Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2025-2026

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills, so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing academic programs and course descriptions to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: Al-Muthanna University

Faculty/Institute: College of Engineering

Scientific Department: Department of Civil Engineering

Academic or Professional Program Name: Civil Engineering Program

Final Certificate Name: Bachelor's Degree (B.Sc.) in Civil Engineering

Academic System: Bologna Process

Description Preparation Date: September/2025

File Completion Date: January/2026

Signature:

Head of Department Name:

Asst. Prof. Dr. Othman Hameed Zinkah

Date: January/2026

Signature:

Scientific Associate Name:

Asst. Prof. Dr. Furat Yasser Sharad

Date: January/2026

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: January/2026p

Signature:

Approval of the Dean

1. Program Vision

Our vision in the Department of Civil Engineering at Al-Muthanna University is to support our community with a worth engineering education that allows our students to serve in improving civil infrastructure and economic welfare. We are looking forward to sustaining a strong emphasis on the level of undergraduate education, so our program becomes well-recognized in civil engineering analysis and design and for high quality instruction.

2. Program Mission

The civil engineering program at Al-Muthanna University was established to give its students a wide and detailed education in civil engineering basics, applications, and design that enable them to practice civil engineering at the professional level. The program's mission is to provide them with the confidence and experience needed to meet the technical and social challenges of the future. In addition to use of modern engineering tools, the program gives education in mathematics, physics, engineering mechanics, and civil engineering to perform its mission. Graduates will be able to put themselves in the entry-level of civil engineering positions leading to professional engineering practices and gain a solid undergraduate base which enables them to continue their learning at higher levels.

3. Program Objectives

Our program is devoted to prepare students within three to five years after graduation to:

1. Develop into competent and engaged engineering professionals and apply their technical and managerial qualifications in the planning, designing, constructing, operating and/or maintaining of the built infrastructure and environment.

2. Using their skills to analyze and design systems, identify project execution means and materials, carry out cost estimation and analyses, and participate in directing technical activities for civil engineering projects or projects related to other fields of engineering.

3. Be able to actively participate in their communities and their profession by developing their oral, written, visual and graphic-mode communication abilities when working as team members or leaders.

4. Initiate a program of continuous learning which may include studies leading to a proficient licensure or a higher degree in engineering that provides continued development of their technical abilities and management skills, and attainment of professional expertise.

5. Improve their understanding of sustainability, professionalism, ethics, quality performance, and safety that allows them to be professional influential to society when solving engineering problems and creating solutions in the field of civil engineering.

4. Program Accreditation

None

5. Other external influences

None

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	17	7.08%	Supporting

College Requirements	**7**	**31**	**12.92%**	**Supporting**
Department Requirements	**38**	**192**	**80%**	**Core**
Summer Training	**Required**	–	–	**One Month of Mandatory Training**
Other	–	–	–	–

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First Year	CVE111	Engineering Mechanics – Statics	4	–
First Year	CVE125	Engineering Drawing I	1	2
First Year	ENG001	Mathematics I	6	
First Year	CVE112	Engineering Physics	3	
First Year	UNI004	Computers I	2	2
First Year	UNI006	Democracy and Human Rights	2	
First Year	ENG002	Engineering Workshops	1	2
First Year	CVE121	Engineering Mechanics – Dynamics	4	
First Year	ENG004	Engineering Statistics	3	-
First Year	CVE122	Building Materials	3	2
First Year	ENG003	Engineering Drawing II	1	4
First Year	CVE124	Engineering Geology	2	
First Year	CVE123	Chemistry	2	2
First Year	UNI001	English Language I	2	-
Second Year	CVE221	Strength of Materials I	4	
Second Year	CVE222	Surveying I	4	1
Second Year	CVE223	Concrete Technology I	2	2
Second Year	ENG005	Mathematics II	6	
Second Year	CVE214	Fluid Mechanics	3	1
Second Year	UNI005	Computers II	2	2
Second Year	UNI003	Arabic Language	2	
Second Year	CVE211	Strength of Materials II	4	
Second Year	CVE212	Surveying II	4	1
Second Year	CVE213	Concrete Technology II	3	2
Second Year	CVE224	Irrigation and Drainage Engineering	4	
Second Year	UNI010	Crimes of the Baath Regime	2	
Second Year	CVE225	Building Construction	5	1
Second Year	UNI002	English Language II	2	

Third Year	CVE323	Soil Mechanics I	3	2
Third Year	CVE322	Structural Analysis I	4	
Third Year	CVE321	Highway Engineering I	3	1
Third Year	CVE315	Engineering Economy and Project Management	3	1
Third Year	CVE316	Engineering Analysis and Numerical Methods	3	2
Third Year	CVE313	Soil Mechanics II	3	2
Third Year	CVE312	Structural Analysis II	4	
Third Year	CVE311	Highway Engineering II	3	1
Third Year	CVE326	Construction Methods and Engineering Estimation	4	
Third Year	CVE325	Hydrology	4	
Fourth Year	CVE425	Computer Applications in Civil Engineering	1	3
Fourth Year	CVE424	Sanitary and Environmental Engineering I	3	2
Fourth Year	CVE423	Highway Engineering I	3	2
Fourth Year	CVE422	Foundation Engineering I	4	
Fourth Year	CVE421	Steel Structures Design I	4	
Fourth Year	CVE415	Concrete Structures Design	4	
Fourth Year	CVE413	Highway Engineering II	3	1
Fourth Year	CVE412	Foundation Engineering II	4	
Fourth Year	CVE411	Steel Structures Design II	4	
Fourth Year	ENG006	Engineering Project I	2	
Fourth Year	ENG006	Engineering Project II	2	
Fourth Year	UNI007	Professional Ethics	1	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Comprehensive understanding of scientific aspects within the field of specialization.
Learning Outcomes 2	Scientific preparation for deduction, analysis, and development.
Learning Outcomes 3	Proper readiness to face problems and identify solutions.
Learning Outcomes 4	Enhancing knowledge through self-development to keep up with scientific advancements.
Skills	
Learning Outcomes 1	Ability to use software, devices, and tools required for engineering tasks correctly.

Learning Outcomes 2	Enhancing practical capabilities to produce work within specified standards.
Learning Outcomes 3	Independent capacity to carry out assigned programs and tasks.
Ethics	
Learning Outcomes 1	Promoting the spirit of cooperation and participation.
Learning Outcomes 2	Instilling a sense of responsibility in carrying out academic tasks.
Learning Outcomes 3	Maintaining proper conduct and professional behavior in the workplace.

9. Teaching and Learning Strategies

- Preparing curricula in a rigorous manner to provide students with comprehensive content.
- Utilizing modern technological tools in the teaching process.
- Providing students with opportunities for discussion and reasoning.
- Applying practical work to theoretical subjects in order to obtain tangible results.

10. Evaluation methods

- Written Examinations: To measure theoretical understanding and scientific analysis.
- Practical/Laboratory Examinations: To evaluate applied and experimental skills.
- Reports and Assignments: To assess research ability and written analysis.
- Presentations and Discussions: To evaluate communication and teamwork skills.
- Semester Projects and Graduation Project: To measure the integration of knowledge, skills, and values in solving real-world problems.
- Quizzes and Class Participation: To monitor the continuous progress of the student.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer

Prof. Dr. Essam Jawad Alyaseri	Civil Engineering	Environmental Engineering			✓	
Prof. Dr. Hussein Yousif Aziz	Civil Engineering	Bridges and Tunnels			✓	
Prof. Dr. Basim Jabbar Abbas	Building and Construction Engineering	Geotechnical Engineering			✓	
Asst. Prof Dr. Ali Khalil Ismail	Civil Engineering	Structural Engineering			✓	
Asst. Prof Dr. Haider Kamel Shanbara	Civil Engineering	Transportation Engineering			✓	
Asst. Prof Dr. Nawarns Ali Razaq	Civil Engineering	Transportation Engineering			✓	
Asst. Prof Dr. Tareq Hussein Abees	Civil Engineering	Transportation Engineering			✓	
Asst. Prof Dr. Othman Hameed Zinkah	Civil Engineering	Structural Engineering			✓	
Asst. Prof Dr. Haider Arabi Ibrahim	Building and Construction Engineering	Construction Materials			✓	
Asst. Prof Dr. Firas Fouad Abdullah	Materials Engineering	Materials			✓	
Asst. Prof Dr. Yousif Abdul-Kadhim	Surveying Engineering	Remote Sensing			✓	
Dr. Talib Kamil Qasim	Civil Engineering	Geotechnical Engineering			✓	
Dr. Huda Mohammed Salman	Civil Engineering	Environmental Engineering			✓	
Dr. Abbas Abdul-Hussein Abdul Noor	Civil Engineering	Building Engineering			✓	

Dr. Ameera Mohammed Awad	Civil Engineering	Hydraulic Structures			✓	
Dr. Ali Faleh Mazid	Civil Engineering	Project Management Techniques			✓	
Dr. Anwar Kareem Najm	Education	History			✓	
Lecturer Haider Mohammed Shiyal	Surveying Engineering	Urban Planning			✓	
Lecturer Mohammed Fadel Abbas	Civil Engineering	Geotechnical Engineering			✓	
Lecturer Sarah Safaaddin Mousa	Civil Engineering	Highway Design			✓	
Lecturer Ali Majid Lafta	Building and Construction Engineering	Structural Engineering			✓	
Lecturer Atheer Mohammed Ali	Civil Engineering	Transportation Engineering			✓	
Asst. Lecturer Mithaq Saeed Matroud	Civil Engineering	Structural Engineering			✓	
Asst. Lecturer Jaber Awad	Civil Engineering	Roads and Airports			✓	
Asst. Lecturer Mohammed Khudair	Civil Engineering	Civil Engineering Management			✓	
Asst. Lecturer Dhurgham Shamil Rasheed	Civil Engineering	Structural Engineering			✓	
Asst. Lecturer Ameer Jabbar Abdul-Kareem	Civil Engineering	Structural Engineering			✓	
Asst. Lecturer Haider Tareq	Computer Engineering	Computer Engineering			✓	

Asst. Lecturer Zainab Mohammed Alridha	Civil Engineering	Construction Materials			✓	
Asst. Lecturer Ahmed Qabel Fahem	Electrical Engineering	Communications			✓	
Asst. Lecturer Sattar Farhan Ali	Mechanical Engineering	Applied Mechanics			✓	
Asst. Lecturer Azraa Faleh	Civil Engineering	Transportation Engineering			✓	
Asst. Lecturer Baneen Hassan	Civil Engineering	Geotechnical Engineering			✓	

Professional Development

Mentoring new faculty members

1. A comprehensive orientation program on the academic regulations and policies of the university and department.
2. Participation in pedagogical and training courses on modern teaching methods and classroom management.

Professional development of faculty members

1. Participation in continuous workshops and training programs in teaching, scientific research, and the use of educational technologies.
3. Encouragement of scientific publication and attendance at local and international conferences.
4. Support for opportunities of academic missions and research visits to exchange expertise with other universities.
5. Periodic evaluation of teaching performance to identify individual developmental needs.

12. Acceptance Criterion

Admission to the Civil Engineering program is conducted in accordance with the regulations of the Iraqi Ministry of Higher Education and Scientific Research.

13. The most important sources of information about the program

1. Official textbooks approved and available in the department.
2. Supplementary books and references available in the library.
3. Lectures notes

14. Program Development Plan

1. Measuring Learning Outcomes (GOs):
   - Assessment Tools: Exams, student evaluations, graduate surveys.
   - Standard: Achievement rate of 60% or higher.
   - Review: Annually by the department and faculty members.
2. Reviewing Program Educational Objectives (PEOs):
   - Methods: Surveys for students, graduates, parents, faculty members, and employers.
   - Review: Every 4–6 years.
3. Accreditation Indicators (ICAEE):
   - Curriculum Review: Courses, study plan, and sequencing of courses (every 3 years).
   - Follow-up: Graduation requirements, faculty competence, financial and administrative support (annually to every 2 years).
   - Evaluation: Infrastructure and services (as needed).

Program Skills Outline														
				Required program Learning outcomes										
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills			Ethics			
				A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	
First Year	CVE111	Engineering Mechanics – Statics	Basic	√	√	√	√	√	√	√	√	√	√	
	UNI001	English Language I	Basic	√	√	√	√	√	√	√	√	√	√	
	ENG004	Engineering Statistics	Basic	√	√	√	√	√	√	√	√	√	√	
	CVE125	Engineering Drawing II	Basic	√	√	√	√	√	√	√	√	√	√	
	CVE124	Engineering Geology	Basic	√	√	√	√	√	√	√	√	√	√	
	CVE122	Building Materials	Basic	√	√	√	√	√	√	√	√	√	√	
	CVE121	Engineering Mechanics – Dynamics	Basic	√	√	√	√	√	√	√	√	√	√	
	CVE123	Chemistry	Basic	√	√	√	√	√	√	√	√	√	√	
	UNI004	Computers I	Basic	√	√	√	√	√	√	√	√	√	√	

	ENG003	Engineering Drawing I	Basic	√	√	√	√	√	√	√	√	√	√
	ENG002	Engineering Workshops	Basic	√	√	√	√	√	√	√	√	√	√
	ENG001	Mathematics I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE112	Engineering Physics	Basic	√	√	√	√	√	√	√	√	√	√
	UNI006	Democracy and Human Rights	Basic	√	√	√	√	√	√	√	√	√	√
Second Year	CVE222	Surveying II	Basic	√	√	√	√	√	√	√	√	√	√
	UNI010	Crimes of the Baath Regime	Basic	√	√	√	√	√	√	√	√	√	√
	CVE225	Building Construction	Basic	√	√	√	√	√	√	√	√	√	√
	CVE224	Irrigation and Drainage Engineering	Basic	√	√	√	√	√	√	√	√	√	√
	CVE223	Concrete Technology II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE221	Strength of Materials II	Basic	√	√	√	√	√	√	√	√	√	√
	UNI002	English Language II	Basic	√	√	√	√	√	√	√	√	√	√

	UNI005	Computers II	Basic	√	√	√	√	√	√	√	√	√	√
	ENG005	Mathematics II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE214	Fluid Mechanics	Basic	√	√	√	√	√	√	√	√	√	√
Third Year	CVE213	Concrete Technology I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE212	Surveying I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE211	Strength of Materials I	Basic	√	√	√	√	√	√	√	√	√	√
	UNI003	Arabic Language	Basic	√	√	√	√	√	√	√	√	√	√
	CVE326	Construction Methods and Engineering Estimation	Basic	√	√	√	√	√	√	√	√	√	√
	CVE325	Hydrology	Basic	√	√	√	√	√	√	√	√	√	√
	CVE324	Reinforced Concrete II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE322	Structural Analysis II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE321	Highway Engineering II	Basic	√	√	√	√	√	√	√	√	√	√

	CVE323	Soil Mechanics II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE315	Engineering Economy and Project Management	Basic	√	√	√	√	√	√	√	√	√	√
	CVE314	Reinforced Concrete I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE313	Soil Mechanics I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE312	Structural Analysis I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE311	Highway Engineering I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE316	Engineering Analysis and Numerical Methods	Basic	√	√	√	√	√	√	√	√	√	√
Fourth Year	CVE425	Computer Applications in Civil Engineering	Basic	√	√	√	√	√	√	√	√	√	√
	CVE424	Sanitary and Environmental Engineering II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE423	Highway Engineering II	Basic	√	√	√	√	√	√	√	√	√	√

	CVE422	Foundation Engineering II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE421	Steel Structures Design II	Basic	√	√	√	√	√	√	√	√	√	√
	CVE414	Sanitary and Environmental Engineering I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE415	Concrete Structures Design	Basic	√	√	√	√	√	√	√	√	√	√
	CVE413	Highway Engineering I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE412	Foundation Engineering I	Basic	√	√	√	√	√	√	√	√	√	√
	CVE411	Steel Structures Design I	Basic	√	√	√	√	√	√	√	√	√	√
	ENG006	Engineering Project	Basic	√	√	√	√	√	√	√	√	√	√
	ENG006	Engineering Project	Basic	√	√	√	√	√	√	√	√	√	√
	UNI007	Professional Ethics	Basic	√	√	√	√	√	√	√	√	√	√

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Courses' Description

Course Description Form

1. Course Name:
Engineering Mechanics: Statics
2. Course Code:
CVE111
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hrs.
7. Course administrator's name (mention all, if more than one name)
Name: Ali Faleh Maziad Email: ali.faleh@mu.edu.iq
8. Course Objectives

Course Objectives	• To explore and comprehend the concept of statics in engineering systems, particularly within the field of civil engineering. • Gain a comprehensive understanding of how forces operate within various structural systems. • Acquire knowledge about moments and their effects on structural systems. • Develop an understanding of equilibrium theory and the capacity to design structures that maintain equilibrium. • Explore the functions and significance of supports in structural systems. • Enhance comprehension of beams, their different types, and the principles of beam equilibrium. • Gain an understanding of frames, their various types, and the equilibrium principles of frame equilibrium. • Acquire knowledge about trusses, their different types, and the principles of truss equilibrium. • To comprehend loads and their various types in engineering systen
9. Teaching and Learning Strategies	
Strategy	This course aims to provide students with a fundamental understanding of statics in structural systems. It will cover the analysis of forces in one-, two- and three-dimensional systems. Emphasis will be places on how these force

	main fit within different structural systems, including beams, frames, and trusses, in real-world scenarios. Additionally, the course will explore how forces generate moments and examine the effects of these moments on the static equilibrium of structures. Equilibrium, a fundamental concept in civil engineering will also be taught. Through quizzes and assignments, students will have opportunity to demonstrate their comprehension and mastery of the aforementioned topics. Their scores, active participation, and understanding will collectivity determine their level of knowledge in the subject matter.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	4	General introduction to engineering mechanics and approved sources	Introduction	Attendance	Homework assignments, descriptive tests, and exams
Week-2	4	Understanding the basic principles of mechanics and the laws and theories upon which it is based	Basic Concepts	Attendance	Homework assignments, descriptive tests, and exams
Week-3	4	Identify and familiarize the different terms of force systems	Composition and Resolution of Forces	Attendance	Homework assignments, descriptive tests, and exams

Week–4	4	. Defining the concept of resultant and how to calculate it	Composition and Resolution of Forces	Attendance	Homework assignments, descriptive tests, and exams
Week–5	4	Understand how moments influence structural systems	Principle of Moments and Couples	Attendance	Homework assignments, descriptive tests, and exams
Week–6	4	Understanding methods for calculating the results of forces and moments	Resultants of Force Systems	Attendance	Homework assignments, descriptive tests, and exams
Week–7	4	Understanding how to draw a free body diagram and how to identify the forces acting on the body	Equilibrium and Free–Body Diagram	Attendance	Homework assignments, descriptive tests, and exams
Week–8	4	Understanding how to draw a free body diagram and how to identify the forces acting on the body	Equilibrium and Free–Body Diagram	Attendance	Homework assignments, descriptive tests, and exams
Week–9	4	Recognize beams, and develop an understanding of the equilibrium principles that apply to each.	Beams in the plane	Attendance	Homework assignments, descriptive tests, and exams

Week–10	4	Recognize frames, and develop an understanding of the equilibrium principles that apply to each.	Frames in the Plane	Attendance	Homework assignments, descriptive tests, and exams
Week–11	4	Recognize frames, and develop an understanding of the equilibrium principles that apply to each.	Frames in the Plane	Attendance	Homework assignments, descriptive tests, and exams
Week–12	4	Recognize trusses, and develop an understanding of the equilibrium principles that apply to each.	Trusses in the Plane	Attendance	Homework assignments, descriptive tests, and exams
Week–13	4	Recognize trusses, and develop an understanding of the equilibrium principles that apply to each.	Trusses in the Plane	Attendance	Homework assignments, descriptive tests, and exams
Week–14	4	Recognize beams, frames, and trusses, and develop an understanding of the equilibrium principles that apply to each in 2dand 3d systems	Frames and Trusses in the Space	Attendance	Homework assignments, descriptive tests, and exams
Week–15	4	Final review of all topics and concepts studied in the course	Review	Attendance	Homework assignments, descriptive tests, and exams

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

١- Formative assessment (40%) includes:

quizzes (26%)

Classroom activity (6%)

Homework (4%)

Seminar (4%)

2- Midterm exam (10%)

3- Final exam (50%)

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• ENGINEERING MECHANIC, 3rd edition, by Archie Higdon and William B. Stiles, Published by Prentice Hall. • R.C. Hibbeler, Published by Pearson Prentice Hall Pearson Education, Inc. Upper Saddle River, New Jersey 07458
Main references (sources)	ENGINEERING MECHANIC, 3rd edition, by Archie Higd and William B. Stiles, Published by Prentice Hall.
Recommended books and references (scientific journals, reports…)	R.C. Hibbeler, Published by Pearson Prentice Hall Pear Education, Inc. Upper Saddle River, New Jersey 07458
Electronic References, Websites	Some specialized engineering websites

Course Description Form

1. Course Name:
Engineering drawing
2. Course Code:
ENG003
3. Semester / Year:
First Semester / First year/ 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours/ 5 units
7. Course administrator's name (mention all, if more than one name)
Name: Sattar Farhan Ali Email: msattar7641988@mu.edu.iq
8. Course Objectives

Course Objectives	• Introduce the basic and principles of engineering drawings. • Learn the students to create and interpret engineering drawing

	• Develop students' inspiration skills of the geometric objects.

