronics systems; and performance and analysis of mechatronics systems. Students will do exercises and carry out comprehensive projects, including combinations of electrical, mechanical and computer technologies to produce functional mechatronics systems.

10651686 Graduation Project II

Students will practice practical implementations of theoretical and experimental knowledge gained from Graduation Project I. Formal and scientific written reports of the work done in Parts I and II, and a presentation with public defense of the graduation project, are expected from each student.

10621413 Applied Mathematics for Engineers

Students are introduced to series solutions of differential equations, special functions (Legendre, Frobenius, Bessel, etc.); Fourier Series, integrals, and transforms; partial differential equations and complex numbers.

10621513 Finite Elements Analysis

This course begins with an introduction to finite element methods; integral formulation and variation methods; modeling principles and mesh specification of one-dimensional problems: derivation of element equations, assembly of element equations, imposition of boundary conditions, solution of equations, and error analysis. The course ends with an introduction to two dimensional problems and computer simulation for solving engineering problems.

10636474 Microprocessor for Mechatronics II

Students in this course learn about clock and timing of control signals, bus operations, memory interfacing; I/O interface and peripheral devices;

interrupts; serial and parallel port interface; configurable I/O ICs; I/O assembly programming.

10641591 Electric Drive

This course introduces students to the electric drive of AC and DC electrical machines, sizing, selection and performance of AC and DC machines. They also learn how to start circuits and make a smooth start of electric machines. They also learn about analog, digital, and pulse width modulation (PWM) of speed control of ac and dc electrical machines.

10651485 Internship II

The student can register for the course in parallel with Internship I (0651484), after receiving department's permission. These two courses together are four months of practical training in a special engineering institution approved by the department.

10651573 CAD/ CAM Systems

Students in this course learn about the principles of computer aided design and manufacturing; computer aided design include transformation and manipulation of objects, description of curves and surfaces, solid modeling, and optimization techniques. The course also includes implementation of finite element method techniques for analysis of trusses, heat conduction, and dynamics. The course concludes with an introduction to computer-integrated manufacturing and implementation of a CAD/ CAM system.

10651574 Control Systems II

Topics covered in this course include frequency response methods; stability in frequency domain; design of feedback control systems; design of state variable feedback systems. The course ends with a look at digital control. Students are drilled on computer exercises using MATLAB software.

10651675 Fuzzy Logic Control

This course begins with an overview of conventional control systems design and an introduction to fuzzy control systems. General fuzzy systems include linguistic variables, values and rules. Then the course moves to fuzzy sets, fuzzy logic and the rule-base and fuzzification, and defuzzification processes; mathematical representation of fuzzy systems; and Takagi-Sugeno fuzzy systems. Simulation and case studies of fuzzy control systems. The course concludes with an introduction to fuzzy identification and estimation.

10651687 Mobile Robots

This course introduces students to mobile robots with applications; mobile robots hardware and sensing: visual and non-visual sensors and algorithms. It also looks at control of mobile robots and at computational methods of reasoning and reasoning about space and operating environment. Students also

learn about path following and obstacles avoidance algorithms; navigation in known and unknown environments; implementations of fuzzy logic control to mobile robot navigation.

10651688 Special Topics in Mechatronics

This course highlights current trends and developments in the field of mechatronics engineering.

Department Staff Members

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{ Computer Network and Information Security Programme }

Programme Vision

The network and information security programme aims to establish a pioneering role in the fields of teaching, training and researching computer networks. In addition, to information and network security providing a distinguished world-class education.

Programme Mission

The message of the programme is to develop the students' capabilities in the following areas: classical network protocols and security, principles of wireless networks and internet communication along with other technologies that form the basis for computer networks and information security. The students should be capable of designing, implementing and analysing networks and detecting cyber-attacks and securing information networks at the component, system and enterprise levels. The programme graduates will fulfill a much-needed skill in the national development plan and further satisfy the local and international markets demands.

