

<b>Department of Civil Engineering</b>			
<b>Engineering Management (61472)</b>			
<b>Total Credits</b>	<b>3</b>		
<b>major compulsory</b>			
<b>Prerequisites</b>	P1 : Building Construction (61304) OR Building Construction (61371) OR Building Construction Engineering (68350) P2 : Economy & Engineering Management (65301) OR Eng'g Economics (61471)		
<b>Course Contents</b>			
This course is designed to prepare students to handle the practical and managerial tasks the engineer is exposed to in the real life. It covers the main concepts in the following field of planning, scheduling, organizing and controlling safety and quality control. This course 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; and updating, evaluation and use of schedule in cost crashing and resource leveling are explained. Application software systems are utilized			
<b>Intended Learning Outcomes (ILO's)</b>		<b>Student Outcomes (SO's)</b>	<b>Contribution</b>
1	1. Able to describe construction projects, understanding of time management, cost management, resources management and improve their management skill in conducting presentations and communication with others .	C	20 %
2	2. Able to Perform schedule computations to calculate project duration, activity early and late dates, and total and free floats and identify the critical path	E	30 %
3	3. Able to control, update, monitor project progress and recommend an appropriate course of action when the schedule must be shortened or crashed and evaluate construction project progress.	A	30 %
4	4. Able to analyze project cash flow, and minimize projects negative cash flow	E	20 %
<b>Textbook and/ or References</b>			
Construction project Scheduling and Control , Saleh Mubarak, 2010 1 Barrie, D.S. and Paulson, B.C., 1994, Professional Construction Management, 3rd edition, McGraw-Hill, Inc. N.Y 2 Clough, R.H. and Sears, G.A., 1991 Construction Project Management, 3rd edition, John Wiley & Sons, Inc. N.Y. 3 Smith, Currie & Hancock (2005) Common Sense Construction Law. 3 rd Edition, John Wiley and Sons, Hoboken, New Jersey. 4 Fisher, Roger and Ury, William (1991) Getting to Yes. 2nd Edition, Penguin Books, New York 5 Callahan, M.T., Quackenbush, D.G. and Rowings, J.E., 1992, Construction Project Scheduling, Irwin McGraw-Hill, Inc. N.Y1. Ahuja, Dozzi, and AbouRizk (1994) Project Management: Techniques in Planning and Controlling Construction Projects, John Wiley. 6. Guide to the Project Management Body of Knowledge (PMBOK), The Project Management Institute Standards Committee. 7. Harris R.B., 1978, Precedence and Arrow Networking Techniques for Construction, John Wiley & Sons, Inc. N.Y. 8. Project Management, The Managerial Process, Clifford F. Gray and Erick W. Larson, McGraw-Hill Co., 2000, ISBN: 0-07-365812-X. 9. Oberlender, G. D., Project Management for Engineering and Construction, Second Edition, McGraw-Hill Co., 2000. 10. Hinze, Jimmie (2006) Construction Planning and Scheduling. Prentice-Hall, New Jersey			
<b>Assessment Criteria</b>		<b>Percent (%)</b>	
First Exam		25 %	

Second Exam	25 %
Homeworks	10 %
Final Exam	40 %

### Course Plan

Week	Topic
1	Introduction of construction project planning and scheduling
2	Bar (Gantt) Chart
3	Basic Networks
4	Preparation and usage of the Critical Path Method (CPM)
5	Preparation and usage of Arrow Diagramming Method (ADM)
6	Preparation and usage of Precedence Diagramming Method (PDM)
7	MIDTERM EXAM 1
8	Resource Allocation
9	Resource leveling
10	Project Cash flow Analysis
11	Schedule updating and project control
12	Reports and Presentations
13	MIDTERM EXAM 2
14	Time cost trade off
15	Crashing the project
16	Final Exam