9. Teaching and Learning Strategies

Strategy	The Engineering Drawing course is three-hours lab course that meets twice per week for and two hours. This is a required class for all first year Civil Engineering. The student w will be assessed according to the module tasks.The excises in the drawing hall will be mar weekly. And the homework will be assessed next lecture. During both assessments student will give the oral and written feedback in order to improve their skills. The final ex will be done at the end of the semester.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	1	Understand and read the engineering drawing clearly	Introduction and Instruments	The lecture	Quizzes ,Assignments, simenar
Week-2	1	Understand and read the engineering drawing clearly	Lines and lettering	The lecture	Quizzes ,Assignments, simenar
Week-3	1	Understand and read the engineering drawing clearly	Lines and lettering	The lecture	Quizzes ,Assignments, simenar

Week-4	1	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-5	1	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-6	1	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-7	1	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-8	1	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-9	1	Apply dimensions and tolerances to engineering drawings	Dimensions	The lecture	Quizzes ,Assignments, simenar
Week-10	1	Apply dimensions and tolerances to engineering drawings	Dimensions	The lecture	Quizzes ,Assignments, simenar
Week-11	1	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-12	1	Create orthographic projections (front,	Projections	The lecture	Quizzes ,Assignments, simenar

		side, top) of 3D objects			
Week-13	1	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-14	1	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-15	1	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar

11. Course Structure/ Lab					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	2	Understand and read the engineering drawing clearly	Introduction and Instruments	The lecture	Quizzes ,Assignments, simenar

Week-2	2	Understand and read the engineering drawing clearly	Lines and lettering	The lecture	Quizzes ,Assignments, simenar
Week-3	2	Understand and read the engineering drawing clearly	Lines and lettering	The lecture	Quizzes ,Assignments, simenar
Week-4	2	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-5	2	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-6	2	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-7	2	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar
Week-8	2	Enhances Imagination to the geometric shapes	Applies Geometry	The lecture	Quizzes ,Assignments, simenar

Week-9	2	Apply dimensions and tolerances to engineering drawings	Dimensions	The lecture	Quizzes ,Assignments, simenar
Week-10	2	Apply dimensions and tolerances to engineering drawings	Dimensions	The lecture	Quizzes ,Assignments, simenar
Week-11	2	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-12	2	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-13	2	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar

Week-14	2	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar
Week-15	2	Create orthographic projections (front, side, top) of 3D objects	Projections	The lecture	Quizzes ,Assignments, simenar

12.	Course Evaluation
	• Midterm Exam: 10 Marks • Quizzes: 24 Marks • Assignments: 14 Marks • Seminar: 2 Marks
13.	Learning and Teaching Resources
Required textbooks (curricular books any)	Engineering Drawing, Abdul Rasul Al-Khafaf, 19
Main references (sources)	Engineering Drawing, Abdul Rasul Al-Khafaf, 1990
Recommended books and references (scientific journals, reports...)	Principles of Engineering Drawing Using Instrume and Computer, Razan Ibrahim Abu Saleh
Electronic References, Websites	Engineering Drawing for Engineers and Technicia Part One, Osama Mohammed Al-Mardi Suleim 2016

Course Description Form

1. Course Name:	
Mathematics-1	
2. Course Code:	
ENG001	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist.Lect Athraa Falih Wali Email: athraa.faleh@mu.edu.iq	
8. Course Objectives	
Objectives	The main goal is to equip you with the essential analytical tools a mathematical foundations, such as **Calculus** and **Linear Algeb** required to model and solve complex structural and phys engineering problems. It focuses on developing your log reasoning and computational skills, which serve as the bedrock all specialized civil engineering courses in the coming years.
9. Teaching and Learning Strategies	
Strategy	Teaching strategies include giving face-to-face lectures in addition to classroom assignments and forming groups for students to discuss in addition to exams and presentations.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*6*	Definition of functions	Functions and Graphs-n	Attendance	daily test
Week-2	*6*	Solving inequalities	PRELIMINARIES-Absolut value, Lines, Circles, and Parabolas-n	Attendance	discussion
Week-3	*6*	Graphing functions	Functions and Graphs-n	Attendance	Daily exam and speech
Week-4	*6*	Even and odd functions	Identifying Functions; Even & Odd Functions-n	Attendance	daily test
Week-5	*6*	Composite functions, function scaling, and reflection	Combining Functions; Shifting and Scaling Graphs-n	Attendance	daily test
Week-6	*6*	Trigonometric functions	Trigonometric Functions	Attendance	Reports
Week-7	*6*	Limits and continuity	LIMITS AND CONTINUITY	Attendance	Reports

Week-8	*6*	One-sided limits	One-Sided Limits and Limits at Infinity-n	Attendance	daily test
Week-9	*6*	Differentiation of functions	Derivatives of Functions	Attendance	discussion
Week-10	*6*	Derivatives of trigonometric functions	Derivatives of Trigonometric Functions	Attendance	daily test
Week-11	*6*	Derivatives of logarithmic functions	Derivatives of Logarithmic Functions	Attendance	discussion
Week-12	*6*	Integration	INTEGRATION	Attendance	daily test
Week-13	*6*	Definite integrals	INTEGRATION-definite	Attendance	daily test
Week-14	*6*	Applications of integration	TECHNIQUES OF INTEGRATION	Attendance	daily test
Week-15	*6*	Definition of functions	APPLICATIONS OF INTEGRAL-n	Attendance	discussion

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc	
13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Calculas books
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering physics	
2. Course Code:	
CVE112	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
125	
7. Course administrator's name (mention all, if more than one name)	
Name: Hayder Kareem Sakran Email: hayder_sakran@mu.edu.iq	
8. Course Objectives	
Course Objectives	After successful completion of the module, students should be able to: ▪ Describe the SI unit system and convert units ▪ Describe the translational motion of a single particle in terms of position and inertial frames, velocity, acceleration, linear momentum and force. ▪ To understand Newton's Laws of Motion, first law, second law- acceleration, force, and mass. ▪ To understand Fluid Mechanics Temperature and Thermodynamics ▪ Represent graphically the problem of motion of a physical system using the free-body diagram technique. ▪ Identify the forces acting on ordinary mechanical systems to be gravity and Electromagnetism (Drag force, frictional force, normal force, etc.).
9. Teaching and Learning Strategies	

Strategy	Different forms of teaching will be used to come up with objectives of the course: ▪ Lecture method and use of the interactive whiteboard ▪ Explanation and clarification ▪ Providing students with the basics and additional topics related to Engineering physics. ▪ Forming discussion groups during lectures to discuss. ▪ Asking students, a set of thinking questions during lectures, such as what, how, when and why. ▪ Giving students homework that requires self-explanation in causal ways.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	3	Introduction to basic concepts	Introduction to Engineering Physics	Attendance	Quiz
Week 2	3	Linear motion in one direction	Motion in One Dimension	Attendance	Discussion
Week 3	3	Motion in physics and vector calculation	Motion Physics, Measurement, and Vectors	Attendance	Quiz and report
Week 4	3	Linear motion in two directions	Motion in Two Dimensions	Attendance	[Not specified]

Week 5 and 6	3	Forces and Newton's laws	Force and Newton's Laws of Motion	Attendance	Quiz
Week 7 and 8	3	Circular motion and applications of Newton's laws	Circular Motion and Other Applications of Newton's Laws	Attendance	Quiz
Week 9 and 10	3	Work and energy	Work, Energy, Conservation Systems, and the Concept of Potential Energy	Attendance	Reports
Week 11	3	Equilibrium	Equilibrium under the Effect of Concurrent Forces	Attendance	Reports
Week 12	3	Fluid mechanics	Fluid Mechanics	Attendance	Quiz
Week 13	3	Heat and thermodynamics	Temperature and Thermodynamics	Attendance	Discussion
Week 14 and 15	3	Fundamentals of fluid flow	Moving Fluids and the Continuity Principle; Static Fluids and Pascal's Law;	Attendance	Quiz

			Buoyancy and Archimedes' Principle; Viscous Flow and Poiseuille's Equation		
Week 1	3	Introduction to basic concepts	Introduction to Engineering Physics	Attendance	Quiz
Week 2	3	Linear motion in one direction	Motion in One Dimension	Attendance	Discussion
Week 3	3	Motion in physics and vector calculation	Motion Physics, Measurement, and Vectors	Attendance	Quiz and report
Week 4	3	Linear motion in two directions	Motion in Two Dimensions	Attendance	[Not specified]

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

1. **Formative assessment: 40%**, including:
   - Daily quizzes: **10%**
   - Classroom activity: **5%**
   - Report: **10%**
   - Seminar: **10%**
   - Assignment: **5%**
2. **Midterm exam: 10%**
3. **Final exam: 50%**

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• *Engineering Physics*, Dr. Hasan Maridi, British University in Yemen
Main references (sources)	• *Physics for Scientists and Engineers (with Physics NOW and InfoTrac)*, Raymond A. Serway, Emeritus, James Madison University, Thomson Brooks/Cole, 6th Edition, 2004, 1296 pages
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	• Google Classroom link: https://classroom.google.com/c/NjI5NTA2ODc0MTk4?cjc=fbcltbv

Course Description Form

1. Course Name:
Computer 1
2. Course Code:
UN1004
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Sarah Safaa Al-Din Mousa **Email**: almusawysarah@mu.edu.iq
8. Course Objectives

Course Objectives	To develop an understanding of how computing technology provides new methods for solving problems; to use computational thinking in analyzing

	problems, designing solutions, developing them, and evaluating them; and read, write, test, and modify computer programs.

9. Teaching and Learning Strategies

Strategy	The learning strategy in this course is outcome-based, where the extent to which the intended learning outcomes are achieved is assessed accordingly. The lecturer will focus on materials that develop students' critical thinking skills. The course is designed so that students take environmental considerations into account in their work and personal lives, even if they do not wish to specialize as environmental engineers. The course will introduce the fundamentals of the field and explain how to obtain additional information needed by engineers in their professional careers. It will also provide students with a good opportunity to understand methods for solving environmental problems and applying them in their construction or transportation-related work. Short quizzes will be based on the material covered in lectures, which may come from a variety of sources and may go beyond the information presented in the textbook. The short quizzes and final examination usually consist of both quantitative and qualitative questions. In all quizzes and the final examination, students must show all solution steps for quantitative problems. Group assignments and reports will be open-book, open-notes, and may involve consultation with classmates. However, quizzes will be closed-book, closed-notes, and without peer assistance. Assignments that are illegible or not prepared in a professional engineering manner will not be graded. The final examination will be comprehensive. Plagiarism is considered a serious violation and will not be tolerated, and it will result in a zero grade for the assignment. Deadlines will be announced during lectures. Late assignments may be accepted, but 10% of the grade will be deducted for each day of delay, including weekends, starting immediately after the next lecture. Students with acceptable excuses will be granted sufficient time to

	complete their assignments without penalty. No assignments will be accepted after the solution has been reviewed or posted, whichever comes first.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Introduction to Windows 10 system	Introduction to Windows 10 System	Attendance	Daily quiz
Week 2	2	Working with icons	Working with Icons	Attendance	Discussion
Week 3	2	Using system windows	Using System Windows	Attendance	Daily quiz and report
Week 4	2	Files and folders	Files and Folders	Attendance	Daily quiz
Week 5	2	Accessories	Accessories	Attendance	Daily quiz
Week 6	2	Main interface of Microsoft Word 2010 / general settings	Main Interface of Microsoft Word 2010 / General Settings	Attendance	Reports
Week 7	2	Text / graphics / tables	Text / Graphics / Tables	Attendance	Reports

Week 8	2	Handling slides and creating presentations (PowerPoint 2010)	Handling Slides and Creating Presentations (PowerPoint 2010)	Attendance	Daily quiz
Week 9	2	Backgrounds and themes / transition effects / animations tab	Backgrounds and Themes / Transition Effects / Animations Tab	Attendance	Discussion
Week 10	2	Slide show / printing / presentation tab	Slide Show / Printing / Presentation Tab	Attendance	Daily quiz
Week 11	2	Working with Microsoft Excel	Working with Microsoft Excel	Attendance	Discussion
Week 12	2	Mathematical and arithmetic functions	Mathematical and Arithmetic Functions	Attendance	Daily quiz
Week 13	2	Statistical functions	Statistical Functions	Attendance	Daily quiz
Week 14	2	Logical / conditional function (IF)	Logical / Conditional Function (IF)	Attendance	Daily quiz
Week 15	2	Review	Review	Attendance	Discussion

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Introduction to Windows 10 system	Introduction to Windows 10 System	Attendance	Daily quiz
Week 2	2	Working with icons	Working with Icons	Attendance	Discussion
Week 3	2	Using system windows	Using System Windows	Attendance	Daily quiz and report
Week 4	2	Files and folders	Files and Folders	Attendance	Daily quiz
Week 5	2	Accessories	Accessories	Attendance	Daily quiz
Week 6	2	Main interface of Microsoft Word 2010 / general settings	Main Interface of Microsoft Word 2010 / General Settings	Attendance	Reports
Week 7	2	Text / graphics / tables	Text / Graphics / Tables	Attendance	Reports
Week 8	2	Handling slides and creating presentations (PowerPoint 2010)	Handling Slides and Creating Presentations (PowerPoint 2010)	Attendance	Daily quiz

Week 9	2	Backgrounds and themes / transition effects / animations tab	Backgrounds and Themes / Transition Effects / Animations Tab	Attendance	Discussion
Week 10	2	Slide show / printing / presentation tab	Slide Show / Printing / Presentation Tab	Attendance	Daily quiz
Week 11	2	Working with Microsoft Excel	Working with Microsoft Excel	Attendance	Discussion
Week 12	2	Mathematical and arithmetic functions	Mathematical and Arithmetic Functions	Attendance	Daily quiz
Week 13	2	Statistical functions	Statistical Functions	Attendance	Daily quiz
Week 14	2	Logical / conditional function (IF)	Logical / Conditional Function (IF)	Attendance	Daily quiz
Week 15	2	Review	Review	Attendance	Discussion

12. Course Evaluation

Formative Assessment: 40%, including:

Daily Quiz: 10%

Classroom Activity: 5%

Report: 10%

Seminar: 10% Assignment: 5% Midterm Examination: 10% Final Examination: 50%

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer Fundamentals – prescribed textbook
Main references (sources)	EXCEL Formulas – Almunther Saff
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Democracy and Human Rights
2. Course Code:
UN1006
3. Semester / Year:
second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60
7. Course administrator's name (mention all, if more than one name)
Name: D. Anwar Kareem Najeem Email: anwar.kareem@mu.edu.iq
8. Course Objectives

Course Objectives	The objectives of the course are to understand the basic concepts of tl subject of rights and democracy, the most important treaties and theori that resulted from this, and the protocols specific to each country.

9. Teaching and Learning Strategies

Strategy	Teaching strategies include in-person lectures, classroom assignments, student discussion groups, exams, and presentations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	6	An Overview of Rights and Democracy	An Overview of Rights and Democracy	Attendance	Daily test
Week-2	6	Types and Categories of Rights	Types and Categories of Rights	Attendance	Daily test
Week-3	6	Private and Public Rights	Private and Public Rights	Attendance	Daily test
Week-4	6	Minority Rights	Minority Rights	Attendance	Daily test
Week-5	6	Children's Rights	Children's Rights	Attendance	Daily test
Week-6	6	International Law	International Law	Attendance	Daily test

Week–7	6	The Universal Declaration of Human Rights	The Universal Declaration of Human Rights	Attendance	Daily test
Week–8	6	The Historical Roots of Democracy	The Historical Roots of Democracy	Attendance	Daily test
Week–9	6	The Historical Roots of Rights	The Historical Roots of Rights	Attendance	Daily test
Week–10	6	Freedoms	Freedoms	Attendance	Daily test
Week–11	6	Burning Orchards	Burning Orchards	Attendance	Daily test
Week–12	6	Chemical Weapons Attacks on Cities	Chemical Weapons Attacks on Cities	Attendance	Daily test
Week–13	6	Suppression of Uprisings	Suppression of Uprisings	Attendance	Daily test
Week–14	6	The Convention on the Elimination of All Forms of	The Convention on the Elimination of All Forms of	Attendance	Daily test
Week–15	6	Discrimination against Women	Discrimination against Women	Attendance	Daily test

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc	
13. Learning and Teaching Resources	
Required textbooks (curricular boo if any)	1. Arab Journal of Research on Rights 2. Arab Studies Journal – focusing on research related to democracy 3. Reports on Rights and Freedoms

Main references (sources)	1. The Book of Democracy and Human Rights 2. The Book of Private Rights 3. The Book of Public Democracy 4. The Book of Events Accompanying the Uprisings
Recommended books and references (scientific journals, reports…)	1. The Book of Freedoms 2. The Book of Repressive Policies 3. The Book of World Events Regarding Democracy
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering workshops	
2. Course Code:	
ENG002	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45	
7. Course administrator's name (mention all, if more than one name)	
Name: Assistant teacher. Dhurgham Shamil Rashid Email: durgam_rashid@mu.edu.iq	
8. Course Objectives	
Course Objectives	1. Practical training in workshops is fundamental to real-world industrial environments, contributing to the development and enhancement of the technical and manual skills necessary for technicians working in various engineering industries and workshops. 2. A workshop can introduce participants to a new concept, motivating them to explore it independently, or demonstrate practical methods and encourage their application. It is an excellent way to teach practical skills, as it allows participants to experiment with new techniques and learn from mistakes in a safe environment.
9. Teaching and Learning Strategies	

	▪ To encourage students to engage in manual work and acquire practical skills, while emphasizing the importance of applying occupational safety regulations, which are considered highly important in any field of work after graduation. ▪ To provide students with information about carpentry, turning, plumbing, welding, filing, and sanitary installations as general practical knowledge useful in everyday life, in addition to applying part of this knowledge in civil engineering.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	1	Explanation of a carpentry workshop: Tools used in a carpentry workshop - Wood defects	Carpentry Workshop	Attendance	Daily Exam
Week-2	1	Types of wood, wood drying, wood defects	Carpentry Workshop	Attendance	Discussion

