

<p>Kingdom of Saudi Arabia Ministry of Higher Education Qassim University College of Engineering</p>		<p>المملكة العربية السعودية وزارة التعليم العالي جامعة القصيم كلية الهندسة</p>
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CE 620 Construction Planning and Control

College: Engineering

Department: Civil

First: Course Definition

1- Course Code: CE 620

2- Units: 3

3- Semester:

4- Prerequisite:

5- Co-requisite:

6- Location (if not on main Campus):

Second: Course Objectives

- 1- Develop an understanding of the construction management including the contractor's role in reconstruction activities; the construction contract; plan, tools and equipment; methods engineering and value engineering.
2. Apply of CPM/PERT techniques to the planning, scheduling, and control of a construction project.
3. Developing teamwork and communication skills required for multi-disciplinary civil engineering projects.

1- Topics to be covered		
Subject	No of Weeks	Units
The Construction Industry	1	3
Construction Contracts	1	3
Procurement Methods	1	3
Management & Organization	1	3
Tendering Procedures	1	3
Managing the supply chain	1	3
The Planning Process	1	3
Programming Techniques	1	3

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Project Control Procedures	1	3
Controlling time, money & resources	3	9
Case Studies (city road project & highway project)	2	6

2- Course components (Total hrs in a semester): 42

Lecture	Exercise	Other
42	-	0

3- Intended Learning Outcomes of the Course (ILO's)

a. Knowledge

i) Description of the knowledge to be acquired:

- The roles and responsibilities and interaction between the parties involved with each stages of construction process.
- The estimating and quantity take- off process and how they are associated with construction cost control.
- Evaluation of subcontractors and how they participate in the selection process.
- The process of compiling a bill of materials and comparing actual materials costs to estimate.
- Insight in the process of planning labor crews and preparing for labor costs.
- Factors that affect the profitability of the project.

ii) Teaching strategies to be used to develop that knowledge

- Class lectures.
- Term projects.
- Student's presentations.
- Group discussion.

iii) Methods of assessment of knowledge acquired

- Exams.
- Quizzes.
- Homework assignments.
- Term projects.

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b- Cognitive (Intellectual) Skills

i) Cognitive skills to be developed

- The ability to convert a scope of work into scheduling activities.
- The ability to develop a building plan including preconstruction, construction and procurement activities.
- The ability to prepare, analyze and update bar charts and critical path method schedules.
- The ability to prepare and present schedule information.
- The ability to assign and analyze resource requirements of a project.
- The ability to perform time/cost trade off analyzes.
- The ability to justify claims for additional time.
- The ability to process schedule information in a computerized scheduling package.
- The ability to control costs by applying the earned value analysis and other progress metrics.

ii) Teaching strategies to be used to develop these cognitive skills

- Case studies analysis.
- Class lectures.
- Term projects.

iii) Methods of assessment of students' cognitive skills

- Students' seminars and presentations.
- Term projects.
- Written reports.

c. Interpersonal Skills and Responsibility

i) Description of the interpersonal skills and capacity to carry responsibility to be developed

- Communication skills.
- Decision making based on engineering analysis.
- Team work.

ii) Teaching strategies to be used to develop these skills

- Case studies analysis.
- Class lectures.
- Term projects.

iii) Methods of assessment of students' interpersonal skills and capacity to carry responsibility

- Term project.

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- Students' seminars and presentations.
- Written reports.

d. Communication, Information Technology and Numerical Skills

i) Description of the skills to be developed in this domain

- Literature research.
- Problems modeling.
- Utilization of computer applications in Construction, Planning and Control

ii) Teaching strategies to be used to develop these skills

- Class lectures.
- Case studies analysis.
- Computer lab sessions.
- Term projects.

iii) Methods of assessment of students numerical and communication skills

- Term projects.
- Written reports.
- Students' seminars and presentations

e. Psychomotor (if applicable) & Other Non-cognitive Skills

i) Description of the psychomotor or other skills to be developed and the level of performance required

- NA

ii) Teaching strategies to be used to develop these skills-

- NA-

iii) Methods of assessment of student's psychomotor skills

- NA
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4- Student Assessment Schedule

Serial	Assessment tool (test, group project, examination etc.)	Week due	Weight
1	Term Project – 1	3 rd	15 %
2	Mid Term Exam -1	7 th	15 %

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3	Term Project – 2	10 th	15 %
4	Term Project – 3	13 th	15 %
5	Final Exam	16 th	40 %

5- Student Support

- Providing electronic library of textbooks and scientific periodicals.
- Providing the necessary computer applications for the course.

6- Learning Resources

i) Essential Books (References)

- Cooke, B. and Williams, P. "Construction, Planning, Programming and Control", Wiley-Blackwell, 3rd Edition, 2009. ISBN-10: 1405183802, ISBN-13: 978-1405183802.
- Gahlot, P.S. "Construction Planning and Management", New Age International, 2007. ISBN- 81224041111, 978122404111.-

ii) Course Notes

- NA

iii) Recommended Books

- Hinze, J. "Construction Planning & Scheduling", Prentice Hall, 4th Edition, 2011.
- Kenley, R. & Sepannen, O."Location-Based Management for Construction: Planning, Scheduling and Control (Spon Research)", Routledge,1st Edition, 2009.
- Lester,A. "Project Management, Planning and Control: Managing Engineering, Construction and Manufacturing Projects to PMI, APM and BSI Standards". A. Butterworth-Heinemann, 5th Edition, 2006.
- Peurifoy, R. "Construction, Planning, Equipments & Methods", Mc Graw-Hill, 8th Edition, 2011.
- Popescu, C.M. & Charoenngam, C. "Project Planning, Scheduling, and Control in Construction: An Encyclopedia of Terms and Applications", John Wiley & Sons, 1995.

iv) Electronic Books & Web Sites:

- Scientific journals and forums.
- Instructor's instruction.

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- v) Periodicals**
- ASCE *Journal of Construction Engineering and Management*
 - International Journal of Construction Management
 - Journal of Cost Analysis and Management.

7- Course Evaluation and Improvement Processes

- i) Strategies for Obtaining Student Feedback on Effectiveness of Teaching**
- Students' questioners.
 - Students' evaluation of course and instructor.

- ii) Other Strategies for Evaluation of Teaching by the Instructor or by the Department**
- Public faculty seminars.
 - Assessment by external evaluators of students achievements.

- iii) Processes for Improvement of Teaching**
- Assessment of students' work by external examiners.
 - Analysis of students' evaluation of course and instructor.
 - Seminars by industry professionals.

- iv) Processes for verifying standards of student achievement**
- Check marking by an independent faculty member of a sample of student work.
 - Periodic exchange and remarking of a sample of assignments/exams with a external evaluator.

- v) Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**
- Assessment and evaluation of the level of achieving the course outcomes through a continuous improvement process (part of a quality assurance system established by the university),
 - Consequently, actions are to be taken to improve the course delivery when necessary.
 - Review of the course objectives, outcomes and curriculum every 2 years.

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