Course Specification
(Bachelor)

Course Title:	Graduation Project
Course Code:	CE 4090
Program:	Bachelor of Science in Civil Engineering
Department:	Civil Engineering Department
College:	College of Engineering and Architecture
Institution:	Umm Al Qura University
Version:	1
Last Revision Date:	31 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.....6

D. Students Assessment Activities.....7

E. Learning Resources and Facilities.....7

F. Assessment of Course Quality.....8

G. Specification Approval.....9

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/ 5th Year)					
4. Course General Description:					
The students applying all knowledge, skills, and values they had learned in a practical manner through the multi-disciplines graduation project with the orientation of the main project advisor (MPA).					
5. Pre-requirements for this course (if any)**:**					
Department Approval					
6. Co-requisites for this course (if any)**:**					
None					
7. Course Main Objective(s):					
Students learn to fully define a design engineering problems, requirements and constraints. Projects enable students to experience the rigor and structure of a full-cycle design, including: problem definition, benchmark studies, concept generation and feasibility study, engineering design analyses and testing. Students demonstrate teamwork and communication skills.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		
5	Other: weekly meeting with the	45	100%

No	Mode of Instruction	Contact Hours	Percentage
	main project advisor (MPA)		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	
5.	**Others (**weekly meeting with main project advisor (MPA)**)**	45
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	To outline basic knowledge of contemporary problems in the planning, design, construction, and reconstruction of applications for civil engineering.	K1	Weekly meeting, class work, using internet, library and softwares, and in class discussions	Oral examination, homework, technical reports, presentations, and computer applications
1.2	To present advanced knowledge of techniques and skills required in civil engineering practices using contemporary engineering approaches and tools.	K2	Weekly meeting, class work, using internet, library and softwares, and in class discussions	Oral examination, homework, technical reports, presentations, and computer applications
2.0	**Skills**			
2.1	To use ideas and concepts of mathematics and science to solve and design optimal a wide	S1	Graduation project, design projects, using computers and software, small group work and site	Oral examination, homework, technical reports,

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	range of civil engineering facilities/infrastructure systems/components to fulfill the required requirements using practical constraints.		visits, laboratory and field experiments and discussions.	presentations, and computer applications
2.2	To assess, analyze, interpret, and compare the appropriate civil engineering alternatives using advanced methods following thorough examinations of diverse complex civil engineering issues.	S2	Graduation project, design projects, using computers and software, small group work and site visits, laboratory and field experiments and discussions.	Oral examination, homework, technical reports, presentations, and computer applications
2.3	To operate and use the innovative instruments and tools needed for civil engineering projects effectively.	S3	Graduation project, design projects, using computers and software, small group work and site visits, laboratory and field experiments and discussions.	Oral examination, homework, technical reports, presentations, and computer applications
2.4	To demonstrate professional results using groundbreaking methods for specialized civil engineering topics.	S4	Graduation project, design projects, using computers and software, small group work and site visits, laboratory and field experiments and discussions.	Oral examination, homework, technical reports, presentations, and computer applications
3.0	**Values, autonomy, and responsibility**			
3.1	Ability to integrate with multi-disciplinary teams in structural engineering programs, activities and facilities effectively and ethically.	V1	English communications, ethics practice, applying civil engineering standards, codes and specifications, group workshop and	Oral examination, homework, technical reports, presentations, and computer applications

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
			assignments, and respecting deadlines.	
3.2	Ability to use official standards, specifications and practices to assess complex civil engineering issues and show lifetime learning ability.	V2	Applying reinforced concrete standards, codes and specifications	Oral examination, homework, technical reports, presentations, and computer applications
3.3	Ability to develop skills needed for real-life initiatives supporting society and finding solutions for Hajj and Umrah.	V3	Small group work and activities related to Hajj and Umrah.	Oral examination, homework, technical reports, presentations, and computer applications

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction of the graduation project procedures and required deliverables	3
2.	Introducing the GP Topics and selection of the GP's topic	3
3.	Provide a schedule of project deliverables	3
4.	Discuss the alternative design and materials	3
5.	Prepare the design method, constraints, and design codes & standards	3
6.	Optimizing the design results considering value engineering	3
7.	Application of an appropriate software design package	3
8.	Analysis of different components of the project	3
9.	Design of different components of the project using standareds and codes	3
10.	Details of various project elements	3
11.	Prepare cost estimate	3
12.	Prepare construction schedule	3
13.	Prepare detailed drawings	3

14.	Prepare final report	3
15.	Prepare the final presentation and poster	3
	Total	**45**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Introduction of the GP procedures and the report of a weekly meeting with the advisor- team progress	1 & Weekly	5
2.	Schedule of project deliverables	2	5
3.	Teamwork abilities - log sheets	Weekly	5
4.	Identify and formulate the problem	3	5
5.	Design with constraints	4	5
6.	Laboratory/Numerical Experiments, Data analysis	5	5
7.	Application of codes in design	6	4
8.	Consideration of local laws in design	7	4
9.	Economical-Environmental Impact and Contemporary Issues	8	4
10.	Ethical decisions in design	9	4
11.	Data and information obtained from the Internet and Library	10	5
12.	Cost estimation	11	4
13.	Construction Schedule	12	5
14.	Final Report	13	5
15.	Poster summarizing the project	14	5
16.	Group presentation - Oral Exam	15	30

*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	• As specified by the Main Project Advisor according to the nature of the project
Supportive References	• As specified by the Main Project Advisor according to the nature of the project
Electronic Materials	• As specified by the Main Project Advisor according to the nature of the project
Other Learning Materials	• As specified by the Main Project Advisor according to the nature of the project

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	- whiteboards - chairs - curtains
Technology equipment (projector, smart board, software)	- controls for the data show
Other equipment (depending on the nature of the specialty)	Printers and laptops for staff members with required computer software programs are required.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	students	• Student's questioners at the end of the semester. • Analysis of student's feedback.
Effectiveness of Students assessment	Civil engineering Course coordinator	• The faculty member would submit a course folder containing detailed information about the course, student's achievements and feedback.
Quality of learning resources	The specialized committee in each civil engineering division.	• C.E program Assessment Committee analyzes the data collected through various sources, e.g., student feedback surveys, assignments grades, etc. • Periodical workshops may be conducted to improve quality.
The extent to which CLOs have been achieved	Done by the Assessment Committee during the Faculty Council meeting.	• The results are discussed with the faculty (by The assessment committee) during the faculty council meeting. The recommendations are documented. An action plan would be made for improvement after the approval of the Department Faculty

Assessment Areas/Issues	Assessor	Assessment Methods
		Council and to be sent to The College Council for approval and implementation
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**CIVIL ENGINEERING COUNCIL**
REFERENCE NO.	**THE FIFTEENTH SESSION OF THE ACADEMIC YEAR 1446**
DATE	**30 APRIL 2025**