Week-3	1	Theoretical explanation of a filing unit, filing tools, types of files	Metalworking Workshop	Attendance	Daily Exam and Report
Week-4	1	Types of saws, drilling machines, types of cutting tools	Metalworking Workshop	Attendance	Daily Exam
Week-5	1	Introduction to a welding workshop: Welding, types of welding, welding machines	Welding Workshop	Attendance	Daily Exam
Week-6	1	Explanation of a plumbing workshop – Types of plastic pipes, advantages and disadvantages of plastic pipes	Welding Workshop	Attendance	Reports
Week-7	1	Explanation of a carpentry workshop: Tools used in a carpentry workshop – Wood defects	Plumbing Workshop	Attendance	Reports
Week-8	1	Plastic pipe welding and pipe classification	Plumbing Workshop	Attendance	Daily Exam
Week-9	1	Galvanized iron pipes and their components	Plumbing Workshop	Attendance	Discussion
Week-10	1	Gas pipelines	Stainless Steel Workshop	Attendance	Daily Exam

Week-11	1	Explanation of the sheet metal workshop	Stainless Steel Workshop	Attendance	Discussion
Week-12	1	Screening tools	Lathe Workshop	Attendance	Daily Exam
Week-13	1	Explanation of the lathe workshop	Lathe Workshop	Attendance	Daily Exam
Week-14	1	Main parts of lathes	Seminar	Attendance	Discussion
Week-15	1	Types of metal cutting tools	Review	Attendance	Discussion

11. Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	2	Explanation of the carpentry workshop: Tools used in a carpentry workshop - Wood defects - Practical application of carpentry	Carpentry Workshop	Attendance	Daily Exam
Week-2	2	Types of wood - Wood drying - Wood defects - Practical application of carpentry	Carpentry Workshop	Attendance	Discussion
Week-3	2	Theoretical explanation of the filing unit - Filing tools - Types of files + Practical lesson on filing	Metalworking Workshop	Attendance	Daily Exam and Report

Week–4	2	Types of saws – Drilling machines – Types of cutting tools + Practical lesson on filing – Theoretical explanation	Metalworking Workshop	Attendance	Daily Exam
Week–5	2	Introduction to the welding workshop + Practical application of the welding workshop	Welding Workshop	Attendance	Daily Exam
Week–6	2	Welding – Types of welding – Welding machines + Practical application of the welding workshop	Welding Workshop	Attendance	Reports
Week–7	2	Explanation of the plumbing workshop – Types of plastic pipes – Advantages and disadvantages of plastic pipes – Practical application of the plumbing workshop	Plumbing Workshop	Attendance	Reports
Week–8	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum	Plumbing Workshop	Attendance	Daily Exam
Week–9	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet	Plumbing Workshop	Attendance	Discussion

		metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum			
Week-10	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum	Stainless Steel Workshop	Attendance	Daily Exam
Week-11	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical	Stainless Steel Workshop	Attendance	Discussion

		lesson on turning; seminar; comprehensive review of the practical curriculum			
Week–12	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum	Lathe Workshop	Attendance	Daily Exam
Week–13	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum	Lathe Workshop	Attendance	Daily Exam
Week–14	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop;	Seminar	Attendance	Discussion

		explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum			
Week-15	2	Plastic pipe welding; pipe classification; practical application in a plumbing workshop; galvanized iron pipes and their components; gas pipelines; practical application in a plumbing workshop; explanation of a sheet metal workshop; practical application in a sheet metal workshop; sheet metal tools + practical application in a sheet metal workshop; explanation of a lathe workshop; main parts of lathes; practical lesson on turning; types of metal cutting tools; metals from which cutting tools are made; practical lesson on turning; seminar; comprehensive review of the practical curriculum	Review	Attendance	Discussion

12. Course Evaluation

1. The final grade is out of 100% and includes:

Monthly exam 40%

Class activities (assignments) 25%

Report 25%

Seminar 10%

2. There is no midterm exam.

3. There is no final exam.

13. Learning and Teaching Resources	
Required textbooks (curricular book, any)	Fundamentals of Workshop Technology – Author: Ahmed Zaki Helmy – Arabic Language – 2007 Edition
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://www.researchgate.net/publication/340439030_ass_alwrsh_alhndsyt_Engineering_Workshop_Basics University Press for Printing and Publishing ISBN: 9789922907390

Course Description Form

1. Course Name:	
Engineering Drawing-II	
2. Course Code:	
CVE125	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75	
7. Course administrator's name (mention all, if more than one name)	
Name: Sattar Farhan , Methaq Saeed Email: Sattarfarhan7641988@mu.edu.iq, Methaq.saeedm@mu.edu.iq	
8. Course Objectives	
Course Objectives	• Introduce the basic principles of engineering drawings. • Familiarizes students with the fundamentals of drawing. • Learn the students to create and interpret engineering drawing. • Develop students' inspiration skills of the geometric objects. • Understand fundamental of the AutoCAD drawings • Learn how to use the AutoCAD program. • Learn to draw 2D drawings using basic elements (line, circle, rectangular…etc.). • Learn to modify, edit the 2D drawing (move, copy, mirror…etc.). • Learn to add dimensions to the 2D drawings.

	• analyze and draw any engineering drawing using the facilities the AutoCAD program.

9. Teaching and Learning Strategies

Strategy	The Engineering Drawing course is a five-hours lab course that meets twice per week for two and three hours. This is a required class for all first year Civil Engineering. The class time is divided between manual and CAD instruction. The sketching is employed to teach concepts and a limited number of tools are used when constructing manual drawings (e.g., triangles, scales, compasses, dividers, and mechanical pencils). Autodesk AutoCAD 2025 was used as the CAD software package. Topics covered in the course include lettering, sketching, orthographic drawings, isometric, dimensioning, and section views.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*1*	Sections. Types of Sections. Method of Hatching, Opening and Creating Drawings, Exploring the AutoCAD interface, Zooming and Panning	Sections. Types of Sections. Method of Hatching, Opening and Creating Drawings, Exploring the AutoCAD interface, Zooming and Panning	*Attendance*	Daily assignment
Week-2	*1*	Sections. Drawing three views with one view Full sectioned, Using	Sections. Drawing three views with one view Full	Attendance	Daily assignment

		the Mouse, Keyboard, and Enter Key to work quickly and efficiently in AutoCAD.	sectioned, Using the Mouse, Keyboard, and Enter Key to work quickly and efficiently in AutoCAD.		
Week-3	*1*	Sections. Drawing three views with tow views half sectioned, Lines, Circles Rectangles, Creating Simple Drawings, Using Object Snap tracking.	Sections. Drawing three views with tow views half sectioned, Lines, Circles Rectangles, Creating Simple Drawings, Using Object Snap tracking.	Attendance	Daily assignment
Week-4	*1*	Isometric Drawing. Drawing Objects of simple solids, Polar and Ortho Tracking Entering Coordinates and Angles Object Snaps and Tracking	Isometric Drawing. Drawing Objects of simple solids, Polar and Ortho Tracking Entering Coordinates and Angles Object Snaps and Tracking	Attendance	Daily assignment
Week-5	*1*	Isometric Drawing. Drawing Objects of geometric solids	Isometric Drawing. Drawing Objects of geometric solids	Attendance	Daily assignment

		that have inclined surfaces, Move, Copy, Rotate, Mirror	that have inclined surfaces, Move, Copy, Rotate, Mirror		
Week-6	*1*	Isometric Drawing. Drawing Objects of geometric solids that have circular surfaces, Scale, Using the reference option with the Scale Tool	Isometric Drawing. Drawing Objects of geometric solids that have circular surfaces, Scale, Using the reference option with the Scale Tool	Attendance	Daily assignment
Week-7	*1*	*1st Quizzes*	*1st Quizzes*	Attendance	*1st Quizzes*
Week-8	*1*	Isometric Drawing. Drawing Objects that are described whit three views, Layers , Layer Tools	Isometric Drawing. Drawing Objects that are described whit three views, Layers , Layer Tools	Attendance	Daily assignment
Week-9	*1*	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described whit three views and dimensioning,	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described whit three views and dimensioning,	Attendance	Daily assignment

		Polylines Arcs Polygons Ellipses	Polylines Arcs Polygons Ellipses		
Week-10	*1*	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described with two views and dimensioning, Trim and Extend Fillet and Chamfer	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described with two views and dimensioning, Trim and Extend Fillet and Chamfer	Attendance	Daily assignment
Week-11	*1*	Determination of third view for simple geometrical solid that is described with tow views, Polyline Edit and Spline Offset and Explode Join	Determination of third view for simple geometrical solid that is described with tow views, Polyline Edit and Spline Offset and Explode Join	Attendance	Daily assignment
Week-12	*1*	Determination of third view for simple geometrical solid of many details that is described with tow views, Printing from	Determination of third view for simple geometrical solid of many details that is described with tow views, Printing from	Attendance	Daily assignment

		Layout Tabs Printing from the Model Tab	Layout Tabs Printing from the Model Tab		
Week-13	*1*	Auxiliary view for Orthographic projections, Using Dimensioning Tools, Using Dimension Styles, Editing Dimensions	Auxiliary view for Orthographic projections, Using Dimensioning Tools, Using Dimension Styles, Editing Dimensions	Attendance	Daily assignment
Week-14	*1*	Oblique Drawing. Drawing Objects of simple solids, The Multiline Text Tool the Single Line Text Tool Editing Text, The Hatch Command, The Hatch Editor Ribbon Tab	Oblique Drawing. Drawing Objects of simple solids, The Multiline Text Tool the Single Line Text Tool Editing Text, The Hatch Command, The Hatch Editor Ribbon Tab	Attendance	Daily assignment
Week-15	*1*	2nd Quizzes	2nd Quizzes	*Attendance*	*2nd Quizzes*

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Sections. Types of Sections. Method of Hatching,	Sections. Types of Sections. Method of Hatching,	Attendance	Daily assignment

		Opening and Creating Drawings, Exploring the AutoCAD interface, Zooming and Panning	Opening and Creating Drawings, Exploring the AutoCAD interface, Zooming and Panning		
Week-2	*4*	Sections. Drawing three views with one view Full sectioned, Using the Mouse, Keyboard, and Enter Key to work quickly and efficiently in AutoCAD.	Sections. Drawing three views with one view Full sectioned, Using the Mouse, Keyboard, and Enter Key to work quickly and efficiently in AutoCAD.	Attendance	Daily assignment
Week-3	*4*	Sections. Drawing three views with tow views half sectioned, Lines, Circles Rectangles, Creating Simple Drawings, Using Object Snap tracking.	Sections. Drawing three views with tow views half sectioned, Lines, Circles Rectangles, Creating Simple Drawings, Using Object Snap tracking.	Attendance	Daily assignment
Week-4	*4*	Isometric Drawing. Drawing	Isometric Drawing. Drawing	Attendance	Daily assignment

		Objects of simple solids, Polar and Ortho Tracking Entering Coordinates and Angles Object Snaps and Tracking	Objects of simple solids, Polar and Ortho Tracking Entering Coordinates and Angles Object Snaps and Tracking		
Week-5	*4*	Isometric Drawing. Drawing Objects of geometric solids that have inclined surfaces, Move, Copy, Rotate, Mirror	Isometric Drawing. Drawing Objects of geometric solids that have inclined surfaces, Move, Copy, Rotate, Mirror	Attendance	Daily assignment
Week-6	*4*	Isometric Drawing. Drawing Objects of geometric solids that have circular surfaces, Scale, Using the reference option with the Scale Tool	Isometric Drawing. Drawing Objects of geometric solids that have circular surfaces, Scale, Using the reference option with the Scale Tool	Attendance	Daily assignment
Week-7	*4*	2nd Quizzes	2nd Quizzes	Attendance	2nd Quizzes
Week-8	*4*	Isometric Drawing. Drawing Objects that are described whit three views,	Isometric Drawing. Drawing Objects that are described whit three views,	Attendance	Daily assignment

		Layers , Layer Tools	Layers , Layer Tools		
Week-9	*4*	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described whit three views and dimensioning, Polylines Arcs Polygons Ellipses	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described whit three views and dimensioning, Polylines Arcs Polygons Ellipses	Attendance	Daily assignment
Week-10	*4*	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described with two views and dimensioning, Trim and Extend Fillet and Chamfer	Isometric Drawing. Drawing Objects, of geometric solids that has inclined and circular surfaces, that is described with two views and dimensioning, Trim and Extend Fillet and Chamfer	Attendance	Daily assignment
Week-11	*4*	Determination of third view for simple geometrical solid that is described	Determination of third view for simple geometrical solid that is described	Attendance	Daily assignment

		with tow views, Polyline Edit and Spline Offset and Explode Join	with tow views, Polyline Edit and Spline Offset and Explode Join		
Week-12	*4*	Determination of third view for simple geometrical solid of many details that is described with tow views, Printing from Layout Tabs Printing from the Model Tab	Determination of third view for simple geometrical solid of many details that is described with tow views, Printing from Layout Tabs Printing from the Model Tab	Attendance	Daily assignment
Week-13	*4*	Auxiliary view for Orthographic projections, Using Dimensioning Tools, Using Dimension Styles, Editing Dimensions	Auxiliary view for Orthographic projections, Using Dimensioning Tools, Using Dimension Styles, Editing Dimensions	Attendance	Daily assignment
Week-14	*4*	Oblique Drawing. Drawing Objects of simple solids, The Multiline Text Tool the Single Line Text Tool Editing Text, The Hatch Command,	Oblique Drawing. Drawing Objects of simple solids, The Multiline Text Tool the Single Line Text Tool Editing Text, The Hatch Command,	Attendance	Daily assignment

		The Hatch Editor Ribbon Tab	The Hatch Editor Ribbon Tab		
Week-15	*4*	2nd Quizzes	2nd Quizzes	Attendance	2nd Quizzes

12. Course Evaluation

1) Formative assessment 40% as follows:
   - Quizzes 20%
   - Daily Assignments 16%
   - Reports 4%
2) Summative assessment (60%) as follows:
   - Midterm exam 10%
   - Final Exam 50%.

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Engineering Drawing, Abdul Rasul Al-Khafaf, 1990
Main references (sources)	Engineering Drawing, Abdul Rasul Al-Khafaf, 1990
Recommended books and references (scientific journals, reports…)	Principles of Engineering Drawing Using Instruments and Computer, Razan Ibrahim Abu Saleh
Electronic References, Websites	Engineering Drawing for Engineers and Technicians, Part One, Osama Mohammed Al-Mardi Suleiman, 2016

Course Description Form

1. Course Name:
Engineering Mechanics: Dynamics
2. Course Code:
CVE121
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hrs.
7. Course administrator's name (mention all, if more than one name)
Name: Ali Faleh Maziad Email: ali.faleh@mu.edu.iq
8. Course Objectives

Course Objectives	

	• To explore and comprehend the concept of Friction in engineering systems, particularly within the field of civil engineering.
	• Gain a comprehensive understanding of how static and kinetic friction is created.
	• Acquire knowledge about centroid and the center of gravity of geometric shapes.
	• Explore the measures of shapes resistance to the angular deflection, bending stresses and shear stresses represented by different types of moment of inertias including:
	  • First moment of inertia
	  • Second moment of inertia
	  • Polar moment of inertia
	• Develop an understanding of the basic concept of dynamic represented by the equation of motion.

9. Teaching and Learning Strategies	
Strategy	This course aims to provide students with a fundamental understanding of dynamic structural systems. Friction is the first topic that covers the mechanism of the movem of the contacted surfaces. Subsequently, the course will cover the centroid of geome shapes in two- and three-dimensional systems. furthermore, the course emphasis area moments of inertias within different geometric shapes, including regular and irreg shapes. This will make students able to choose the right sections of structural memb in real-world scenarios. Moreover, the course will explore the basic concept of dyna and how the equation of motion will be generated and examine the effects of diffe parameters on the function. Quizzes and assignments are the main measures in class. By these measures, students will have opportunity to demonstrate t comprehension and mastery of the aforementioned topics. Their scores, ac

	participation, and understanding will collectivity determine their level of knowledge in subject matter.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Gain an understanding of how friction is created between the moved contacted surfaces	Friction	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-2	*4*	Identify and familiarize the different terms of friction associated with various structure's surfaces contact	Friction	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-3	*4*	Understand the centroid and center of gravity.	Centroid and center of gravity	*Attendance*	*Homework assignments, descriptive tests, and exams*

Week-4	*4*	Understand the centroid and center of gravity.	Centroid and center of gravity	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-5	*4*	Understand the calculation of first moment of inertias of structural sections	Moment of inertia	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-6	*4*	Understand how the first moment of inertia influences the performance of structural member	Moment of inertia	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-7	*4*	Understand the calculation of second moment of inertias of structural sections	Second moment of inertia	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-8	*4*	Understand how the second moment of inertia influences the performance of structural member	Second moment of inertia	*Attendance*	*Homework assignments, descriptive tests, and exams*

Week-9	*4*	Understand how the polar moment of inertia influences the performance of structural member.	Polar moment of inertia	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-10	*4*	Recognize and comprehend the concept of dynamic.	Basic concept of dynamic	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-11	*4*	Recognize and comprehend the concept of dynamic.	Basic concept of dynamic	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-12	*4*	*Understanding the equations of motion*	Equation of motion	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-13	*4*	*Understanding the equations of motion and methods for solving problems*	Equation of motion	*Attendance*	*Homework assignments, descriptive tests, and exams*

Week-14	*4*	*Understanding the equations of motion and methods for solving problems*	Equation of motion	*Attendance*	*Homework assignments, descriptive tests, and exams*
Week-15	*4*	*Final review of all topics and concepts studied in the course*	Review	*Attendance*	*Homework assignments, descriptive tests, and exams*

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					

Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

Formative assessment (40%) includes:

quizzes (26%)

Classroom activity (6%)

Homework (4%)

Seminar (4%)

2- Midterm exam (10%)

3- Final exam (50%)

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• ENGINEERING MECHANIC, 3rd edition, by Archie Higdon and William B. Stiles, Published by Prentice Hall.

	• R.C. Hibbeler, Published by Pearson Prent Hall Pearson Education, Inc. Upper Saddle River, New Jersey 07458
Main references (sources)	ENGINEERING MECHANIC, 3rd edition, by Arc Higdon and William B. Stiles, Published by Pren Hall.
Recommended books and references (scientific journals, reports…)	R.C. Hibbeler, Published by Pearson Prentice H Pearson Education, Inc. Upper Saddle River, N Jersey 07458
Electronic References, Websites	Some specialized engineering websites

Course Description Form

1. Course Name:
Building Materials
2. Course Code:
CVE 122
3. Semester / Year:
second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
125
7. Course administrator's name (mention all, if more than one name)
Name: Sarah Safaaldeen Musa Email: almusawysarah@mu.edu.iq
8. Course Objectives

Course Objectives	1- Introducing the student to the properties of construction materials and methods of their production. 2- Introducing the student to the existing modern alternatives for construction materials. 3- Show the student how to carry out standard checks to see the conformity of the structural materials to the specifications. How to deal with building materials and choose the most suitable according to work requirements, and to guarantee strength, safety, and economy as possible.