Programme Educational Objectives

The general objectives of the programme is to develop the students' essential knowledge and skills in the field of networks and information security so as to provide high quality solutions that address the needs in the aforementioned field. It is expected to support and enhance the Telecommunication and IT sector and secure it from attacks and intrusions. The programme objectives can be summarised as follows:

- Produce graduates who can provide viable solutions to problems facing the development, utilization and maintenance of computer networks. They will also be proficient in the methods employed for securing computer networks and protecting the exchanged information at national and international levels.
- Educating the students in modern technological tools particularly in the field of computer networks and information security.
- Producing graduates who can keep up with the ever-changing fields of information technology, computer networks and the methods utilized for securing information.

Programme Intended Learning Outcomes (ILOs)

The graduated students will be able to

1. Apply knowledge of computing and mathematics appropriate to the discipline
2. Analyse a problem, and identify and define the computing requirements appropriate to its solution
3. Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs
4. Function effectively as a team to accomplish a common goal
5. Understanding of professional, ethical, legal, security and social issues and responsibilities
6. Communicate effectively with a range of audiences
7. Analyse the local and global impact of computing on individuals, organisations and society
8. Recognise the need for and an ability to engage in continuing professional development
9. Use current techniques, skills and tools necessary for computing practice.

Degree Requirements

Computerized network and information security student must pass at least (125) credit hours to get a B.Sc. Degree in computerized network and security (CNS) distributed as follows.

Description		Credit Hours
University Requirements	Obligatory	18
Programme Requirements	Obligatory	76
	Elective	12
	Total	88
Support Courses		15
University Free Courses		4
Total		125

University Requirements

Computerized network and information security student must pass (18) credit hours as follows:

Course No	Course name	Cr.hr
1000101	Islamic Culture	3
1000102	Arabic Language 1	3
1000103	English Language 1	3
1000105	Palestinian Studies	3
1000108	Community Service	1
1000117	Communication Skills	1
1000127	Introduction to Computers	1
1000322	English Language 2	3
Total		18

Program Requirements

Computerized network and information security student must pass (88) credit hours as follows:

Obligatory Courses, (76) credit hours:

Course No	Course Name	Cr.hr	Pre-requisites
10671241	Digital Logic Design	3	10221111
10681101	Principles of Programming & Problem Solving	3	---
10681102	Fundamentals of Object Oriented Programming	3	10681101
10681204	Web Programming I	3	10681102
10681205	Introduction to Computer Architecture	3	10681210
10681210	Data Structures	3	10681102
10681220	Database design & Programming	3	10681102
10681245	Web Programming II	3	10681204
10681255	Database Administrations	3	10681220
10681307	Software Engineering	3	10681210
10681345	Computer Networks	3	10686221
10681371	Operating Systems	3	10681205
10681480	Distributed Systems	3	10681203
10686221	Network Transmission Technology	3	10671241
10686235	Information Security and Ethics	3	10686213
10686325	Routers and Switches	3	10681354
10686326	Routers and Switches Lab	1	10686325
10686331	Cryptography and Network Security	3	10681345 + 10686235
10686332	Network Security Lab	1	10686331
10686334	Wireless Systems and Security	3	10686331
10686335	Security Policies and Procedures	3	10686235 + 10681345
10686341	Network Administration	3	10681345
10686342	Network Administration Lab	1	10686341
10686370	Internship	3	----
10686427	Network Design and Simulation	3	10681345
10686428	Network Design and Simulation Lab	1	10686427
10686471	Graduation Project	3	----
10686487	Ethical Hacking	3	10686235

Elective Courses, (12) credit hours:

Course No	Course Name	Cr.hr	Pre-requisites
10686381	Network Programming	3	10681345
10686382	Voice over IP Engineering	3	10681345
10686383	Optical Network	3	10681345
10686384	High Speed Network	3	10681345
10686385	Multimedia Networking	3	10681345
10686481	Advanced Internetwork Routing And Switching	3	10686325
10686482	Advanced Wireless Networking And Security	3	10686334
10686483	Web Services Security	3	10681210
10686484	Advanced Topics in Distributed Systems	3	10681480
10686485	Application Development for Mobile Devices	3	10686334
10686486	Network Intrusion Detection	3	10686331
10686492	Network Firewalls	3	10686331
10686488	Special Topics in Networking And Security	3	10686331
10686489	Network Management	3	10686427 and 10681480
10686491	Protocol Design and Validation	3	10686427

Support Courses (15 credit hours)

Computerized Information Systems student must pass (15) credit hours as follows:

