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| Department of Building Engineering | |
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| **Integration of Building Systems (68460)** | |
| **Total Credits** | **3** |
| **major compulsory** | |
| **Prerequisites** | P1 : Principals of Architectural Design (68260) OR Principles of Architectural Design (68430) |

**Course Contents**

Student passes through his studies at the Department of Building Engineering much of intersections with other engineering disciplines, so there was a need to find a link between most of the information gathered by the student's courses which have been completed in the first 3 years of his study, in order to find a comprehensiveness view when solving the problems that may face the student in his career. This course is that cycle which makes a relationship between architectural design, structural design, environmental design, and mechanical design of building construction.

| | Intended Learning Outcomes (ILO's) | Student Outcomes (SO's) | Contribution |
|---|---|---|---|
| 1 | 1. An ability to integrate deferent buildings systems in one comprehensive design. | C | 10 % |
| 2 | 2. To be able to catch up intellectual and practical solutions in design. | H | 10 % |
| 3 | 3. To be able to deal with and follow local and international standards in building construction | A | 10 % |
| 4 | 4. An ability to identify, formulate, and solve engineering problems. | E | 30 % |
| 5 | 5. knowledge of designing buildings with high quality of beauty and functional performance. | B | 30 % |
| 6 | 6. To be able to work individually and in a team, both in studio and on site | G | 10 % |

**Textbook and/ or Refrences**

Students are asked to search the Library for each project to obtain the required information. Each Student is asked to present his small research using an oral or power point presentation, all of which will be considered in the final evaluation of the project.

| Assessment Criteria | Percent (%) |
|---|---|
| First Exam | 20 % |
| Second Exam | 35 % |
| Final Exam | 45 % |

**Course Plan**

| Week | Topic |
|---|---|
| 1-2 | First project: Students are going to propose a new design for an existing apartment, which needs an architectural, structural solutions to be adapted to a new function. |
| 3-8 | Second project: Students are going to design a multi-functional building on a real site where challenges such topography, surrounding buildings, etc. are imposed and need to be integrated in the structural and architectural design. |
| 9-16 | Third project: Students are going to design an administrative building. The project will be divided into phases: architectural and structural phase while the second one will focus on building technologies, environmental, mechanical and electrical aspects. |