9. Teaching and Learning Strategies

Strategy	▪ Managing the lecture using electronic display devices in a theoretical way relat to the reality of daily life to attract the student to the topic of the lesson so that the material is flexible and subject to understanding and analysis. ▪ Managing applied lectures in laboratories to develop the practical aspect. ▪ The students make some field visits to the projects under construction and writ descriptive reports about them in relation to the topic of the lesson. ▪ Individual and group assignments. ▪ Assigning the student some extra-curricular activities to develop his research skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	3	Properties of building materials	Properties of Building Materials	Attendance	Daily quiz

		and devices for measuring stress and strain	and Devices for Measuring Stress and Strain		
Week 2	3	Properties of clay brick	Properties of Clay Brick	Attendance	Discussion
Week 3	3	Manufacture of clay brick and other types of brick	Manufacture of Clay Brick and Other Types of Brick	Attendance	Daily quiz and report
Week 4	3	Properties of tiles	Properties of Tiles	Attendance	Daily quiz
Week 5	3	Types of tiles	Types of Tiles	Attendance	Daily quiz
Week 6	3	Properties and types of building stone	Properties and Types of Building Stone	Attendance	Reports
Week 7	3	Insulating materials	Insulating Materials	Attendance	Reports
Week 8	3	Mortar and binding materials	Mortar and Binding Materials	Attendance	Daily quiz
Week 9	3	Properties of gypsum mortar	Properties of Gypsum Mortar	Attendance	Discussion
Week 10	3	Types of gypsum mortar and lime mortar	Types of Gypsum Mortar and Lime Mortar	Attendance	Daily quiz

Week 11	3	Properties of wood	Properties of Wood	Attendance	Discussion
Week 12	3	Types of wood	Types of Wood	Attendance	Daily quiz
Week 13	3	Reinforcing steel	Reinforcing Steel	Attendance	Daily quiz
Week 14	3	Cement	Cement	Attendance	Daily quiz
Week 15	3	Review	Review	Attendance	Discussion

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	General	General	Attendance	Daily quiz
Week 2	2	Procedures for	Procedures for	Attendance	Daily quiz
Week 3	2	Conducting the	Conducting the	Attendance	Daily quiz
Week 4	2	Conducting the	Conducting the	Attendance	Daily quiz
Week 5	2	Conducting the	Conducting the	Attendance	Daily quiz
Week 6	2	Examining the	Examining the	Attendance	Daily quiz
Week 7	2	First monthly	First Monthly	Attendance	Daily quiz
Week 8	2	Total absorption	Total Absorption	Attendance	Daily quiz
Week 9	2	Breaking	Breaking	Attendance	Daily quiz
Week 10	2	Conducting the	Conducting the	Attendance	Daily quiz
Week 11	2	Conducting the	Conducting the	Attendance	Daily quiz
Week 12	2	Mechanical	Mechanical	Attendance	Daily quiz
Week 13	2	Setting time test	Setting Time	Attendance	Daily quiz
Week 14	2	Second monthly	Second Monthly	Attendance	Daily quiz
Week 15	2	Review	Review	Attendance	Daily quiz

12. Course Evaluation

Formative Assessment: 40%, including:

Daily Quiz: 10%

Classroom Activity: 5%

Report: 10%

Seminar: 10%

Assignment: 5%

Midterm Examination: 10%

Final Examination: 50%

13. Learning and Teaching Resources

Required textbooks (curricular boo if any)	Materials for Civil and Construction Engineers, Fourth Edition in SI Units, Michael S. Mamlouk and John P. Zaniewski ISBN-10: 1-292-15440-3 ISBN-13: 978-1-292-15440-4
Main references (sources)	Iraqi Guide for Building Materials / D.B.A. 311 / Ministry of Construction and Housing Specifications of Materials and Construction Works / Ministry of Construction and Housing
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Chemistry	
2. Course Code:	
3. Semester / Year:	
Second Semester \2025-2026	
4. Description Preparation Date:	
1\9\2026	
5. Available Attendance Forms:	
Theoretical + practical	
6. Number of Credit Hours (Total) / Number of Units (Total)	
houre \ units	
7. Course administrator's name (mention all, if more than one name)	
Name: Mahmoud A. Sharshoh Email: mahmoud.sharshoh@mu.edu.iq	
8. Course Objectives	
Course Objectives	Preparing students to use glassware and laboratory equipment and to understand the methods used to calculate the weight and volume of liquid

	and solid materials. - Knowledge of quantitative and qualitative analysis, weight, volume, molarity, normal distribution and the relationship between them, in addition to the function of acids and volumetric and gravimetric analysis in chemical engineering... in addition to knowledge of organic materials, their properties, production methods and chemical reactions.

9. Teaching and Learning Strategies

Strategy	Traditional, modern and electronic teaching methods

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	4	Introduction to Chemistry	Introduction to Chemistry	lecture	Class participation
Week-2	4	Equivalent weight, Mole, Atomic weight, Molecular weight	Equivalent weight, Mole, Atomic weight, Molecular weight	lecture	Class participation
Week-3	4	Molarity and Normality and relation between them	Molarity and Normality and relatio between them	lecture	Homework
Week-4	4	Chemical Stoichiometry	Chemical Stoichiometry	lecture	Exam
Week-5	4	Density and specific gravity ,Weight Percentagee	Density and specific gravity ,Weigl Percentagee	lecture	Homework

Week-6	4	Acid – base equilibria and pH of solutions	Acid – base equilibria and pH of solutions	lecture	Exam
Week-7	4	Calculation of pH of aqueous solution & salt of weak acid and strong base	alculation of pH of aqueous soluti & salt of weak acid and strong bas	lecture	Class participation
Week-8	4	Calculation of the pH of buffer solution	alculation of the pH of buffer solut	lecture	Exam
Week-9	4	Analysis of samples by titration with standard solution	Analysis of samples by titration wi standard solution	lecture	Homework
Week-10	4	Direct titration and back titration	Direct titration and back titration	lecture	Report
Week-11	4	Organic chemistry	Organic chemistry	lecture	Class participation
Week-12	4	Learn about alkanes, a type of organic compound, their properties, production methods, and reactions.	Alkanes	lecture	Exam
Week-13	4	Learn about Alkenes, a type of organic compound, their properties, production methods, and reactions.	Alkenes	lecture	Report
Week-14	4	Learn about Alkynes, a type of organic compound, their properties, production	Alkynes	lecture	Homework

		methods, and reactions.			
Week-15	4	Learn about Aromatic, a type of organic compound, their properties, production methods, and reactions.	Aromatic	lecture	Homework

11. Course Evaluation

Daily tests

Monthly exams

Lab reports

Class participation

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Chemistry by (Melvin Winokur(
Main references (sources)	1-Skoog A. Douglas ,"Fundamental of Analytical Chemistry ",8 th edition ,Canada (2004) 2-Daniel C .Harris ,"Quantitative chemical Analysis", 6 th edition , U.S. (2003). 3- Raymond chang ,"Essential chemistry ", 2nd edition, Mc Graw –Hill (2000). 4-Organic Chemistry 2010 by Saibal Kanti Bhattacharjee Robert Thornton Morrison , Robert Neilson Boyd
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Engineering geology
2. Course Code:
CVE124
3. Semester / Year:
second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30
7. Course administrator's name (mention all, if more than one name)
Name: Assist.Lect Athraa Falih Wali Email: athraa.faleh@mu.edu.iq

8. Course Objectives	
The course aims to provide engineers with an understanding of earth materials (rocks and soil) and their physical and mechanical properties to ensure safe site selection and mitigate geological hazards that could compromise structural integrity.	• ..... • ..... • .....
9. Teaching and Learning Strategies	
Strategy	Teaching strategies include giving face-to-face lectures in addit to classroom assignments and forming groups for students discuss in addition to exams and presentations.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	Introduction	Introduction to Geology	Attendance	daily test
Week-2	*2*	Understanding matter: definition and properties	Matter and its Properties	Attendance	discussion
Week-3	*2*	How to identify types of minerals	Types of Minerals	Attendance	Daily exam and speech
Week-4	*2*	Igneous and metamorphic rocks	Types of Rocks	Attendance	daily test
Week-5	*2*	Understanding the details of sedimentary rocks	Sedimentary Rocks	Attendance	daily test
Week-6	*2*	Definitions and differences between them	Weathering and Erosion	Attendance	Reports

Week-7	*2*	Understanding soil components	Soil Properties and Composition	Attendance	Reports
Week-8	*2*	Understanding soil properties and how to improve them	Soil Properties and Composition	Attendance	daily test
Week-9	*2*	Solving multiple examples	Examples of Soil	Attendance	discussion
Week-10	*2*	Definition and types of surface water	Water and Nature	Attendance	daily test
Week-11	*2*	Groundwater	Water and Nature	Attendance	discussion
Week-12	*2*	Definition and types	Structural Geology	Attendance	daily test
Week-13	*2*	Understanding the causes of its formation	Earthquakes and Volcanoes	Attendance	daily test
Week-14	*2*	Comprehensive understanding of maps	Cartography	Attendance	daily test

Week-15	*2*	Presentation and review of previous topics	Presentation	Attendance	discussion

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					

Week-14					
Week-15					

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form Engineering Statistics

1. Course Name:
Engineering Statistics
2. Course Code:
ENG00٤
3. Semester / Year:
٢nd Semester / year
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Students' attendance is recorded in the classroom and on Excel sheet lists based on the number of lectures and according to the dates in the schedule, and is sent weekly to the Absences Committee.
6. Number of Credit Hours (Total) / Number of Units (Total)
٣ hours weekly / ٤٨ hours for the semester
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Haider Tawfiq Naeem Email: haidertn@mu.edu.iq

8. Course Objectives	
Course Objectives	1. Definition of the basic concepts in statistics. 2. Knowledge of the tools and methods used in the descriptive statistics represented in the collecting data methods, the questionnaire, tabular and graphical presentation of data. 3. The ability to make the necessary calculations to arrive at the various metrics that highlight the basic characteristics of the phenomenon, such as measures of central tendency, as well as measures of dispersion. 4. Understand the ideas of probability and the basic probability distributions including discrete and continuous, simple regression and coloration – time series (general trend equation) – index number. 5. Using appropriate statistical package (such as SPSS, Excel) to fit mathematical models.
9. Teaching and Learning Strategies	
Strategy	▪ Teaching through the pattern, whether it is the visual (verbal) pattern or the sensory (kinetic) pattern. ▪ Education using mini-lessons, where the scientific curriculum is divided into main ideas and then taught to the student in the form of successive lectures, and each lecture deals with only one idea. ▪ Cooperative learning where the students are divided into small groups and a specific issue is presented to them and students are given the opportunity to solve this issue in cooperation with each other. ▪ Adopting the method of delivering lectures and linking each topic with examples from the reality of the statistician's work

	Practical exercises that are discussed by the students and solved during the lecture and with the participation of all students in the division with the professor to give the subject a kind of interaction.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	٢	Introduction– Description and Classification of Data	Description and Classificatior Data	Lecture	H.W.
2	2	Explain Frequency Distribution	Frequency Distribution	Lecture	H.W.
3	2	Explain Cumulative Frequency Distribution	umulative Frequency Distributi	Lecture	C.W.
4	2	Finding Frequency Histogram, Frequency Polygon & Frequency Curve and Relative Frequency	requency Histogram, Frequen Polygon	Lecture	Quiz
5	2		Measurements	Lecture	H.W.

6	2	nding Mathematical Me ode, Geometric Mean a Harmonic Mean	of Central Tendency	Lecture	H.W.
7	2	Finding Standard Deviatio Variance,	Measures of Dispersion	Lecture	C.W.
8	2	efficient of Variance, Ra nd Mean Absolute Deviat		Lecture	Quiz
9	2	Explain Theory of Probability	Theory of Probability	Lecture	H.W.
10	2			Lecture	H.W.
11	2	Explain Permutation and Combination	Permutation and Combination	Lecture	C.W.
12	2	Finding Statistical Probability Distributions	tatistical Probability Distributio	Lecture	Quiz
13	2	Finding (Poisson Distribution, Binomial and Normal Distribution)	oisson Distribution, Binomial a Normal Distribution)	Lecture	H.W.
14	2	Explain Sampling and Testing of Significant	ampling and Testing of Signific	Lecture	H.W.
15	2	Introduce Chi-Square Distribution and Linear Correlation and regression.	hi-Square Distribution and Lin Correlation and regression.	Lecture	C.W

11. Course Evaluation	
Homework, Classwork, Quizzes, Oral questions, Repots, Mid Exam, Final Exam Course Evaluation: ٥0% Final Exam: 50%	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if a	• مبادئ الاحصاء ٢٠٠٨ , الدكتور احمد سمعة طيبة • الاحتماليات والاحصاء مترجم د.موري شيلر ٢٠٠٣
Main references (sources)	• Allan G. Bluman – Elementary Statistics_ A Step-By-Step Approach. 9th ed.-McGraw-Hill Ed (1) • Douglas C. Montgomery, George C. Runger – Applied Statistics and Probability for Engineers-Wiley (2018)
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
English I	
2. Course Code:	
UNI001	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
50 hrs.	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Lecturer Zainab Mohammed Alridha Email: Zainabalridha@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ Developing basic language skills: The course aims to help students acquire and improve their English language skills at a beginner level, including vocabulary building, pronunciation improvement, and developing grammatical understanding. ▪ Building communicative competence: The course aims to enable students to use English effectively in various everyday situations by developing fluency, accuracy, and confidence in expressing themselves,

	understanding others, and participating in basic conversations. ▪ Developing language awareness: The course helps students understand the English language system including grammar, vocabulary, and sentence structures through explanations, examples, and practical activities. ▪ Enhancing reading and listening skills: The course aims to improve students' ability to comprehend written and spoken English texts at a beginner level by practicing reading and listening comprehension strategies.
9. Teaching and Learning Strategies	
Strategy	The strategies include: ▪ Communicative approach: Encouraging students to communicate effectively through pair work, group discussions, and role-playing activities. ▪ Guided progressive learning: Providing structured support to students while gradually increasing the level of difficulty. ▪ Contextual learning: Presenting language in real-life contexts using visual aids and different educational materials. ▪ Active learning: Engaging students in interactive activities, exercises, and games. ▪ Multi-sensory learning: Using visual, auditory, and kinesthetic tools to enhance learning. ▪ Formative assessment: Continuously evaluating students' progress through quizzes and classroom activities.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Recognizing the basics of communication in English and using greetings and introductions, including self-introduction and academic specialization in civil engineering	Unit 1: Introductions and Presentations	In-person	Class participation
Week 2	2	Talking about daily activities and hobbies using the present simple tense and linking them to university life or engineering training	Unit 2: Daily Activities	In-person	Class participation
Week 3	2	Using the simple past tense to	Unit 3: News and Events	In-person	Class participation

		express events, such as describing a project or a previous field activity			
Week 4	2	Talking about food and drink and using quantifiers, with language applications related to quantities and materials in daily life	Unit 4: Food and Drink	In-person	Class participation
Week 5	2	Assessing students' understanding of the previous units through exercises and applications related to study or engineering work	First Monthly Exam	In-person	Exam
Week 6	2	Expressing future plans, such as	Unit 5: Future Plans	In-person	Class participation

		study plans or work in engineering projects, using future forms			
Week 7	2	Using comparison between things through adjectives, such as comparing buildings, materials, or places	Unit 6: Comparison and Description	In-person	Class participation
Week 8	2	Talking about experiences using the present perfect tense, such as academic experiences or practical training	Units 7–8: Experiences and Advice	In-person	Class participation
Week 9	2	Narrating stories or experiences using past tenses, such as the experience of visiting a project	Unit 9: Storytelling	In-person	Class participation

		or construction site			
Week 10	2	Assessing students' level in grammar, vocabulary, and communication skills	Second Monthly Exam	In-person	Exam
Week 11	2	Using the passive voice to describe processes, such as how something is built or manufactured	Unit 10: The Interactive World	In-person	Class participation
Week 12	2	Talking about personal and academic experiences, such as training or work in projects	Unit 11: Personal Experiences	In-person	Class participation
Week 13	2	Expressing opinions and comparing ideas, such as discussing ideas	Unit 12: Expressing Opinions	In-person	Class participation

		about cities or infrastructure			
Week 14	2	Reviewing grammar and vocabulary topics with language applications related to university life and professional work	General Review	In-person	Classroom assignment
Week 15	2	Comprehensive assessment of the topics of previous units and applying communication skills in real-life situations	Preparation for the Final Exam	In-person	Class participation

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					

Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

Formative Assessment

- Quizzes (2) worth 30% (30 marks) in weeks 5 and 10, covering all learning outcomes.
- One in-class assignment worth 5% (5 marks) in week 2, covering all learning outcomes.

- One homework assignment worth 5% (5 marks) in week 12, covering all learning outcomes.

Summative Assessment

- Midterm Exam, duration 2 hours, worth 10% (10 marks) in week 7.
- Final Exam, duration 3 hours, worth 50% (50 marks) in week 16.

Total Assessment: 100% (100 marks).

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Soars, J., & Soars, L. (2014). *New Headway Beginner Student's Book (4th Edition).* Oxford University Press.
Main references (sources)	•Swan, M. (2016). Practical English Usage. Oxf University Press. •Murphy, R. (2019). English Grammar in U Cambridge University Press.
Recommended books and references (scientific journals, reports…)	•Harmer, J. (2007). How to Teach English. Longma •Scrivener, J. (2011). Learning Teaching: The Esser Guide to English Language Teaching. Macmillan.
Electronic References, Websites	• Oxford Online Learning Resources https://elt.oup.com • Cambridge English Learning Resources https://www.cambridgeenglish.org • British Council – Learn English https://learnenglish.britishcouncil.org

Course Description Form

1. Course Name:	
Strength of MaterialsII	
2. Course Code:	
CVE211	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Majd Lafta Email: ali.majd@mu.edu.iq	
8. Course Objectives	
Course Objectives	simple **Stress & Strain Analysis**: Understanding and applying principles of normal, shear, and bearing stresses. And calculating linear and lateral deformations using Hooke's Law and Poisson's Ratio. Thermal **Effects & Connections**: Evaluating thermal stresses in restrained bodies and designing mechanical joints and connections within allowable safety limits. Mechanics **of Torsion**: Studying the effect of torque on circular shafts, calculating shear stresses, and determining the angle of twist to ensure efficient mechanical power transmission.

9. Teaching and Learning Strategies	
Strategy	The course adopts an educational strategy focused on building the student's analytical and mathematical capabilities, distributed according to the following methodological pillars: **1. Interactive Formal Lectures:** • Presenting the fundamental concepts and principles of Mechanics of Materials using illustrative aids. • Focusing on the derivation of laws and understanding the physical basis of stress and strain to ensure a deep cognitive grasp of the subject. **2. Tutorials & Discussion Sessions:** • Allocating intensive periodic hours to solve various applied problems covering different loading cases. • Encouraging academic dialogue within the classroom to analyze engineering problems and deduce optimal solution methods. **3. Self-Directed Learning:** • Urging students to research methodological references and textbooks to deepen understanding beyond the scope of the lecture. • Assigning periodic home assignments to enhance the ability for independent problem-solving and time management in accordance with ECTS requirements. **4. Continuous Assessment & Feedback:** • Conducting regular short tests (Quizzes) to monitor student progress and adjust the educational path promptly.

	• Providing detailed feedback on student-submitted solutions to develop their skills in mathematical analysis and graphical representation of problems.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	4	Explain the types of loads and supports	Introduction: types of loads and supports	Face-to-Face (F2F)	Daily quiz
Week-2	4	Teach students types of simple stresses and their calculation methods	Simple stress and strain	Face-to-Face (F2F)	Discussion
Week-3	4	Teach students types of simple stresses and their calculation methods	Simple stress and strain	Face-to-Face (F2F)	Daily quiz and report
Week-4	4	Teach students types of simple stresses and their calculation methods	Simple stress and strain	Face-to-Face (F2F)	Daily quiz
Week-5	4	Explain the types of stresses in thin-	Thin Walled Pressure Vessels+ Quiz 1	Face-to-Face (F2F)	Daily quiz

		walled vessels and their calculation			
Week-6	4	Explain Hook's Law and its relationship with material properties	Basics of Hook's Law and Mechanical Properties	Face-to-Face (F2F)	Reports
Week-7	4	Explain stresses and strains resulting from temperature changes	Thermal Deformation and Temperature Effects	Face-to-Face (F2F)	Reports
Week-8	4	Explain stresses and strains resulting from temperature changes	Thermal Stresses in Composite Bars	Face-to-Face (F2F)	Daily quiz
Week-9	4	Mid-term Exam Period	Mid-term Exam	Face-to-Face (F2F)	Discussion
Week-10	4	Explain axial expansion and contraction due to applied loads	Axial deformation	Face-to-Face (F2F)	Daily quiz
Week-11	4	Explain axial deformation in composite members due to loads	Axial deformation in composite bar	Face-to-Face (F2F)	Discussion

Week-12	4	Evaluation through Quiz 2	Quiz 2	Face-to-Face (F2F)	Daily quiz
Week-13	4	Explain torsion, its calculation, and its effect on structures	Analysis of Torsion in Shafts and Beams	Face-to-Face (F2F)	Daily quiz
Week-14	4	Explain torsion, its calculation, and its effect on structures	Analysis of Torsion in Shafts and Beams	Face-to-Face (F2F)	Daily quiz
Week-15	4	Calculate principal stresses	Principal Stresses and Maximum In-Plane Shear Stress	Face-to-Face (F2F)	Discussion

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					

Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation
QUIZ (1) 7% QUIZ (2) 7% MID TERM 10% Homework 7% Classroom activity 7%

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Strength of materials, Ferdinand L.Singer/ Andrew Pytel

Main references (sources)	Mechanics of Materials, 11th edition Published by Pearson (July 7, 2022) © 2023 Russell C. Hibbeler
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Surveying I	
2. Course Code:	
CVE212	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Yousif A. Mousa + Lecturer Hadi Mohammed Email: yousif.mousa@mu.edu.iq /hadi.mohammed@mu.edu.iq	
8. Course Objectives	
Course Objectives	This unit aims to provide an understanding of surveying by defining its scope, exploring its types, and addressing error management. It includes linear measurements such as distances, right angles, and obstacle

	handling. Key concepts like heights, datum, and benchmarks are distinguished, while levelling equipment and field procedures are applied to determine reduced levels and address errors. Profile levelling is practiced, and calculations extend to estimating areas of cross sections, irregular shapes, and polygons as well as calculating volumes.