Course No	Course Name	Cr.hr	Pre-requisites
10221111	General Physics for information technology	3	---
10671201	Technical Report Writing	3	1000103
10671231	Discrete Mathematics	3	10681101
10686111	Calculus for for information technology	3	-----
10686213	Probability & Queiuing Theory	3	10671231
Total		15	

University's Free Courses (4 credit hours)

Computerized Information Systems student must pass (4) credit hours chooses from any of the university's free courses, as follows:

Courses Description:

10671241 Digital Logic Design

In this Course, students are introduced to: Boolean Algebra, the minimization of Boolean functions using Karnaugh Map and Quine-Mc-Cluskey methods, the design of Combinatorial Circuits, the design of Complex Digital Circuits, Sequential Circuits, State Assignment and Minimization, the design of a simple computer incorporating general registers, common addressing modes and conditional instructions.

Pre-request: None

This course introduces the fundamental concepts of programming, problem-solving, and logical thinking. It includes I/O; expressions and arithmetic, if, while and for statements; one-dimensional arrays, string handling, functions, scope, recursion and matrices.

10681102 Fundamentals of Object Oriented Programming

This course introduces the principles of object oriented programming. The student will understand the effect of using OOP in the software development life cycle. Learn the basic fundamentals of OOP, understand class reusability, understand hiding complexity, building own package of classes, developing systems with GUI, learn exception & error handling concepts, learn event handling concepts, streaming and file management concepts.

10681204 Web Programming I

This an introduction to internet applications, basic concepts of web programming, HTML, XHTML, Javascript, server-side programming and scripting (PHP, XML) and web site creation case studies.

10681205 Introduction Computer Architecture

Introduction to computer organization. Computer instruction set. Machine language. Data processing. Arithmetic unit: Carry look-ahead adders, Subtractors, and shifters. Logic unit. Combinational and sequential multipliers and dividers. Floating-point number representation and arithmetic.

10681210 Data Structures

This course is an introduction to the various Data Structures based on object-oriented methodology. It focuses on data structures that help students to store large data in an efficient way. The course covers: lists, stacks, queues, heaps, trees, search trees, hash tables, the analysis and implementation of data structures, recursion, sorting and searching.

10681220 Database design & Programming

This course introduces database design and creation using a DBMS product and develops SQL programming proficiency. Topics include data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. In addition to manipulating multiple tables, advanced queries, screens and reports, linking, and command files. As well SQL programming proficiency which includes data definition, data manipulation, and data control statements as well as on report generation

10681245 Web Programming II

In this class, students will utilize the knowledge learned in previous classes to create server-side PHP programs used to manipulate Web applications, files, email and databases. Students will utilize project planning skills, as well as utilize problem-solving techniques to write effective applications. Strong emphasis will be put on understanding the interaction between user agents and server side code, data validation, the need for secure transactions, the tracking of site visitors and email communications.

10681255 Database Administrations

The aim of this course is to teach the students the principles of the administration phase for the DBMS. Topics include physical database design and tuning, applying different security features, transaction management, concurrency control, and backup crash recovery.

10681307 Software Engineering

This course examines the Software Development Process: analysis, specification, design, implementation, integration, testing and maintenance. It covers Software Processes, Project Management, People Management, Software Requirements, System Models, Architectural and Detailed Design, User Interface Design, Programming Practices, verification and validation and software evolution. Structured Software Engineering Techniques will also be examined.

0681345 Computer Networks

The principles and practice of computer networking, with emphasis on the Internet. The structure and components of computer networks, packet switching, layered architectures, TCP/IP, physical layer, error control, window flow control, local area networks (Ethernet, Token Ring; FDDI), network layer, congestion control, quality of service, multicast.

10681371 Operating Systems

This course examines operating system design concepts, data structures and algorithms, and systems programming basics. The topics to be covered (tentatively) include: Computer and operating system structures. Process and

thread management. Process synchronization and communication. Memory management. Virtual memory. File system. I/O subsystem and device management. Selected examples in networking, protection and security.

10681480 Distributed Systems

This course examines the fundamental principles that are vital to the construction of distributed systems. Topics include models of distributed systems, synchronization, mutual exclusion, fault tolerance, naming, group communication, transactions, and distributed algorithms. It also examines higher level abstractions such as distributed file systems; process scheduling and peer-to-peer overlay networks.

