



Course Specification

(Bachelor)

Course Title: **Construction Planning, Scheduling and Control**

Course Code: **COE4405**

Program: **Bachelor of Construction Engineering**

Department: **Civil and Environmental Engineering Department**

College: **College of Engineering and Computing in Al-Qunfudhah**

Institution: **Umm Al-Qura University**

Version: **4th**

Last Revision Date: **15th January 2025**



Table of Contents

A. General information about the course:.....	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods.....	4
C. Course Content.....	4
D. Students Assessment Activities.....	5
E. Learning Resources and Facilities.....	5
F. Assessment of Course Quality.....	5
G. Specification Approval.....	6



A. General information about the course:

1. Course Identification

1. Credit hours: (3)

2. Course type

A. University College Department Track Others

B. Required Elective

3. Level/year at which this course is offered: (Level 9/year 5)

4. Course General Description:

This course, essential for students pursuing a Bachelor's degree in Construction Engineering, delves into the methods and techniques of planning, scheduling, and controlling construction projects. It aims to equip students with the skills necessary to manage construction timelines, resources, and costs effectively. Throughout the course, students will learn to create detailed project plans and schedules, apply resource allocation techniques, and use various control methods to ensure projects are completed on time and within budget.

5. Pre-requirements for this course (if any):

Project Cost Estimating (COE4403)

6. Co-requisites for this course (if any):

7. Course Main Objective(s):

1. To provide an in-depth understanding of construction project planning and its importance in the successful delivery of projects.
2. To familiarize students with various scheduling techniques and tools used in the construction industry.
3. To develop skills in creating and managing project timelines and budgets.
4. To learn methods for effective resource management and allocation.
5. To study the impact of project changes and delays on schedules and budgets.
6. To introduce students to software tools commonly used for construction scheduling and control.
7. To promote awareness of risk management strategies in construction planning.



8. To enhance problem-solving and decision-making skills in project management contexts.

9. To prepare students for real-world challenges in overseeing construction projects from inception to completion.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 credit hours	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	45
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		75

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Recall, define, and describe construction engineering concepts, principles, theories, and	K1	Interactive learning Self-directed learning	Midterm Exam, Final Exam, Homework, and Quizes



Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	procedures.			
1.2				
...				
2.0	Skills			
2.1	Apply engineering and scientific principles to identify, analyze, and solve complex construction engineering problems.	S1	Interactive learning Self-directed learning	Midterm Exam, Final Exam, Homework, and Quizes
2.2	Utilize critical thinking skills to analyze complex construction engineering issues and develop innovative, context-appropriate solutions that address current challenges in the field.	S2	Interactive learning Self-directed learning	Midterm Exam, Final Exam, Homework, and Quizes
2.3	Carry out various complex practical tasks, fieldwork, and procedures related to construction engineering by utilizing and adapting appropriate engineering materials, instruments, and software to analyze data and predict outcomes	S4	Interactive learning Self-directed learning	Midterm Exam, Final Exam, Homework, and Quizes



Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	effectively.			
3.0	Values, autonomy, and responsibility			
3.1				
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Construction Project Management	3
2.	Project Planning and Work Breakdown Structures (WBS)	6
3.	Scheduling Techniques	3
4.	Resource Allocation and Leveling	3
5.	Cost Estimation and Budgeting	3
6.	Mid Term Exam	3
7.	Project Monitoring and Control	6
8.	Construction Risk Management	6
9.	Use of Scheduling Software	21
10.	Case Studies and Real-world Applications	21
Total		75

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	4, 6, 12	10%
2.	Homework	3, 9, 13	10%
3.	Midterm Exam	8	25%
4.	Lab Exam	15	20%
5.	Final Exam	16 or 17	35%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).





E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Hinze, J.W., 2022. <i>Construction Planning and Scheduling</i> . 5th ed. Boston: Pearson.
Supportive References	Mubarak, S.A., 2021. <i>Construction Project Scheduling and Control</i> . 4th ed. Hoboken: Wiley.
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom with minimum capacity of 30 students
Technology equipment (projector, smart board, software)	Projector, whiteboard
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Lecturer / Students	Direct / Indirect (Grades, surveys)
Effectiveness of Students assessment	Faculty	Indirect (Barriers to understand successor course)
Quality of learning resources	Lecturer	Direct (Grades)
The extent to which CLOs have been achieved	Lecturer / Faculty	Direct (Grades)
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Civil and Environmental Engineering Department Council in Al-Qunfudah
REFERENCE NO.	The fifteenth session of the academic year 1446
DATE	01/05/2025