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation theoretically and practically, while at the same time refining and expanding their critical thinking skills. This will be achieved through lectures, interactive tutorials, and by considering fieldwork. Lectures are provided first as a pdf (e.g., in Google class), before being explained in the class. Then, students ar given some examples to work on with some help

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	*General overview*	General Introduction and Definition of Engineering Surveying	*Attendance*	Daily Quiz
Week-2	*2*	Fundamentals of Surveying	Fundamentals of Surveying	*Attendance*	Discussion
Week-3	*2*	*Learning* Linear Measurements	Linear Measurements	*Attendance*	Daily Quiz and Report

			and Theory of Errors		
Week-4	*2*	Overcoming obstacles	Overcoming obstacles in linear measurements	*Attendance*	Daily Quiz
Week-5	*2*	Leveling	Leveling	*Attendance*	Daily Quiz
Week-6	*2*	Errors of leveling	Errors of leveling	*Attendance*	Reports
Week-7	*2*	Exam	Exam	*Attendance*	Exam
Week-8	*2*	Closed leveling and adjustment	Closed leveling and adjustment	*Attendance*	Discussion
Week-9	*2*	Profile leveling	Profile leveling	*Attendance*	Daily Quiz and Report
Week-10	*2*	Area and Cross-section	Area and Cross-section I	*Attendance*	Daily Quiz
Week-11	*2*	Area and Cross-section	Area and Cross-section II	*Attendance*	Discussion
Week-12	*2*	Volume calculation	Volume calculation	*Attendance*	Reports
Week-13	*2*	Topographic maps, DSM, and DEM	Topographic maps, DSM, and DEM	*Attendance*	Daily Quiz
Week-14	*2*	*Exam*	*Exam*	*Attendance*	Exam
Week-15	*2*	*review*	*review*	*Attendance*	Discussion

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*

Week-1	*3*	A lecture on fieldwork and necessary supplies	fieldwork and necessary supplies	*Attendance*	Discussion
Week-2	*3*	Learn about direct measurement tools and how to use them	direct measurement tools and how to use them	*Attendance*	*Reports+Daily Quiz*
Week-3	*3*	Fieldwork exercise in using measuring tapes	using measuring tapes	*Attendance*	Discussion
Week-4	*3*	Fieldwork exercise in using measuring tapes	using measuring tapes	*Attendance*	Daily Quiz and Report
Week-5	*3*	Field work exercise: surveying with a measuring tape, creating polygons	surveying with a measuring tape, creating polygons	*Attendance*	Discussion
Week-6	*3*	*Exam*	*Exam*	*Attendance*	
Week-7	*3*	leveling device, practice using the device, practice reading the leveling staff	leveling device, practice reading the leveling staff	*Attendance*	Discussion
Week-8	*3*	Practice reading the leveling staff and calculating points elevations	calculating points elevations	*Attendance*	Reports
Week-9	*3*	Using series leveling to calculate the levels of points	calculate the levels of points	*Attendance*	Reports
Week-10	*3*	Using closed leveling to calculate elevations	closed leveling	*Attendance*	Reports

		of points and close at the starting point			
Week-11	*3*	Using closed leveling to calculate elevations of points and close at the starting point	closed leveling	*Attendance*	Daily Quiz
Week-12	*3*	profile and cross sections	profile and cross sections	*Attendance*	Reports
Week-13	*3*	profile and cross sections and Calculating quantities	Calculating quantities	*Attendance*	Reports
Week-14	*3*	Applying mapping methods to calculate distances and areas on maps	calculate distances and areas on maps	*Attendance*	Reports
Week-15	*3*	*Exam*	*Exam*	*Attendance*	

12. Course Evaluation

1- Formative assessment (40%) includes:

Daily quizzes (16%)

Classroom and homework activities (9%)

Reports (7%)

Practical tests (8%)

2- Midterm exam (10%)

3- Final exam (50%)

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Walker, J., & Awange, J. (2017). Surveying for Civil and M Engineers: Theory, Workshops, a Practicals. Springer.
Main references (sources)	Uren and Price (2010), Surveying Engineers, Fourth edition, Palgra Macmillan.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Concrete Technology I	
2. Course Code:	
CVE213	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Assist. Haider Araby Ibrahim, Dr. abbas abed Noor Email: arabyhaider@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ Delivering lectures ▪ Questions and discussions during lectures, practical applications, and site discussions. ▪ Classroom and extracurricular assignments.

9. Teaching and Learning Strategies

Strategy	▪ –Introducing students to the concepts and theories of concrete technology. ▪ – Understanding the limitations faced by engineers and how to overcome them using the principles of concrete technology. ▪ – Clarifying and explaining the relationship between the branches of civil engineering. ▪ – Providing students with an understanding of the theoretical foundations of concrete laboratory equipment. ▪ – Introducing the relationship between different sciences and concrete science.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week–1	2	Definition of Cement		Attendance	Daily tests
Week–2	2	Manufacture of cement		Attendance	Homework
Week–3	2	Hydration of cement		Attendance	Homework
Week–4	2	Setting of cement		Attendance	Daily tests
Week–5	2	Physical properties of cement		Attendance	Reports,
Week–6	2	Types of cement		Attendance	posters,
Week–7	2	Special types of cement		Attendance	Small projects
Week–8	2	Definition of aggregates		Attendance	Monthly test
Week–9	2	Physical properties of cement		Attendance	Daily tests
Week–10	2	Mechanical properties of aggregate		Attendance	Homework
Week–11	2	Hurtful materials in aggregate		Attendance	Homework
Week–12	2	Alkali– aggregates silica reaction		Attendance	Daily tests
Week–13	2	Sieve analysis of aggregates		Attendance	Reports,
Week–14	2	Mix design (British method)		Attendance	posters,
Week–15	2	Mix design (ACI method)		Attendance	Monthly test

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	2	Fineness of cement test		*Attendance*	*Report*
Week-2	2	Normal consistency of cement test		*Attendance*	Report
Week-3	2	Initial and final set of cement test		*Attendance*	Report
Week-4	2	Specific Gravity of cement test		*Attendance*	*Report*
Week-5	2	Compressive strength of cement test		*Attendance*	*Report*
Week-6	2	Specific Gravity of coarse Aggregate		*Attendance*	*Report*
Week-7	2	Specific Gravity of fine Aggregate		*Attendance*	*Report*
Week-8	2	Moisture content of aggregates		*Attendance*	*Report*
Week-9	2	Unit weight of aggregates test		*Attendance*	*Report*
Week-10	2	Absorption of Aggregate test		*Attendance*	*Report*
Week-11	2	Crushing strength of aggregates		*Attendance*	*Report*
Week-12	2	Impact test of aggregates test		*Attendance*	*Report*
Week-13	2	Abrasion strength of aggregates		*Attendance*	*Report*
Week-14	2	Sieve analysis of coarse aggregates		*Attendance*	*Report*
Week-15	2	Sieve analysis of fine aggregates		*Attendance*	*Report*

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc

25% theory , 15% practice ,10 mid , 50 final

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Properties of concrete, Fifth Edition, A. M. Neville,

Recommended books and references (scientific journals, reports…)	Concrete Microstructure, Properties, and Materials, Mehta
Electronic References, Websites	

Course Description Form

1. Course Name:
Mathematics II
2. Course Code:
ENG005
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60
7. Course administrator's name (mention all, if more than one name)
Name: Atheer Muhammed Ali Jasim Email: atheer.muhammed@mu.edu.iq
8. Course Objectives

Course Objectives	1. This module develops your knowledge and understanding of the mathematics underpinning engineering. It develops your ability to apply these techniques within an engineering context. 2. Recognize that mathematics permeates the world around us. 3. Appreciate the usefulness, power and beauty of mathematics. 4. Mathematics and develop patience and persistence when solving problems. 5. Understand and be able to use the language, symbols and notation of mathematics. **6**. Use inductive and deductive reasoning when solving problems.
9. Teaching and Learning Strategies	
Strategy	Type something like: The main strategy that will be adopted in delivering this mod is to Use basic algebraic manipulations, matrices and mathematical functions proficiently in the analysis and solution of engineering problems and apply mathematical equations in solutio of engineering problems and apply differential and integral calculus proficiently in the analysis ar solution of engineering problems.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Identify the parametric equations.	Parametric Equations; Calculus of Parametric Curves	Attendance	**Assignment**
Week-2	*4*	*Explain the applications of parametric equations*	Parametric Equations; Tangent Lines And Arc Length For Parametric Curves.	Attendance	**Assignment**
Week-3	*4*	1-Identify the polar coordinates. *2*-Explain the applications of polar coordinates in real life. 3-Identify polar graphing and polar equations. 4-Explain the Intersection of	Polar coordinates: Definition of polar coordinates, polar equations and graphs.	Attendance	**Assignment**

		two polar curves. 5-Describe of polar plane areas			
Week-4	*4*	1-Explain the difference between polar coordinates and Cartesian coordinates. 2-Explain how the student can Change equations from polar to Cartesian and vice versa. 3-Explain the Polar Arc length.	Polar coordinates: Relating Polar and Cartesian Coordinates, Graphing in Polar Coordinates.	Attendance	**Assignment**
Week-5	*4*	1-Define of conic sections 2-Explain the applications of conic sections in buildings like bridges and	Introduction to Conic sections- Parabola	Attendance	**Quizze**

		tunnels etc.			
Week-6	*4*	Identify the basic and types of conic sections	Conic sections-Ellipse	Attendance	**Quizze**
Week-7	*4*	Solve the problems related to parabola-hyperbola ellipse and -circles and explain its applications in real life.	Conic sections-Hyperbola	Attendance	**Quizze**
Week-8	*4*	Identify the rectangular coordinates In 3-space; spheres; cylindrical surfaces	Rectangular Coordinates In 3-Space; Spheres; Cylindrical Surfaces	Attendance	**Report**
Week-9	*4*	*Explain the* vector algebra, scalars and vectors,	Vector Algebra, Scalars and Vectors,.	Attendance	**Report**

Week-10	*4*	*Explain the* unit vector, vector addition and subtraction, vectors and scalars, basic, scalar fields and vector fields	Unit Vector, Vector Addition and Subtraction, Vectors and scalars, basic, Scalar fields and vector fields.	Attendance	**Report**
Week-11	*4*	*Explain the* applications of vectors	Applications of Vectors.	Attendance	
Week-12	*4*	Identify the partial derivatives-derivatives and graph the functions of surface.	Partial derivatives-Derivatives and graph the functions of surface.	Attendance	*Homework*
Week-13	*4*	Identify the partial derivatives-derivatives and graph the functions of surface.	Partial derivatives-Derivatives and graph the functions of surface.	Attendance	*Homework*

Week-14	*4*	Identify the multiple integrals	Multiple Integrals	Attendance	*Homework*
Week-15	*4*	Identify the multiple integrals	Multiple Integrals	Attendance	**Assignment**

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					

Week-13					
Week-14					
Week-15					

12. Course Evaluation	
1- Two Quizzes (2) 10% (20), 2- Two Online Assignments (2) 3%(6), 3- Two Onsite assignments (2)۲ % (4), 4-Two Reports (2) 5% (10), 5- Midterm Exam 10% (10), 6-Final Exam 50% (50)	
13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	01- Calculus 10th edition H. Anton, 2015 02- Thomas Calculus 12th Edition Textbook 03- J. Bird "Basic Eng. Mathematics"5th Ed., 2010
Main references (sources)	Thomas Calculus 12th Edition Textbook Calculus v analytic geometry: by Howard Anton
Recommended books and references (scientific journals, reports...)	Thomas Calculus 12th Edition Textbook Calculus with analytic geometry: by Howard Anton
Electronic References, Websites	https://classroom.google.com/u/۰/c/ODExMTEwMzk۲MjM۲.

Course Description Form

1. Course Name:
Computer II
2. Course Code:
UNI005
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours/3
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Mohammed Alridha Email: zainabalridha@mu.edu.iq
8. Course Objectives

Course Objectives	▪ Introduce students to the MATLAB environment and programming structure, including script and function files. ▪ Enable students to apply matrix operations, statistical functions, and data manipulation in solving mathematical and engineering problems. ▪ Develop the ability to create program logic using conditional statements and iterative loops. ▪ Teach students to visualize data and results through 2D plotting techniques. ▪ Introduce symbolic computation, differentiation, integration, and the solution of linear systems using matrix algebra. ▪ Strengthen computational reasoning, algorithmic thinking, and professional software skills applicable to civil engineering practice. ▪ Provide basic knowledge of computer troubleshooting and introduce the principles, applications, and tools of Artificial Intelligence **(AI)**.

9. Teaching and Learning Strategies

Strategy	Teaching and learning in this module are based on a combination of theoretical lectures and practical laboratory sessions to develop both conceptual understanding and applied programming skills. ▪ Lectures introduce the fundamental concepts of MATLAB programming, problem-solv methods, and applications in civil engineering. ▪ Laboratory sessions provide hands-on experience in developing MATLAB scripts, usi functions, plotting data, and solving real engineering problems. ▪ Interactive demonstrations and guided exercises are used to reinforce theoretical knowledge through immediate application. ▪ Assignments and mini projects encourage independent learning, problem analysis, an creativity in using MATLAB tools. ▪ Class discussions and feedback sessions help students reflect on their progress and strengthen their computational reasoning skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic	Learning Method	Assessment Method
Week 1	2	Recognizing the MATLAB environment and program interface	Introduction to MATLAB	Attendance	Discussion
Week 2	2	Learning how to create matrices and deal with them	Matrices in MATLAB	Attendance	Discussion
Week 3	2	Performing operations on matrices and vectors	Matrix and Vector Operations in MATLAB	Attendance	Discussion
Week 4	2	Understanding program structure using scripts	Scripts in MATLAB	Attendance	Discussion
Week 5	2	Creating reusable programs	Functions in MATLAB	Attendance	Discussion
Week 6	2	Assessing students' understanding of the basic concepts	First Monthly Exam	Attendance	Discussion
Week 7	2	Graphical representation of data	Plotting in MATLAB	Attendance	Discussion
Week 8	2	Using input and output commands	Input and Output Commands	Attendance	Discussion
Week 9	2	Assessing students' level	Midterm Examination	Attendance	Written exam
Week 10	2	Using iterative loops in programming	FOR and WHILE Loops	Attendance	Discussion
Week 11	2	• Solving equations, differentiation, and integration using MATLAB	Solving Linear Equations, Differentiation, and Integration	Attendance	Discussion
Week 12	2	Assessing students' programming skills	Second Monthly Exam	Attendance	Written exam
Week 13	2	Recognizing the basic methods of computer maintenance	Computer Maintenance	Attendance	Discussion
Week 14	2	Recognizing the basics of artificial intelligence	Introduction to Artificial Intelligence	Attendance	Discussion

Week 15	2	Ensuring students' understanding of the MATLAB environment	Review	Attendance	Work report

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Practical recognition of the MATLAB interface	Introduction to MATLAB	In-person	Practical application
Week 2	2	Training on creating matrices	Matrices in MATLAB	In-person	Practical application
Week 3	2	Applying operations to matrices	Matrix and Vector Operations	In-person	Practical application
Week 4	2	Writing scripts	Scripts	In-person	Practical application
Week 5	2	Creating functions	Functions	In-person	Practical application
Week 6	2	Assessing programming skills	First Monthly Exam	In-person	Practical application
Week 7	2	Drawing graphs and charts	Plotting	In-person	Practical application
Week 8	2	Applying input and output commands	Input and Output Commands	In-person	Practical application

Week 9	2	Assessing practical knowledge	Midterm Examination	In-person	Practical application
Week 10	2	Using iterative loops	FOR and WHILE Loops	In-person	Practical application
Week 11	2	Solving equations, differentiation, and integration	Linear Equations, Differentiation, and Integration	In-person	Practical application
Week 12	2	Assessing progress in skills	Second Monthly Exam	In-person	Practical application
Week 13	2	Applying computer maintenance	Computer Maintenance	In-person	Practical application
Week 14	2	Using artificial intelligence tools	Introduction to Artificial Intelligence	In-person	Practical application
Week 15	2	Ensuring students' understanding of the MATLAB environment	Review	In-person	Project

12. Course Evaluation

Formative Assessment:

Short quizzes: 20%

Assignments: 15%

Report: 5%

Examinations:

Midterm examination: 10%

Final examination: 50%

Total = 100%	
13. Learning and Teaching Resources	
Required textbooks (curricu books, if any)	**Houcque, D., 2005. Introduction to Matlab for Engineer Students. Northwestern University.**
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://classroom.google.com/c/NzgwNjc5NTg0ODI3

Course Description Form

1. Course Name:
Fluids Mechanics
2. Course Code:
CVE214
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hrs./ 5 ECTS
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Amjad M. F. Hussein Email: Amjad.muhamad@mu.edu.iq
8. Course Objectives

Course Objectives	1- Introduce concepts, laws, observations, and models of fluids at rest and in motion and understand fluid behavior for engineering design and control of fluid systems for hydraulic structures.