10686121 Network Transmission Technology

This course will familiarize students with the analogue and digital transmission, modulation and demodulation, transmission media, data encoding, synchronous and asynchronous transmission, digital carriers, error control, multiplexing, circuit and packet switching, open system standards

10686235 Information security and Ethics

Covers the concepts of information assurance, explicit and implicit policy design, use of basic computer security mechanisms, authentication, access control, policy types. Topics include: Design and use of basic network security mechanisms, asset identification and valuation, determining threats to assets and their vulnerabilities, prioritizing and selecting countermeasures, implementing and deploying countermeasures, and continuing maintenance and assessment of security mechanisms. In addition it covers cyber ethical standards for information system users and administrators, and their role as a driver in developing information system security policies.

10686325 Routers and Switches

This course provides an introduction to routers and data networks. Students will be exposed to Cisco hardware and they will learn how to install, configure, manage, and troubleshoot routers and switches. Students develop practical experience in skills related to configuring LAN's, WAN's, routing protocols and network troubleshooting

10686326 Routers and Switches Lab

This course introduces the student to practical networking experiences within a laboratory environment. Students will study router and switch basics, configure routers, investigate routing protocols, configure switches, develop access lists, and troubleshoot routing technologies

10686331 Cryptography and Network Security

Introduction to the principles of number theory and the practice of network security and cryptographic algorithms. Topics include: Divisibility and the

Greatest Common Divisor, Euclidean Algorithm, modular arithmetic and discrete logarithm, Primes, primality testing, Chinese Remainder Theorem, cipher) Conventional or symmetric encryption (DES, IDEA, Blowfish, Twofish, Rijndael) and public key or asymmetric encryption (RSA, Diffie-Hellman), key management and exchange, hash functions (MD5, SHA-1, RIPEMD-160, HMAC), digital signatures, certificates and authentication protocols (X.509, DSS, Kerberos), electronic mail security (PGP, S/MIME), web security and protocols for secure electronic commerce (IPSec, SSL, TLS, SET).

10686332 Network Security Lab

This course provides in-depth laboratory exercises using commercial-off-the-shelf (COTS) technology. Topics include: eavesdropping, implementing the attacks against ARP, IP, ICMP, TCP, and UDP protocols, exploiting DNS vulnerabilities to launch Pharming attacks, exploiting cross-site scripting vulnerabilities and buffer overflow, implementing a simplified version of IPSec protocol. In addition students will configure network servers, routers, hubs, firewalls and intrusion detection devices to discover the effect each device can have on overall system security.

10686334 Wireless Systems and Security

Principles of wireless communications and how they differ from wired communications. Fundamental concepts including transmission and mitigation techniques (e.g., modulation and coding, propagation, interference, and antennas) for wireless systems, multiplexing techniques, wireless system architectures, mobility management, security, protocols, and location technology. Systems include cellular phone networks (e.g., cdma2000, UMTS), wireless local area networks (e.g., IEEE 802.11g), personal area networks (e.g., Bluetooth), fixed-point broadband wireless (e.g., WiMAX) and satellite systems.

Security Policies and Procedures

This course covers how to identify emerging security risks and implement highly secure networks to support organizational goals. Discussion of methodologies for identifying, quantifying, mitigating and controlling risks. Students implement a comprehensive IT risk management plans (RMP) that identify alternate sites for processing mission-critical applications, and techniques to recover infrastructure, systems, networks, data and user access. The course also discusses related topics such as: disaster recovery, handling information security; protection of property, personnel and facilities; protection of sensitive and classified information, privacy issues, and criminal terrorist and hostile activities.

10686341 Network Administration

This course will cover the fundamentals of current WINDOWS/UNIX server systems and network administration. Topics to be covered include: domain administration; file system management; networked printers; user management; and workstation configuration.

10686342 Network Administration lab

This is a course where you actively learn by doing, providing the student with the skills necessary to manage a WINDOWS/UNIX-based server in a large and complex networking environment

10686370 Internship

During this course, the student will join an association, or a company that is directly related to his/her field of study. The student will spend 260 hours of practical training in a company. The academic staff from the department will continuously follow up the training by making regular field visits to training locations.

