



Course Specification

(Bachelor)

Course Title: **Contemporary Topics in Construction Engineering**

Course Code: **COE4416**

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: **14 January 2025**



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A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	<input type="checkbox"/> University	<input type="checkbox"/> College	Department	<input type="checkbox"/> Track	Others
B.	Required		<input checked="" type="checkbox"/> Elective		
3. Level/year at which this course is offered: (Level 9-10 / Year 5)					
4. Course General Description:					
<p>This course explores current trends, challenges, and innovations shaping the construction engineering industry. Students will engage with topics such as sustainable construction practices, advancements in construction technology, the engineering profession policy/regulations, and engineering soft-skills. The course emphasizes critical thinking and problem-solving, encouraging students to analyze real-world case studies and evaluate the impact of contemporary developments on the industry. By staying informed about cutting-edge topics, students will be better prepared to adapt to the evolving demands of construction engineering.</p>					
5. Pre-requirements for this course (if any):					
Building Construction COE3402					
6. Co-requisites for this course (if any):					
7. Course Main Objective(s):					
to equip students with knowledge of current trends and innovations in construction engineering, fostering critical thinking and adaptability to industry advancements technically and professionally.					

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	45
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		45

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	Explain the importance of professional licensure and the path to become a licensed PE.		Interactive learning Self-directed learning	Midterm Exam
1.2	Identify aspects of sustainability in civil engineering projects and the ethical requirement to strive for sustainable development.			Midterm Exam
1.3	Explain the impact of historical and contemporary issues on engineering problem-solving and the broader effects of engineering solutions on the economy, environment, politics, and society.			Project
2.0	Skills			
2.1	Analyzing situations involving multiple conflicting professional and ethical interests to determine an appropriate course of action.		Interactive learning Self-directed learning	Final Exam
2.2	Infer the impact of engineering solutions on society.			Assignment



Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.3	Explain leadership, the role of a leader, and leadership attitudes.			Final Exam
3.0	Values, autonomy, and responsibility			
3.1	Adopt the required techniques to be able to solve a related problem		Interactive learning Self-directed learning	Final Exam

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction: Sustainability in the Built Environment	6
2.	Contemporary issues & historical perspectives	6
3.	Building Information Modelling (BIM)	6
4.	Sustainability	6
5.	Midterm Exam	3
6.	Public policy and professional engineering	6
7.	Leadership and engineering soft skills	6
8.	Professional and ethical responsibility	6
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	4, 6, 12	15%
2.	Homework	3, 9, 13	15%
3.	Midterm Exam	8	30%
4.	Final Exam	16 or 17	40%

*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	<ul style="list-style-type: none"> • Bienvenido-Huertas, D. and Moyano-Campos, J. eds., 2022. <i>New Technologies in Building and Construction: Towards Sustainable Development (Vol. 258)</i>. Springer Nature. • Ofori, G., 2021. <i>Leadership in the construction industry: developing authentic leaders in a dynamic world</i>. Routledge. • Mirsky, R. and Schaufelberger, J., 2014. <i>Professional ethics for the construction industry</i>. Routledge.
Supportive References	
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