	2- Develop competence with mass, energy, and momentum for determining resultant forces on hydraulic structures.
9. Teaching and Learning Strategies	
Strategy	Calculate static and dynamic forces on hydraulic structures. Determine pressure in a closed conduit carrying fluids. 1. Determine unknown factors with the help of dimensional analysis.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	*D4, D3, D2, D1*	Properties of fluids		Quiz
Week-2	*4*	*D4, D3, D2, D1*	dimensional and model analysis		*Report*
Week-3	*4*	*D4, D3, D2, D1*	pressure measurement		*Seminar*
Week-4	*4*	*D4, D3, D2, D1*	hydrostatic forces on surfaces		*Exam*
Week-5	*4*	*D4, D3, D2, D1*	buoyancy and floatation		Quiz
Week-6	*4*	*D4, D3, D2, D1*	Fluid kinematics		*Report*
Week-7	*4*	*D4, D3, D2, D1*	Fluid kinematics		*Seminar*
Week-8	*4*	*D4, D3, D2, D1*	Fluid dynamics		*Exam*

Week-9	*4*	*D4, D3, D2, D1*	Fluid dynamics		Quiz
Week-10	*4*	*D4, D3, D2, D1*	Flows through orifices		*Report*
Week-11	*4*	*D4, D3, D2, D1*	Flows over notches		*Seminar*
Week-12	*4*	*D4, D3, D2, D1*	Flows over weirs		*Exam*
Week-13	*4*	*D4, D3, D2, D1*	Laminar flow		Quiz
Week-14	*4*	*D4, D3, D2, D1*	Turbulent flow		*Report*
Week-15	*4*	*D4, D3, D2, D1*	Flow through pipes		*Seminar*

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*1*	*D4, D3, D2, D1*	Density and specific gravity of substance		Quiz
Week-2	*1*	*D4, D3, D2, D1*	Density and specific gravity of substance		*Report*
Week-3	*1*	*D4, D3, D2, D1*	Density and specific gravity of substance		Quiz
Week-4	*1*	*D4, D3, D2, D1*	Density and specific gravity of substance		Report
Week-5	*1*	*D4, D3, D2, D1*	The Viscosity		Seminar

Week-6	*1*	*D4, D3, D2, D1*	The Viscosity		Exam
Week-7	*1*	*D4, D3, D2, D1*	The Viscosity		Quiz
Week-8	*1*	*D4, D3, D2, D1*	The Viscosity		Report
Week-9	*1*	*D4, D3, D2, D1*	Hydrostatic pressure		Seminar
Week-10	*1*	*D4, D3, D2, D1*	Hydrostatic pressure		Exam
Week-11	*1*	*D4, D3, D2, D1*	Hydrostatic pressure		Quiz
Week-12	*1*	*D4, D3, D2, D1*	Hydrostatic pressure		Report
Week-13	*1*	*D4, D3, D2, D1*	Bernoulli's Equation		Seminar
Week-14	*1*	*D4, D3, D2, D1*	Bernoulli's Equation		Exam
Week-15	*1*	*D4, D3, D2, D1*	Bernoulli's Equation		*Quiz*

12. Course Evaluation	
Quiz; 15 Mark, Report; 10 Mark, Exam; 10 Mark, Seminal; 5 Marks	
13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Rajput, R.K., 2004. *A textbook of fl mechanics and hydraulic machines*. Chand Publishing.
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course description form

1. Course Name: Arabic Language and Literature
Arabic language
2. Course code:
3. Semester/Year 2025-2026
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Total study hours: 30 / Total units: 2
60
7. Name of the course coordinator (if there is more than one, mention it)
Name: Ahmed Qasim Mohammed e-mail :ahmed.kasim@mu.edu.iq
8. Course Objectives

Goals **Study material**	• To empower students with Arabic language skills and knowledge at all levels: phonological, morphological, syntactic, semantic, stylistic, and writing. • To enable them to interpret fundamental theories, concepts, and terminology in Arabic linguistics. • To develop students' listening, reading, and expression skills. • To deepen students' connection to Arab and Islamic heritage, allowing them to draw upon its ethical and social values in a way that resonates with contemporary Arab society. • To elevate Arabic linguistic and literary knowledge in an educational and cultural manner. • To cultivate creative and literary talents, and to develop linguistic appreciation and the ability to distinguish good texts from bad ones. • To enable students to apply linguistic knowledge through reading, writing, speaking, and listening, allowing them to write reports in Arabic correctly and avoid linguistic, spelling, and stylistic errors. • To instill self-learning habits and foster a lifelong learning approach.
9. Teaching and learning strategies	

Strategy	The educational strategy can be described as a roadmap for guiding students to optimal language use in their academic and professional lives, defining the boundaries of creativity, developing their language skills, and helping them avoid various types of linguistic errors: grammatical, morphological, spelling, and stylistic. The strategies we employ are diverse and vary depending on the curriculum, the learners' levels, and their individual differences. Among the most important of these strategies are: Active learning strategies to break monotony and rigidity, engaging the learner in the educational process and making them the central focus; dialogue strategies; storytelling strategies; project-based learning strategies; role-playing strategies; and self-directed and active learning strategies.

1. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Identify the course vocabulary	The origin of language, its theories, and its functions.	a lecture	Oral questions
Week 2	2	Knowledge of Arabic language sciences, their linguistic classifications	The characteristics of the Arabic language, its linguistic	Lecture and discussion	General and cultural oral questions

		and types, and the most prominent linguists	classifications and types, and the most prominent linguists.		
Week 3	2	Forming grammatically and spell-wise correct sentences	Parts of speech: noun, verb, particle. And types of sentences: nominal, verbal, and phrase.	A lecture and analysis of poetic verses and Quranic verses	General and cultural oral questions
Week 4	2	Identifying diptote nouns and their inflectional markers.	Diptotes (Nouns Prohibited from Declension)	Lecture and practical application on literary texts	Daily test
Week 5	2	Understanding the history of literature, literary knowledge, and identifying the (aesthetic features) of creative texts.	Literary Eras and Major Poetic Purposes in the Pre-Islamic and Islamic Periods.	Critical readings, open discussion, expressing viewpoints, deep reflection and comprehension of texts.	Intellectual discussion through presenting a research paper.

Week 6	2	Identifying types of sentences in Arabic and forming sentences according to their rules and structures	Grammatical Particles (Kana and its sisters; Inna and its sisters).	Lecture and grammatical applications on literary and Qur'anic texts.	Homework
Week 7	2	Measuring the academic level of previously studied material.	Midterm (Elongation) Test.	Written exam.	Written exam.
Week 8	2	Text analysis	The Umayyad Era and Its Most Important Characteristics and Poetic Purposes.	Critical reading and analysis of texts, followed by discussion of issues	Report.
Week 9	2	Knowing its rules and writing grammatically and morphologically correct sentences.	Sound Masculine Plural and What Is Attached to It.	Lecture and grammatical applications on literary and Qur'anic texts.	Homework

Week 10	2	Knowing writing standards according to the academic scientific methodology.	Spelling and Punctuation Marks.	Lecture and practical applications.	In-class assignment
Week 11	2	Understanding the aesthetic features of creative texts.	The Abbasid Era and its most important characteristics and poetic and prose purposes.	Analytical lecture	Report
Week 12	2	Knowing the rules related to the subject and producing speech free of linguistic errors	The Six Nouns (al-asmā' al-sittah).	Lecture and linguistic applications.	In-class test.
Week 13	2	Knowing the rules for writing numbers and counted nouns.	The grammatical inflection of numbers and counted nouns.	Lecture and grammatical applications.	Online test (via Google Form).
Week 14	2	Understanding the cultural, literary, and	The Modern Era and its most important characteristics	Discussion session.	Critical paper.

		intellectual issues of the era.	and poetic purposes.		
Week 15	2	Identify the course vocabulary	The origin of language, its theories, and its functions.	a lecture	Oral questions

14. Course Structure/ Lab					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					

Week-15					

15. Course Evaluation	
▪ Written examinations. ▪ Daily and surprise quizzes. ▪ Assessing students' level of comprehension of the prescribed material. ▪ Oral questions. ▪ Reports. ▪ Critical and research papers.	
16. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Lectures prepared according to the curriculum set by the department
Main references (sources)	Sharh Ibn 'Aqil 'ala Alfiyyat Ibn Malik (Explanation of Ibn 'Aqil on Alfiyyat Ibn Malik). Qatr al-Nada wa Ball al-Sada by Ibn Hisham al-Ansari. Al-Balaghah wa al-Tatbiq by Ahmad Matlub. Jawahir al-Balaghah by Ahmad al-Hashimi
Recommended books and references (scientific journals, reports...)	The Iraqi Language Academy – Al-Manhal – Al-Nour Library The Egyptian Arabic Language Academy in Cairo
Electronic References, Websites	https://youtube.com/playlist?list=PLUbGxXvC8t7GC9xxO9JFfwR-Z_xPvMJv-&si=Q-AEnHbXfAyvBCt1

Course Description Form

1. Course Name:	
Concrete Technology II	
2. Course Code:	
CVE223	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Abbas Abdulhussein Abd Noor Email: abbas652002@mu.edu.iq	
8. Course Objectives	
Course Objectives	• Understand the properties of fresh concrete including consistency and workability. • Perform and interpret standard tests such as slump test, compacting factor test, and Vebe test. • Identify causes and effects of segregation and bleeding in concre • Explain the principles of concrete mixing, compaction, a revibration. • Apply proper curing methods to improve durability and strength c concrete. • Evaluate different types of concrete strength (compressive, tensi and flexural strength)

9. Teaching and Learning Strategies	
Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	*Introduction to basic concepts, influencing factors, and test methods*	Consistency of concrete workability, factors affecting methods tests	*Presence*	Daily exam
Week-2	*2*	*Understand the meaning of workability and tests methods*	workability, factors affecting methods tests	*Presence*	*discussion*
Week-3	*2*	*Understand the meaning* Segregation and bleeding	Segregation, bleeding and mixing of concrete	*Presence*	Daily exam
Week-4	*2*	*Understanding concrete compaction and the meaning of ready-mixed and pumped concrete*	Compacting of concrete, concrete in hot weather , ready mixed concrete pumped concrete	*Presence*	*Daily exam*

Week-5	*2*	*Understanding types of strength*	Types of strength	*Presence*	*Daily exam*
Week-6	*2*	*Understanding factors affecting strength of concrete*	Factors affecting strength of concrete	*Presence*	*discussion*
Week-7	*2*	*Understanding* curing of concrete, bond strength between concrete and steel	Curing of concrete, bond strength between concrete and steel	*Presence*	*Daily exam*
Week-8	*2*	Understanding general equations	Modulus of elasticity and factors affecting it	*Presence*	*Daily exam*
Week-9	*2*	Understanding shrinkage of concrete	Shrinkage of concrete	*Presence*	*discussion*
Week-10	*2*	Understanding shrinkage of concrete and factors affecting it	Shrinkage of concrete and factors affecting it	*Presence*	*Daily exam*
Week-11	*2*	Understanding creep of concrete and factors affecting it	Creep of concrete and factors affecting it	*Presence*	*discussion*
Week-12	*2*	Understanding durability of concrete	Durability of concrete	*Presence*	*Daily exam*
Week-13	*2*	Understanding permeability of concrete,	Permeability of concrete, resistance of concrete to sulphate salts and acid attacks	*Presence*	*discussion*
Week-14	*2*	Understanding physical deterioration, chemical	Physical deterioration, chemical deterioration,	*Presence*	*Daily exam*

		deterioration, silica–aggregates reaction	silica–aggregates reaction		
Week–15	*2*	Understanding effect of frost on fresh and hardness, corrosion of reinforcement	Effect of frost on fresh and hardness, corrosion of reinforcement	*Presence*	*discussion*

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week–1	*2*	*Understanding type of slump*	Slump	*Presence*	Reports
Week–2	*2*	*Understanding compacting test*	Compacting	*Presence*	*Reports*
Week–3	*2*	*Understanding* concrete mix	Concrete mix	*Presence*	*Reports*
Week–4	*2*	*Understanding flexural test*	Flexural	*Presence*	*Reports*
Week–5	*2*	Understanding Compressive strength test	Compressive strength	*Presence*	*Reports*
Week–6	*2*	Understanding splitting test	Splitting	*Presence*	*Reports*
Week–7	*2*	Understanding Ultra–sonic test	Ultra–sonic	*Presence*	*Reports*
Week–8	*2*	Understanding core test	Core test	*Presence*	*Reports*
Week–9					

Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

-The formative **assessment** is 40% and includes:

Daily exam 16%

Class activity 4%

Assignments 5%

Practical 15%

2- Midterm exam 10%

3- Final exam 50%

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Concrete Technology (Adam M. Neville, J.J. Brooks)
Main references (sources)	Concrete-Microstructure-Properties-and-Materials
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Strength of materials II
2. Course Code:
CVE221
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60
7. Course administrator's name (mention all, if more than one name)
Name: Ali Majd Lafta Email: ali.majd@mu.edu.iq
8. Course Objectives

Course Objectives	1. Students will be able to analyze and draw shear and bending moment Diagrams. 2. Students will understand the bending stresses in beams. 3. Students will be able to identify the bending stresses in composite beams. 4. Students will understand the shear stresses in beams. 5. Students will be able to identify the shear center in beams. 6. Students will be able to identify the shear flow in beams. 7. Students will be able to identify the deflection of beams. 8. Students will be able to identify the compound stresses in beam.

9. Teaching and Learning Strategies

Strategy	The course adopts an educational strategy focused on building the student's analytical and mathematical capabilities, distributed according to the following methodological pillars: **1. Interactive Formal Lectures:** • Presenting the fundamental concepts and principles of Mechanics of Materials using illustrative aids. • Focusing on the derivation of laws and understanding the physical basis of stress and strain to ensure a deep cognitive grasp of the subject. **2. Tutorials & Discussion Sessions:** • Allocating intensive periodic hours to solve various applied problems covering different loading cases. • Encouraging academic dialogue within the classroom to analyze engineering problems and deduce optimal solution methods. **3. Self-Directed Learning:** • Urging students to research methodological references and textbooks to deepen understanding beyond the scope of the lecture. • Assigning periodic home assignments to enhance the ability for independent problem-solving and time management in accordance with ECTS requirements. **4. Continuous Assessment & Feedback:** • Conducting regular short tests (Quizzes) to monitor student progress and adjust the educational path promptly. • Providing detailed feedback on student-submitted solutions to develop their skills in mathematical analysis and graphical representation of problems.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	4	Introduction – analyze and draw shear and bending moment Diagrams by equations	Introduction – analyze and draw shear and bending moment Diagrams by equations	Face-to-Face (F2F)	Class Participation
Week-2	4	analyze and draw shear and bending moment Diagrams by equations	analyze and draw shear and bending moment Diagrams by equations	Face-to-Face (F2F)	Class Participation
Week-3	4	analyze and draw shear and bending moment Diagrams by equations	analyze and draw shear and bending moment Diagrams by equations	Face-to-Face (F2F)	Class Participation
Week-4	4	analyze and draw shear and bending moment Diagrams	analyze and draw shear and bending moment Diagrams	Face-to-Face (F2F)	Class Participation
Week-5	4	Quiz 1	Quiz 1	Face-to-Face (F2F)	Quiz
Week-6	4	deflection of beams	deflection of beams	Face-to-Face (F2F)	Class Participation

Week-7	4	deflection of beams	deflection of beams	Face-to-Face (F2F)	Class Participation
Week-8	4	Mid-term Exam	Mid-term Exam	Face-to-Face (F2F)	Mid-term Exam
Week-9	4	bending stresses in beams	bending stresses in beams	Face-to-Face (F2F)	Class Participation
Week-10	4	bending stresses in composite beams	bending stresses in composite beams	Face-to-Face (F2F)	Class Participation
Week-11	4	shear stresses in beams	shear stresses in beams	Face-to-Face (F2F)	Class Participation
Week-12	4	shear flow in beams	shear flow in beams	Face-to-Face (F2F)	Class Participation
Week-13	4	Quiz 2	Quiz 2	Face-to-Face (F2F)	Quizz
Week-14	4	compound stresses in beam	compound stresses in beam	Face-to-Face (F2F)	Class Participation
Week-15	4	prepared to final exam	prepared to final exam	Face-to-Face (F2F)	Class Participation

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					

Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

QUIZ (1) 8%

QUIZ (2) 8 %

MID TERM ١0%

Homework ٥%

Classroom activity 7%

Lab Reports 10

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Strength of materials, Ferdinand L.Singer/ Andrew Pytel
Main references (sources)	Mechanics of Materials, 11th edition Published by Pearson (July 7, 2022) © 2023 Russell C. Hibbeler
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Surveying II	
2. Course Code:	
CVE222	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Yousif A. Mousa + Lecturer Hadi Mohammed Email: yousif.mousa@mu.edu.iq /hadi.mohammed@mu.edu.iq	
8. Course Objectives	
Course Objectives	This unit aims to introduce students to surveying instruments such as the Global Positioning System (GPS), total stations, and theodolites, and to enable them to record angle and distance measurements in a way that is understandable to other professionals. Students should know how to determine horizontal control points, specifically known locations such as east and north coordinates, and understand different types of traverses,

	performing all the necessary calculations to obtain path coordinates from measured angles and distances. They are also expected to understand the geometric properties of circular curves and differentiate between various types of horizontal curves, as well as design curves with constant radii to connect straight sections of roads and railways. Furthermore, they should be able to determine circular curves using methods such as chord length and angle of inclination, displacement from the long chord, or coordinate techniques. Finally, students must understand the geometric properties of vertical curves, recognize slopes, and understand the limitations on their values.

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation theoretically and practically, while at the same time refining and expanding their critical thinking skills. This will be achieved through lectures, interactive tutorials, and by considering fieldwork. Lectures are provided first as a pdf (e.g., in Google class), before being explained in the class. Then, students ar given some examples to work on with some help

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	*General overview*	Introduction to Directions and angles systems	*Attendance*	Daily Quiz
Week-2	*2*	Fundamentals of Angular measurements	Angular measurements	*Attendance*	Discussion
Week-3	*2*	*Learning* Coordinates systems	Basics of Coordinates systems	*Attendance*	Daily Quiz and Report
Week-4	*2*	*Learning* Coordinates systems	Calculating coordinates	*Attendance*	Daily Quiz
Week-5	*2*	Traversing	Traversing	*Attendance*	Daily Quiz
Week-6	*2*	Traverse adjustment	Traverse adjustment	*Attendance*	Reports
Week-7	*2*	Exam	Exam	*Attendance*	Exam
Week-8	*2*	Setting out horizontal curves	Horizontal curves	*Attendance*	Discussion
Week-9	*2*	Setting out horizontal curves	Setting out horizontal curves	*Attendance*	Daily Quiz and Report
Week-10	*2*	Setting out Vertical curves	Vertical curves	*Attendance*	Daily Quiz
Week-11	*2*	Global Position System (GPS)	Setting out Vertical curves	*Attendance*	Discussion
Week-12	*2*	Global Position System (GPS)	Introduction to Global Position System (GPS)	*Attendance*	Reports

Week-13	*2*	Learning (GIS and/or Google earth)	Modern surveying software (e.g., GIS and/or Google earth)	*Attendance*	Daily Quiz
Week-14	*2*	*Exam*	*Exam*	*Attendance*	Exam
Week-15	*2*	*review*	Preparatory week before the final Exam	*Attendance*	Discussion

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*3*	Calculating volumes		*Attendance*	Discussion
Week-2	*3*	Fundamentals of Angular measurements	Angular measurements	*Attendance*	*Reports+Daily Quiz*
Week-3	*3*	directions and directions types	Calculating directions	*Attendance*	Discussion
Week-4	*3*	*Training on measuring horizontal and vertical angles.*	*setting up and balancing the instrument.+ measuring horizontal and vertical angles.*	*Attendance*	Daily Quiz and Report
Week-5	*3*	*Training on measuring horizontal and vertical angles.*	*setting up and balancing the instrument.+ measuring horizontal and v. angles.*	*Attendance*	Discussion

Week-6	*3*	*Measurement correction*	*using a theodolite.*	*Attendance*	
Week-7	*3*	*Exam*	*Exam*	*Attendance*	Discussion
Week-8	*3*	*Tachometric survey*	*Finding the heights*	*Attendance*	Reports
Week-9	*3*	lay out construction	lay out construction *by theo.*	*Attendance*	Reports
Week-10	*3*	*Setting out engineering projects*	*Signing of engineering projects by theo.*	*Attendance*	Reports
Week-11	*3*	*Setting horizontal c.*	*Setting horizontal c*	*Attendance*	Daily Quiz
Week-12	*3*	**GPS**	**GPS**	*Attendance*	Reports
Week-13	*3*	Total station	Total station	*Attendance*	Reports
Week-14	*3*	Total station	Total station	*Attendance*	Reports
Week-15	*3*	*Exam*	*Exam*	*Attendance*	*Exam*

12. Course Evaluation

1- Formative assessment (40%) includes:

Daily quizzes (16%)

Classroom and homework activities (9%)

Reports (7%)

Practical tests (8%)

2- Midterm exam (10%)

3- Final exam (50%)