10686427 Network Design and Simulation

Data network design issues and applications, point-to-point network design, multipoint network design, data collection and verification, protocol selection, performance considerations and RFP development. Network design tools such as ITGURU and OPNET are used for network design and simulation. Use of simulation results to design a private line or packet switched based data communications network.

10686428 Network Design and Simulation Lab

This lab will cover performance analysis for communications networks. It is used to model networks, their control algorithms and workload. The simulation of the operation of the network and provides measures of network performance. Network Design and Simulation Lab add provides a practical flavor to the course and enable students to observe the operation of an Internet comprising dissimilar networks and protocols.

10686471 Graduation Project

The course involves participation in ideas generation, idea selection, idea refinement and analyses of a senior project of substantial interest to CNS industry. Student will define the requirements, write the proposal of the project, and then design and implement it under the supervision of CNS department member.

10686487 Ethical Hacking

This class will immerse the student into an interactive environment where they will be shown how to scan, test, hack and secure their own systems. The lab intensive environment gives each student in-depth knowledge and practical

experience with the current essential security systems. Students will begin by understanding how perimeter defenses work and then be lead into scanning and attacking their own networks, no real network is harmed. Students then learn how intruders escalate privileges and what steps can be taken to secure a system. Students will also learn about Intrusion Detection, Policy Creation, Social Engineering, DDoS Attacks, Buffer Overflows and Virus Creation.

10686381 Network programming

Introduction to Network Programming, Transport Layer Protocols, TCP, UDP, and SCTP, Client-Server Model, TCP Sockets, UDP Sockets, SCTP Sockets, I/O Multiplexing, DNS and Address Conversion, Threads Programming, RPC, Raw Sockets and Datalink Access. One or more of the following Internet Application Protocols and Case Studies: TELNET, HTTP, Authd, SMTP, POP, IMAP, FTP, and Web Programming (CGI, Servlets, and XML).

10686382 Voice over IP Engineering

Voice over IP (VoIP) engineering and design. Topics include call and session protocols such as SIP, H.323, IAX and MGCP; VAD and PLC; common practical issues such as call redirection; codec integration and quality of service measurements.

10686383 Optical Network

Optical fiber and transmission technologies. First generation optical networks (SONET). Optical access networks, broadcast and select networks. IP over optical networks, MPLS, and GMPLS. The light-path concept. Wavelength division multiplexing (WDM) technology. Wavelength routing networks, related protocols and architectures. Routing and Wavelength Assignment (RWA). Optical Time Domain Multiplexing (TDM) Networks.

10686384 High Speed Network

This course covers the current state-of-the-art in emerging high-speed network architectures, protocols and control algorithms. Topics include: basic architecture of packet networks and their network elements (switches, routers, bridges), and the protocols used to enable transmission of packets through the network. Network protocols: Ethernet, Internet, token rings, FDDI, Circuit-switched networks, ATM networks, switching, scheduling, naming, and addressing, routing, error control, flow control, traffic collection, modeling, and characterization, traffic management, connection admission control algorithms, and congestion control algorithms.

10686385 Multimedia networking

This introductory course in multimedia networking explores the interaction between multimedia data and the systems that need to support multimedia data such as audio and video. Topics include: compression technologies,

multimedia formats such as JPEG and MPEG, multimedia streaming over reservation-based and best-effort networks, multicasting of multimedia data, and systems support for multimedia computing.

10686481 Advanced Internetwork Routing and Switching

This course extends routing and switching knowledge with specific attention given to emerging trends. This course focuses on the concepts of traffic shaping, advanced exterior gateway routing protocols, label switching technologies, and quality of service. The necessary perspectives of integration of these topics into enterprise networks are addressed in both lectures and laboratory work.

10686482 Advanced Wireless Networking and Security

Provides advanced coverage of wireless networks and the special security problems they pose. Topics include measures taken to secure wireless personal area networks (PANs), wireless LANs, cellular wireless networks, and ad-hoc wireless networks. Threats, vulnerabilities and countermeasures specific to each type of network will be enumerated and studied in detail. Coverage includes the use of cryptography and cryptographic primitives in secure protocols, wireless device security, and security policy management. The treatment of ad-hoc wireless network security will cover secure routing protocols and intrusion detection systems.

10686483 Web Services Security

Address requisites, mechanisms, techniques, issues and security standards for web services security. Service Oriented Architecture concepts, Service Oriented Architecture technological foundations and related standards (SOAP and WSDL), Web Service security standardization framework , Transport layer security and related standards, Message-level security and reliability, and related standards, Application-level security, access control models, and related standards, Security policies and standards, Security for Business Processes, Identity Management and related standards, Security and privacy issue in Healthcare

10686484 Advanced Topics in Distributed Systems

Discusses advanced topics in Client/Server systems, Distributed Systems, and Network Computing. The focus is on examining strategies and algorithms to achieve design goals such as performance, reliability, scalability, consistency, and security in a distributed system. Topics include: Parallel Processing and Scheduling; Performance Modeling; Concurrency Control, Recovery in multi-user and distributed data servers; Security and Fault Tolerance; Embedded and Real Time distributed systems; Multimedia Storage and Transmission

10686485 Application Development for Mobile Devices

Focus on information system applications that run on top of wireless infrastructure such as multimedia messaging, mobile inventory control, location aware services including wireless technologies (GSM, CDMA2000, UMTS, 802.11, Bluetooth), mobile information systems and applications (M-Business, location-based services, wireless CRN), wireless information system challenges and architectures (security, reliability, mobility, power conservation, gateways, proxies), mobile application protocols (SMS, EMS, MMS, WAP), thin and thick client mobile application development (WML, VXML, Java, J2ME, J2EE, .NETCF, C#), and business case studies of mobile applications.

10686486 Network Intrusion Detection

The need for intrusion detection systems (IDS) is described. Several basic IDS design approaches and implementation methods are presented. Basic attack methods employed by network attackers and the resulting signatures are explained. The business case for justifying the acquisition of IDS is explored

10686492 Network Firewalls

Teaches the student the basic design of firewalls and provides actual hands-on experience with a popular enterprise firewall. The need for firewalls is also covered.

10686488 Special Topics in Networking and Security

Department Approval. Selected the current state-of-the-art topics in network and security.

10686489 Network Management

Appreciate the need for interoperable network management, understand general concepts and architecture behind standards based network management, understand concepts and terminology associated with SNMP and TMN, appreciate network management as a typical distributed application, get a feel for current trends in network management technologies, understand advanced Information processing techniques such as distributed object technologies, software agents and internet, technologies used for network management

10686491 Protocol Design and Validation

This course is an introduction to the formal design, specifications, and validation of communication protocols. Topics include: structured protocol design, protocol models, protocol validation, and protocol correctness requirements. Protocol modeling techniques such as FSM models and Petri net models are considered. Protocol verification techniques: Communicating FSM, reach ability analysis, verification using checking, protocol design

validation. A known verification modeling language such as PROMELA is considered. Specification and Description Language (SDL) may be considered

10221111 General Physics for information technology

This course covers, classical mechanics: Motion and Newton's Laws, Circular motion and applications, Energy transfer, and Linear and angular momentum, fluid mechanics, vibrations and wave motion, thermodynamics, electricity and magnetism: Gauss law, electric circuits, and Sources of magnetic fields, light and lasers and microscopes.

10671201 Technical Report Writing

This Course focuses on Report-Writing Skills. It is designed to equip students with the principles of Scientific and Business Writing. By the end of the Course, students are expected to have mastered the process of Professional Report-Writing.

10671231 Discrete Mathematics

The topics covered in this Course are: Set Theory, statements, mathematical induction, propositional and predicate logic, Boolean algebra, relations, functions, counting methods, Graph Theory, recurrence relations and examples applicable to Computer Science.

10686111 Calculus for information technology

This course gives an introduction to calculus. Topics include a review of algebra and functions, mathematical modeling with elementary functions, rates of change, inverse functions, logarithms and exponential functions, the derivative, differential equations, and Euler's method, review of trigonometry, modeling with trigonometric functions, geometric sums and series, and the Fundamental Theorem of Calculus

10686213 Probability and Queuing Theory

Probability principles and sets theory, random variables, operations on random variables, various distribution functions, introduction to random processes, weak stationary, correlation functions, linear processing, and estimation, Poisson processes and Markov chains, queuing analysis