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Walker, J., & Awange, J. L. (2017). Surveying for Civil and Mine Engineers: Theory, Workshops, and Practicals. Springer.
Main references (sources)	Uren and Price (2010), Surveying for Engineers, Fourth edition, Palgrave Macmillan.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Irrigation and Drainage Engineering
2. Course Code:
CVE224
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hrs./ 5 ECTS
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Amjad M. F. Hussein Email: Amjad.muhamad@mu.edu.iq
8. Course Objectives

Course Objectives	1- Introduce concepts, laws, observations, and models of irrigation and drainage. 2- Develop competence with Duty, delta, Irrigation and drainage canals design
9. Teaching and Learning Strategies	
Strategy	Design Irrigation and drainage canals

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	*D4, D3, D2, D1*	Introduction, Definition, Purpose	Attendance	Quiz
Week-2	*4*	*D4, D3, D2, D1*	Necessity, soil-water-plant relations	Attendance	*Report*
Week-3	*4*	*D4, D3, D2, D1*	Land Grading, Computation, Design Slope Calculations	Attendance	*Seminar*
Week-4	*4*	*D4, D3, D2, D1*	Earth Works Calculations, Infiltration	Attendance	*Exam*
Week-5	*4*	*D4, D3, D2, D1*	Infiltration equations, Field measurements	Attendance	Quiz
Week-6	*4*	*D4, D3, D2, D1*	Surface Irrigation, Efficiency, Adequacy	Attendance	*Report*
Week-7	*4*	*D4, D3, D2, D1*	Uniformity, Water Balance Concept, Water Front Advance	Attendance	*Seminar*
Week-8	*4*	*D4, D3, D2, D1*	Consumptive Use and Water Requirements	Attendance	*Exam*
Week-9	*4*	*D4, D3, D2, D1*	Net and Gross Depth	Attendance	Quiz
Week-10	*4*	*D4, D3, D2, D1*	Continuous and Intermitted Discharge	Attendance	*Report*
Week-11	*4*	*D4, D3, D2, D1*	Irrigation Scheduling	Attendance	*Seminar*
Week-12	*4*	*D4, D3, D2, D1*	Canals; Classification, general layout, numbering	Attendance	*Exam*
Week-13	*4*	*D4, D3, D2, D1*	Canal Design methods	Attendance	Quiz
Week-14	*4*	*D4, D3, D2, D1*	Drainage; Definition, Coefficient, Darcy Law	Attendance	*Report*

Week-15	*4*	*D4, D3, D2, D1*	Closed and open drains, filters, cross sectional design	Attendance	*Seminar*

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation	
Quiz; 15 Mark, Report; 10 Mark, Exam; 10 Mark, Seminar; 5 Marks. Mid Exam 10 marks, Final Exam 50 Mark,	
13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	*Punmia, Pande Lal, Ashok Kumar, Arun Kumar,* Irrigation and Water Power Engineering, *16Th ed., 2009*.
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
English II
2. Course Code:
UNI002
3. Semester / Year:
second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 / 50
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Mohammed Alridha Email: zainabalridha@mu.edu.iq
8. Course Objectives

Course Objectives	▪ Developing basic language skills: The course aims to help students acquire a improve their English language skills at the beginner level, including vocabula building, pronunciation improvement, and the development of grammatical understanding. ▪ Building communicative competence: It aims to enable students to use Englis effectively in various everyday situations by developing fluency, accuracy, and confidence in expressing themselves, understanding others, and participating basic conversations.

	▪ Developing language awareness: The course helps students understand the English language system, including grammar, vocabulary, and sentence structure, through explanations, examples, and practical activities. ▪ Enhancing reading and listening skills: It aims to improve students' ability to understand written and spoken texts in English at the beginner level by trainin them in reading and listening comprehension strategies

9. Teaching and Learning Strategies

Strategy	The strategies include the following: ▪ Communicative approach: Encouraging students to communicate effectively throu pair work, group discussions, and role play. ▪ Guided progressive learning: Providing structured support to students while gradually increasing the level of difficulty. ▪ Contextual learning: Presenting language in real-life contexts using visual aids a various teaching materials. ▪ Active learning: Engaging students in educational activities, games, and interacti exercises. ▪ Multisensory learning: Using auditory, visual, and kinesthetic aids to enhance learning. ▪ Formative assessment: Continuously evaluating students' progress through quiz and various activities.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic	Learning Method	Assessment Method
Week	Hours	Required Learning Outcomes	Unit / Topic	Learning Method	Assessment Method
Week 1	2	Introducing oneself, exchanging personal information professionally, and talking about engineering specializations and academic interests using the present simple	Unit 1: Getting to Know You	In-person	Class participation

Week 2	2	Describing daily activities and hobbies and linking them to university life or engineering work, such as studying, training, and working on a construction site	Unit 2: What Makes You Happy	In-person	Class participation
Week 3	2	Describing news and events using the simple past, such as project news or engineering developments	Unit 3: In the News	In-person	Class participation
Week 4	2	Talking about food, materials, and quantities, and using quantifiers with examples related to materials and resources used in daily life	Unit 4: Food and Drink	In-person	Class participation
Week 5	2	Assessing students' understanding of grammar and vocabulary through exercises and communicative situations related to study or engineering work	First Monthly Exam	In-person	Exam
Week 6	2	Expressing future plans, such as study plans or work in engineering projects, using **going to** and **will**	Unit 5: Looking Ahead	In-person	Class participation
Week 7	2	Using adjectives and comparison to describe things or places, such as comparing buildings, cities, or different facilities	Unit 6: The Way I See It	In-person	Class participation
Week 8	2	Talking about personal experiences using the present perfect, such as practical training or field visits to projects	Unit 7: Living History	In-person	Class participation
Week 9	2	Expressing obligation and advice using **must**, **should**, and **have to** in safety or construction-site work contexts	Unit 8: Boys and Girls	In-person	Class participation

Week 10	2	• Assessing students' level in grammar, vocabulary, and communication skills	Second Monthly Exam	In-person	Exam
Week 11	2	Narrating stories or experiences using past tenses, such as the experience of visiting a project or an engineering event	Unit 9: Story Time	In-person	Class participation
Week 12	2	Using the passive voice to describe processes or things, such as how something is built or manufactured	Unit 10: Our Interactive World	In-person	Class participation
Week 13	2	Talking about personal experiences, life path, and study using the present perfect continuous	Unit 11: Life as You Make It	In-person	Class participation
Week 14	2	Expressing possibilities and decisions using conditional sentences and linking them to life or study situations	Unit 12: Just Wondering	In-person	Classroom assignment

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1					
Week 2					
Week 3					
Week 4					
Week 5					
Week 6					
Week 7					
Week 8					
Week 9					
Week 10					
Week 11					
Week 12					

Week 13					
Week 14					
Week 15					

12. Course Evaluation

Formative Assessment:

Short quizzes: 20%

Assignments: 15%

Report: 5%

Examinations:

Midterm examination: 10%

Final examination: 50%

Total = 100%

13. Learning and Teaching Resources

Required textbooks (curricu books, if any)	• Soars, J., & Soars, L. (2014). New Headway Pre-Intermediate Student's Book (4th Edition). Oxford University Press.
Main references (sources)	• Swan, M. (2016). Practical English Usage. Oxford University Press. • Murphy, R. (2019). English Grammar in Use. Cambridge University Press.
Recommended books and references (scientific journals, reports...)	• Harmer, J. (2007). How to Teach English. Longman. • Scrivener, J. (2011). Learning Teaching: The Essential Guide to English Language Teaching. Macmillan.
Electronic References, Websites	• Oxford Online Learning Resources • Cambridge English Learning Resources • British Council – Learn English

Course Description Form

1. Course Name:
Ba'ath Party crimes
2. Course Code:
UN10010
3. Semester / Year:
second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60
7. Course administrator's name (mention all, if more than one name)
Name: PhD-anwar kareem najeem Email: anwar.kareem@mu.edu.iq
8. Course Objectives

Course Objectives	The objectives of the course are to understand the basic concepts of the subje of rights and democracy, the most important treaties and theories that resulted from this, and the protocols specific to each country.
9. Teaching and Learning Strategies	
Strategy	Teaching strategies include in-person lectures, classroom assignments, studer discussion groups, exams, and presentations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	6	International crimes	International crimes	Attendance	Daily test
Week-2	6	Environmental crimes	Environmental crimes	Attendance	Daily test
Week-3	6	policy Psychological crimes	policy Psychological crimes	Attendance	Daily test
Week-4	6	Mass graves Scorched earth	Mass graves Scorched earth	Attendance	Daily test
Week-5	6	Regional crimes	Regional crimes	Attendance	Daily test
Week-6	6	International Law	International Law	Attendance	Daily test
Week-7	6	The Universal Declaration of Human Rights	The Universal Declaration of Human Rights	Attendance	Daily test
Week-8	6	The Historical Roots of Democracy	The Historical Roots of Democracy	Attendance	Daily test
Week-9	6	The Historical Roots of Rights	The Historical Roots of Rights	Attendance	Daily test
Week-10	6	Freedoms	Freedoms	Attendance	Daily test
Week-11	6	Burning Orchards	Burning Orchards	Attendance	Daily test
Week-12	6	Chemical Weapons Attacks on Cities	Chemical Weapons Attacks on Cities	Attendance	Daily test
Week-13	6	Suppression of Uprisings	Suppression of Uprisings	Attendance	Daily test

Week-14	6	The Convention on the Elimination of All Forms of	The Convention on the Elimination of All Forms of	Attendance	Daily test
Week-15	6	Discrimination against Women	Discrimination against Women	Attendance	Daily test

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc	
13. Learning and Teaching Resources	
Required textbooks (curricular boo if any)	1. Arab Journal of Research on Rights 2. Arab Studies Journal – focusing on research related to democracy 3. Reports on Rights and Freedoms
Main references (sources)	1. The Book of Democracy and Human Rights 2. The Book of Private Rights 3. The Book of Public Democracy 4. The Book of Events Accompanying the Uprisings
Recommended books and references (scientific journals, reports…)	1. The Book of Freedoms 2. The Book of Repressive Policies 3. The Book of World Events Regarding Democracy
Electronic References, Websites	Electronic References, Websites… 1- Al Jazeera Net: Comprehensive reports on the Halabja massacre, the Anfal campaign, and the 1991 uprising. BBC Arabic: Political and social analysis of the regime's policies. 2- Wikipedia: The page "Violations attributed to Saddam Hussein" (useful for preliminary information, but its accuracy should be verified). 3- The Iraqi High Criminal Court: Its official website (not available in current search results, but the best source for the texts of judgments and indictments). 4- The United Nations (UN): UNAMI reports on mass graves and human rights violations..

Course Description Form

1. Course Name:
Buildings Construction
2. Course Code:
CVE225
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75
7. Course administrator's name (mention all, if more than one name)
Name: Atheer Muhammed Ali Jasim Email: atheer.muhammed@mu.edu.iq
8. Course Objectives

Course Objectives	1. This course aims to identify the different types of buildings and construction systems such as the load-bearing walls system, the structural system, frames, trusses, shells, the precast building system, and the sequence of stages and methods of construction in buildings. 2. The student follows the construction process from the moment of construction to its completion.

	3. The construction of buildings is followed up from the stage of bases ar foundations, then brickwork, stone construction, walls and openings, types of roofs, beams and columns, then designing stairs. 4. The course also deals with various finishing works such as plastering works, tile and marble works, painting works and insulation layers, aluminum and wood works and sanitary works. 5. The practical part includes structural drawing by Auto CAD.

9. Teaching and Learning Strategies

Strategy	Written and oral quizzes will depend on the material covered in class. This material comes from a variety of sources and may go beyond the information provided in the text. The quizzes and the final exam usually consist of both quantitative and qualitative questions. In all quizzes or final exam you will need to show all work on quantitative problems. Pay attention to significant figures. Group assignments will be open book, note and neighbor. The quizzeooos will be closed book, notes and neighbor. Assignments that cannot be read or are not presented in a professional engineering style will not receive credit. Final exam will be comprehensive. Extra work will be given to individual students to improve grades when possible. I will provide you with your overall grade after each exam. All graded work will used as a baseline for assigning grades. The following rating will be used for gradi

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	3	Know the different construction	Types of Buildings	Attendance	Assignment

		systems in buildings and their components.			
Week-2	3	Explanation of earthworks and the types of machinery and equipment used in excavation work.	earthworks	Attendance	Assignment
Week-3	3	Identifying the types of foundations and their relationship to soil properties, as well as identifying the settlement that occurs in foundations and the types of settlement.	Footing and Foundations	Attendance	Assignment
Week-4	3	A detailed explanation of pile types, their uses, how to fix them in the soil using drilling and excavation equipment, and how to perform load testing on piles.	Piles and Piling	Attendance	Assignment

Week-5	3	Understanding concrete mixes, types of cement and aggregates used in concrete mixes, and identifying the types of additives used in these mixes	Concrete Works	Attendance	Assignment
Week-6	3	Understanding concrete mixes, types of cement and aggregates used in concrete mixes, and identifying the types of additives used in these mixes	Concrete Works	Attendance	Quizze
Week-7	3	Identifying the types of bricks and their specifications, as well as identifying all the bonding methods used in brick construction, bonding materials, and structural joints in bricks.	Bricks and Blocks work	Attendance	Quizze
Week-8	3	Understanding the geometric	Masonry Works	Attendance	Quizze

		properties of stones, their types, and where they are used in construction.			
Week-9	3	Identifying the types of molds according to their materials and uses, as well as identifying the factors affecting mold design.	Form works and Scaffolding	Attendance	Homework
Week-10	3	Understanding flooring types, factors influencing flooring and ceiling selection, and floor finishing.	Floors and Roofs, Arches	Attendance	Homework
Week-11	3	Understanding the arches, upper and lower lintels used in construction, and the rules for receiving them	Lintels and Sills	Attendance	Homework
Week-12	3	Understanding the damage caused by moisture and its leakage points in buildings, as well as understanding	Damp Proofing	Attendance	Homework

		the properties of moisture-proofing materials and how to protect ceilings and floors with these materials in construction.			
Week-13	3	Understanding wall and ceiling finishing techniques, as well as identifying the types of paints used in finishing work.	Finishing of Walls and Ceilings	Attendance	Quizze
Week-14	3	Identifying the most commonly used methods for moving between levels in the facility	Doors and Windows, Means of Moving Between Levels	Attendance	Assignment
Week-15	3	Identifying the types of structural joints in buildings	Fire Places and Chimneys and Joints in Buildings	Attendance	Homework

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	Identifying the types of foundations and	Footing and Foundations	Attendance	Report

		their relationship to soil properties, as well as identifying the settlement that occurs in foundations and the types of settlement.			
Week-2	*2*	Identifying the types of foundations and their relationship to soil properties, as well as identifying the settlement that occurs in foundations and the types of settlement.	Footing and Foundations	Attendance	Report
Week-3	*2*	A detailed explanation of pile types, their uses, how to fix them in the soil using drilling and excavation equipment, and how to perform load testing on piles.	Piles and piling	Attendance	Report
Week-4	*2*	A detailed explanation of pile types, their	Piles and piling	Attendance	Report

		uses, how to fix them in the soil using drilling and excavation equipment, and how to perform load testing on piles.			
Week-5	*2*	Identifying the types of bricks and their specifications, as well as identifying all the bonding methods used in brick construction, bonding materials, and structural joints in bricks.	Bricks and Blocks work	Attendance	Report
Week-6	*2*	Identifying the types of bricks and their specifications, as well as identifying all the bonding methods used in brick construction, bonding materials, and structural joints in bricks.	Bricks and Blocks work	Attendance	Report

Week-7	*2*	Identifying the types of bricks and their specifications, as well as identifying all the bonding methods used in brick construction, bonding materials, and structural joints in bricks.	Bricks and Blocks work	Attendance	Quizze
Week-8	*2*	Identifying the types of bricks and their specifications, as well as identifying all the bonding methods used in brick construction, bonding materials, and structural joints in bricks.	Bricks and Blocks work	Attendance	Quizze
Week-9	*2*	Distinguish the severity of errors during the construction process.	Lintels and Sills	Attendance	Quizze
Week-10	*2*	Understanding the arches, upper and lower lintels used in	Lintels and Sills	Attendance	Quizze

		construction, and the rules for receiving them			
Week-11	*2*	Understanding the damage caused by moisture and its leakage points in buildings, as well as understanding the properties of moisture-proofing materials and how to protect ceilings and floors with these materials in construction.	Damp Proofing	Attendance	Quizze
Week-12	*2*	Understanding the damage caused by moisture and its leakage points in buildings, as well as understanding the properties of moisture-proofing materials and how to protect ceilings and floors with these materials in construction.	Damp Proofing	Attendance	Quizze
Week-13	*2*	Identifying the most commonly	Doors and Windows, Means	Attendance	Quizze

		used methods for moving between levels in the facility	of Moving Between Levels		
Week-14	*2*	Identifying the types of structural joints in buildings	Fireplaces and Chimneys and Joints in Buildings	Attendance	Quizze
Week-15	*2*	Identifying the types of structural joints in buildings	Fireplaces and Chimneys and Joints in Buildings	Attendance	Quizze

12. Course Evaluation

Two Quizzes (2) 10% (20), 2- Two Online Assignments (1) 9%(9), 3- Two Onsite assignments (1)5% (5), 4-Lab: Two Reports (2) 3% (6), 5- Midterm Exam 10% (10), 6-Final Exam 50% (50)

13. Learning and Teaching Resources

Required textbooks (curricu books, if any)	انشاء المباني – زهير ساكو وآرتين ليفون, ب مباني ومواد بناء-يوسف الدواف
Main references (sources)	انشاء المباني – زهير ساكو وآرتين ليفون, ب مباني ومواد بناء-يوسف الدواف
Recommended books and references (scientific journals, reports…)	Building Construction hand book, Roy Chudley and Roger Greeno, 20 Fundamentals of building construction: materials and methods, Edw Allen, J. Wiley & Sons, 2004,
Electronic Referenc Websites	https://classroom.google.com/u/٠/c/Nzg١Nzc٤MDU٤NjA٤

Course Description Form

1. Course Name:	
Soil mechanics	
2. Course Code:	
CVE 313	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
125/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Mohammad Fadhil Abbas Email: mohammadfashil@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ For understanding the basic principles of soil mechanics and applied that theoretical and experimental. ▪ For solving all the problems that dealing with soil mechanics
9. Teaching and Learning Strategies	
Strategy	Teaching strategies include in-person lectures, classroom assignments, stud discussion groups, exams, and presentations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	3	Introduction in soil mechanics	Introduction in soil mechanics	Attendance	Quiz
Week-2	3	Definition of soil and origin it	Definition of soil and origin it	Attendance	student discussion
Week-3	3	Physical properties of soil	Physical properties of soil	Attendance	student discussion
Week-4	3	Relationship among physical properties	Relationship among physical properties	Attendance	student discussion
Week-5	3	Relationship between water content and soil state	Relationship between water content and soil state	Attendance	student discussion
Week-6	3	Classification of soil	Classification of soil	Attendance	Quiz
Week-7	3	Exam	Exam	Attendance	Exam
Week-8	3	Compaction	Stresses in soil	Attendance	student discussion
Week-9	3	Total stress	Total stress	Attendance	student discussion
Week-10	3	Pore water pressure	Pore water pressure	Attendance	student discussion
Week-11	3	Effective stress	Effective stress	Attendance	student discussion
Week-12	3	Stresses on soil	Stresses on soil	Attendance	Quiz
Week-13	3	point load	point load	Attendance	student discussion
Week-14	3	Line load	Line load	Attendance	student discussion
Week-15	3	Distributed load	Distributed load	Attendance	Quiz

11. Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	2	Water content test	Water content test	Attendance	Experimentally groups
Week-2	2	Specific gravity	Specific gravity	Attendance	Experimentally groups
Week-3	2	Sieve analysis	Sieve analysis	Attendance	Experimentally groups
Week-4	2	Hydrometer test	Hydrometer test	Attendance	Experimentally groups
Week-5	2	Liquid limit test	Liquid limit test	Attendance	Experimentally groups
Week-6	2	Plastic limit test	Plastic limit test	Attendance	Experimentally groups
Week-7	2	Shrinkage limit	Shrinkage limit	Attendance	Experimentally groups
Week-8	2	Exam	Exam	Attendance	Experimentally groups
Week-9	2	Unit weight in lab.(standard proctor	Unit weight in lab.(standard proctor	Attendance	Experimentally groups
Week-10	2	Modified proctor	Modified proctor	Attendance	Experimentally groups
Week-11	2	Unit weight in field	Unit weight in field	Attendance	Experimentally groups
Week-12	2	Core cuter method	Core cuter method	Attendance	Experimentally groups
Week-13	2	Sand cone method	Sand cone method	Attendance	Experimentally groups
Week-14	2	Exam	Exam	Attendance	Experimentally groups
Week-15	2	Constant head	Constant head	Attendance	Experimentally groups

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamental of geotechnical engineering ,by Braja M. Dass, third edition ,2007
Main references (sources)	Craig's Soil mechanics by R.F. Craig, seventh edition,2004
Recommended books and references (scientific journals, reports...)	Soil mechanics fundamental and applications by Isao Ishibashi , second edition, 2015
Electronic References, Websites	

Course Description Form

1. Course Name:
Theory of structures-1
2. Course Code:
CVE312
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: Ali Khalil Ismael Al-Rifaie Email:ali.alrifaie@mu.edu.iq
8. Course Objectives

Course Objectives	▪ Enhance the student ability to analyses determinate structures ▪ Develop the student ability to specify structures determinacy and stability

	▪ Understanding the analysis and design concepts

9. Teaching and Learning Strategies

Strategy	The lecturer should explain the lecture contents to the student in the class. All related subjects are discussed deeply. Also, the students always are urged to review the textbook for more details. The problems listed in the textbook could be used for classwork and homework to improve the student's capability to deal with the analysis of different types of structures.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	4	Defining the principles	Introduction	attendance	Discussion
Week-2	4	Understanding Stability and determinacy of beams	Stability and determinacy of beams	Attendance	Quize, classwork and home work
Week-3	4	Understanding Stability and determinacy of frames	Stability and determinacy of frames	Attendance	Quize, classwork and home work
Week-4	4	Understanding Stability and determinacy of trusses	Stability and determinacy of trusses	Attendance	Quize, classwork and home work
Week-5	4	Understanding Analysis of frames	Analysis of frames	Attendance	Quize, classwork and home work
Week-6	4	Understanding Analysis of arches	Analysis of arches	Attendance	Quize, classwork

					and home work
Week-7	4	Exam-1	Exam-1	Attendance	Exam
Week-8	4	Understanding Analysis of trusses-Introduction	Analysis of trusses-Introduction and	Attendance	Quize, classwork and home work
Week-9	4	Understanding Section and joint method	Section and joint method	Attendance	Quize, classwork and home work
Week-10	4	Midterm exam	Midterm exam	Attendance	Quize, classwork and home work
Week-11	4	Understanding Influence lines-Introduction	Influence lines-Introduction	Attendance	Quize, classwork and home work
Week-12	4	Understanding Influence lines of beams-Reactions	Influence lines of beams-Reactions	Attendance	Quize, classwork and home work
Week-13	4	Understanding Influence lines of beams-shear and moment	Influence lines of beams-shear and moment	Attendance	Quize, classwork and home work
Week-14	4	Exam 2	Exam 2	Attendance	Exam
Week-15	4	Enhancing Presentation skills	Presentation exam	Attendance	Presentation

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

Course Name:	
Traffic Engineering I	
13. Course Code:	
CVE311	
14. Semester / Year:	
First Semester / 2025-2026	
15. Description Preparation Date:	
01/09/2025	
16. Available Attendance Forms:	
Attendance	
17. Number of Credit Hours (Total) / Number of Units (Total)	
60	
18. Course administrator's name (mention all, if more than one name)	
Name: Noorance Ali Razaq Email:noorance@mu.edu.iq	
19. Course Objectives	
Course Objectives	• to study and improve traffic performance of road networks and terminals. • to achieve efficient, free and rapid flow of traffic.

	• to eliminate traffic accidents and causalities as much as possible.

20. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises in the field of traffic engineering I, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering simple experiments involving some sampling activities that are interesting to the students.

21. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	3	Understanding road classification and characteristics	Introduction to traffic engineering and road characteristics	Attendance	Introduction lecture
Week-2	3	Understanding human behaviour and safety	Driver and pedestrian characteristics,	Attendance	Lecture and daily exam
Week-3	3	Understanding vehicle types	Vehicle classification and characteristics	Attendance	Lecture and daily exam
Week-4	3	Understanding forces affecting on motion	Vehicle motion	Attendance	Lecture and daily exam
Week-5	3	Exam 1	Exam 1	Attendance	Monthly exam
Week-6	3	Understandingtraffic flow characteristics	HV, PFR, PHF, TPF	Attendance	Lecture and daily exam
Week-7	3	Understandingtraffic flow characteristics	ADT, AADT, AWDT, DDF	Attendance	Lecture and daily exam
Week-8	3	Mid-term exam	Mid-term exam	Attendance	Mid-term exam
Week-9	3	Understandingspeed types and analysis	Spot speed studies and analysis	Attendance	Lecture and daily exam
Week-10	3	Understandingstrategies	Traffic calming	Attendance	Report
Week-11	3	Understandingstopping behaviour	Road geometry, SSD	Attendance	Lecture and daily exam

Week-12	3	Understandingpassing behaviour	Road geometry, PDS, ISD	Attendance	Lecture and daily exam
Week-13	3	Exam 2	Exam 2	Attendance	Monthly exam
Week-14	3	Understandingdesign of circular curve	Horizontal alignments	Attendance	Lecture and daily exam
Week-15	3	Understandingdesign of sag and crest curves	Vertical alignments	Attendance	Lecture and daily exam

22. Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	1	Understanding pedestrian safety	Exp.1: Pedestrian facilities	Attendance	Lecture
Week-2	1	Understanding pedestrian safety	Exp.1: Pedestrian facilities	Attendance	Daily oral and Report
Week-3	1	Understanding vehicle counting	Exp.2: Vehicle classification	Attendance	Lecture
Week-4	1	Understanding vehicle counting	Exp.2: Vehicle classification	Attendance	Daily oral and Report
Week-5	1	Exam 1	Exam 1	Attendance	Monthly exam
Week-6	1	Understanding traffic flow data	Exp.3: Traffic characteristics	Attendance	Lecture
Week-7	1	Understanding traffic flow data	Exp.3: Traffic characteristics	Attendance	Daily oral and Report
Week-8	1	Mid-term exam	Mid-term exam	Attendance	Mid-term exam
Week-9	1	Understanding speed collection methods	Exp.4: Spot speed measurement	Attendance	Lecture
Week-10	1	Understanding speed collection methods	Exp.4: Spot speed measurement	Attendance	Daily oral and Report
Week-11	1	Understanding speed analysis	Exp.5: Determination of design speed and speed limit	Attendance	Lecture

Week-12	1	Understanding speed analysis	Exp.5: Determination of design speed and speed limit	Attendance	Daily oral and Report
Week-13	1	Exam 2	Exam 2	Attendance	Monthly exam
Week-14	1	Understanding traffic rules	Exp.6: Road markings	Attendance	Daily oral
Week-15	1	Understanding traffic rules	Exp.6: Road markings	Attendance	Poster

23. Course Evaluation

Formative Assessment – 40%, which includes:

Monthly exams: 16%

Homework: 4%

Class activities: 5%

Practical component: 15%

Midterm Exam – 10%

Final Exam – 50%

24. Learning and Teaching Resources

Required textbooks (curricular book if any)	Highway Traffic Analysis and Design_R.J. Salter, 1996
Main references (sources)	Traffic and Highway Engineering Nicholas J. Garber and Lester A. Hoel Edition: 5 , Year: 2014
Recommended books and references (scientific journals, reports…)	1- Highway Capacity Manual by: Transportation Research Board, 2010.
Electronic References, Websites	https://pdfkeys.com/download/3486798-Traffic_Highway_Engineering_Garber_4th_Si_Edition.pdf

Course Description Form

1. Course Name:
Reinforced Concrete I
2. Course Code:
CVE314
3. Semester / Year:
First Semester / 2025-2026

4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 Hours
7. Course administrator's name (mention all, if more than one name)
Name: Othman Hameed Zinkaah Email: Othman.h.zinkaah@mu.edu.iq
8. Course Objectives

Course Objectives	• **Understand Material Behavior:** Comprehend the mechanical properties, stress-strain relationship, and combined behavior of concrete and reinforcing steel under various loading conditions. • **Apply Design Methods:** Master the fundamental principles of both the traditional Working Stress Design (WSD) method and the modern Ultimate Strength Design (USD) method. • **Analyze and Design Flexural Members:** Accurately analyze and design various reinforced concrete cross-sections (singly reinforced, doubly reinforced, T-sections, and L-sections) to safely resist bending moments. • **Implement Building Codes:** Apply standard structural codes (such as the ACI 318 Building Code) to determine nominal moment capacities, safety factors, and required reinforcement ratios. • **Evaluate Serviceability Limits:** Assess the everyday performance of concrete structures by calculating and controlling long-term deflections and crack widths to ensure durability and structural integrity. • **Simplify Complex Systems:** Utilize approximate analysis methods and code coefficients to quickly determine internal forces in continuous beams and one-way slab systems.

9. Teaching and Learning Strategies

Strategy	• **Interactive Theoretical Lectures:** Core concepts of concrete mechanics and flexural behavior will be introduced through traditional lectures, supported by visual aids, 3D structural diagrams, and real-world failure case studies to emphasize the importance of safe design. • **Guided Problem-Solving (Tutorials):** Because structural design is highly mathematical, significant class time will be dedicated to step-by-step whiteboard derivations and practical calculation examples. Students will practice applying formulas alongside the instructor. • **Code-Integrated Learning:** The course heavily emphasizes professional standards. Students will be continuously guided on how to read, interpret, and apply the ACI (American Concrete Institute) Building Code Requirements, preparing them for industry practice. • **Continuous Assessment and Feedback:** To ensure cumulative understanding, learning will be reinforced through regular homework assignments and weekly/monthly quizzes. This allows the instructor to identify and correct misconceptions before major midterm exams. • **Project-Based Application:** Students will engage in comprehensive design problems (such as fully detailing a doubly reinforced beam or a continuous T-beam system) that require them to synthesize multiple weeks of material into a single, cohesive engineering solution.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Define and understand the mechanical properties of concrete (compressive strength fc′, modulus of elasticity) and steel (yield strength fy).	Properties of Concrete and Reinforcing Steel	lectures	Homework, Quiz, mid and monthly exams.
Week-2	*4*	Identify and sketch the three stages of bending behavior: uncracked elastic, cracked elastic, and ultimate strength.	Behavior of Reinforced Concrete Beams Under Loading	lectures	Homework, Quiz, mid and monthly exams.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-3	*4*	Apply elastic design concepts and the "transformed area" method to analyze concrete cross-sections.	Working Stress Design Method	lectures	Homework, Quiz, mid and monthly exams.
Week-4	*4*	Calculate internal stresses under service loads and understand the limitations of the WSD method.	Working Stress Design Method	lectures	Homework, Quiz, mid and monthly exams.
Week-5	*4*	Calculate the nominal moment capacity (Mn) using the Ultimate Strength Design (USD) method and equivalent stress blocks.	Flexural Analysis of singly Reinforced concrete Beams	lectures	Homework, Quiz, mid and monthly exams.
Week-6	*4*	Proportion beam dimensions and calculate the required tension steel area (As), checking minimum/maximum limits.	Flexural Design of Singly Reinforced concrete Beams	lectures	Homework, Quiz, mid and monthly exams.
Week-7	*4*	Identify structural reasons for adding compression steel (As′) and understand its impact on beam ductility.	Flexural Analysis of Doubly Reinforced Concrete Beams	lectures	Homework, Quiz, mid and monthly exams.
Week-8	*4*	Determine if compression steel yields before failure and calculate the ultimate moment capacity of the section.	Flexural Analysis of Doubly Reinforced Concrete Beams	lectures	Homework, Quiz, mid and monthly exams.
Week-9	*4*	Design tension and compression reinforcement safely to resist high bending	Flexural Design of Doubly	lectures	Homework, Quiz, mid

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
		moments while ensuring a ductile failure mode.	Reinforced Concrete Beams		and monthly exams.
Week-10	*4*	Apply ACI Code moment and shear coefficients to quickly analyze continuous beams and one-way slabs.	Approximate Analysis of Continuous Beams	lectures	Homework, Quiz, mid and monthly exams.
Week-11	*4*	Understand monolithic slab-beam behavior and calculate the "effective flange width" for flanged sections.	Flexural Analysis of T and L sections	lectures	Homework, Quiz, mid and monthly exams.
Week-12	*4*	Analyze beam moment capacities based on whether the neutral axis falls within the flange or the web.	Flexural Analysis of T and L sections	lectures	Homework, Quiz, mid and monthly exams.
Week-13	*4*	Design the required steel reinforcement area for T and L sections subjected to positive and negative bending moments.	Flexural Design of T and L sections	lectures	Homework, Quiz, mid and monthly exams.
Week-14	*4*	Evaluate concrete members under service loads and calculate expected crack widths to comply with code limits.	Serviceability (Crack-Width)	lectures	Homework, Quiz, mid and monthly exams.
Week-15	*4*	Compute immediate deflections and long-term deflections caused by creep and shrinkage to ensure structural functionality.	Serviceability (Deflection)	lectures	Homework, Quiz, mid and monthly exams.

11. Course Evaluation

• Final **Written Exam: 50 marks** • Midterm **Exam: 10 marks** • Formative **Assessment: 40 marks**

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Design of Reinforced Concrete 10th Edition, By: Jack C. McCormac and Russell H. Brown, ISBN: 1118879108. 2- Building code requirement for structural concrete (ACI-318M-2014) and commentary.
Main references (sources)	Building code requirement for structural concrete (ACI-318M-2014) and commentary.
Recommended books and references (scientific journals, reports…)	1- Design of reinforced concrete: Jack C. McCormac, James K. Nelson. (2006) 2- Building code requirement for structural concrete (ACI-318M-2019) and commentary. 3- Design of Concrete Structures 14th Edition by Arthur Nilson, David Darwin, Charles Dolan (2014). 4- Design of concrete; a fundamental approach, 5th edition, E.G. Nawy, 2005 5- Design of reinforced concrete, 9th edition, Jack C. McCormac and Russell H. Brown, 2014. 6- Reinforced concrete, Mechanics and design; 7th edition, James K. wight, 2016.
Electronic References, Websites	https://www.youtube.com/watch?v=s41KdWuISkE

Course Description Form

1. Course Name:
Engineering economy and Project Management
2. Course Code:
CVE315
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hr / 4 units
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Khudair Mohammed Email: mohammed.khudair@mu.edu.iq
8. Course Objectives

Course Objectives	1. Understand the definition of engineering economic and how it affects the construction projects. 2. Understanding the time value of money 3. Understand the simple and compound interest 4. Understanding cash flow and how to draw a cash flow diagram

	5. Discuss the theory of economic such as supply and demand and earning power of money 6. Understand the financial operations. 7. Understanding the basics for Comparison of Alternatives 8. Understanding the depreciation and types of depreciation and how the depreciation affects the project cost. 9. Understand the engineering management and the difference between project management and construction management 10. Understand the project stages and the area knowledge of project management. 11. Understand the types of contracts and features of each type of contract. 12. Understand the different types of cost and time estimation of projects. 13. Understand what the scheduling is and how to prepare the bar chart of the project. 14. Understand, learn, and analyze the technique of the network diagram of time schedules such as Arrow Diagram and Precedence Diagram. 15. Understand what the scheduling by Program Evaluation and Review Technique (PERT) 16. Understanding how to reducing the project duration by (Crash Program) 17. Understanding how to schedule resources(Resources Allocation)

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through lectures and by considering a series of different exercises that are interesting to the students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	*Evaluation method*
Week-1	٤	Introduction of Engineering Economy (economic concepts and terminology), Objectives,Physical and Economic Environments of Projects,Efficiency,Profit and Interest,Supply and Demand	Introduction of Engineering Economy	Attendance	Seminars
Week-2	٤	Simple Interest & Compound Interest.	Simple Interest & Compound Interest.	Attendance	*Quizzes& H.W.*
Week-3	٤	Earning Power of Money , Time Value Of Money (TVOM), Cash Flows Over Time &Cash Flow Diagram	Earning Power of Money	Attendance	Seminars
Week-4	٤	Interest formulas(Financial operations) 1.Single Payment Compound Amount Factor, 2. Single Payment Present Worth Factor ,3. Equal Payment Series Compounded Amount Factor ,4. Equal Payment Series Sinking fund Factor ,Equal payment Series Capital Recovery Factor, Equal Payment Series Present Worth Factor, 5. Uniform Gradient Series Factor , 6. Geometric Gradient Series Factor	Interest formulas (Financial operations)	Attendance	*Quizzes& H.W.*

Week-5	٤	Non-Uniform (Uneven) Payment Series , Nominal and Effective Interest Rate	Non-Uniform (Uneven) Payment Series	Attendance	*H.W.*
Week-6	٤	Bases for Comparison of Alternatives (PW),(AE), (FW) &(IRR)	Bases for Comparison of Alternatives	Attendance	*quizzes*
Week-7	٤	Depreciation, Types Of Depreciation ,Methods of Depreciation Calculations (SLM),(DBM)&(SYD)	Depreciation	Attendance	*Quizzes& H.W.*
Week-8	٤	Midterm Exam	Midterm Exam	Attendance	Exam
Week-9	٤	Introduction to Project Management	Introduction to Project Management	Attendance	*Seminars*
Week-10	٤	Elements of Project Management , Types of contracts	Elements of Project Management	Attendance	*Seminars*
Week-11	٤	Stages of construction management	Stages of construction management	Attendance	*Seminars*
Week-12	٤	Planning and scheduling (Bar chart)	Planning and scheduling	Attendance	*Quizzes& H.W.*
Week-13	٤	Network Analysis Method (Activity On Arrow (AOA)) & Activity On Node (AON)	Network Analysis Method	Attendance	Quizzes& *H.W.*
Week-14	٤	PERT (Project Evaluation and Review Technique)	PERT Technique	Attendance	Quizzes& *H.W.*
Week-15	٤	Crash Program , Resources Allocation	Crash Program & Resources Allocation	*Attendance*	*Quizzes& H.W.*

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation
The total grade is 100% includes the following: 1- Formative Assessment 40%, which includes:

- Monthly exams 24%
- Daily exams 3%
- Classroom activities 3%
- Semester report/seminar 5%
- Homework 5%

2- Midterm exam 10%

3- Final exam 50%

13. Learning and Teaching Resources

Required textbooks (curricu books, if any)	Engineering Economy by Degarmo
Main references (sources)	Construction Planning, Equipment, and Methods (Arabic Version) by R. L Peurifoy and Translated by Dr. Mohammed S. Elizzi,
Recommended books and references (scientific journals, reports…)	1. Engineering Economy by William G. Sullivan Elin M. Wicks C. Patrick Koelling 2. Project Management Body of Knowledge (PMBOK) GUIDE.
Electronic References, Websit	https://classroom.google.com/c/ODE0NzY1NDc3ODU0?cjc=erfcuydw

Course Description Form

1. Course Name:
Engineering Analysis and Numerical Methods
2. Course Code:
CVE316
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75
7. Course administrator's name (mention all, if more than one name)
Name: Abbas Abdulhussein Abd Noor Prof. Dr. Youssef AbdulKazem Musa Email:abbas652002@mu.edu.iq
8. Course Objectives

Course Objectives	• an ability to apply knowledge of mathematics, science, and

	engineering, related to civil engineering, • an ability to design engineering system, component, or process to meet desired needs within realistic constraints, • an ability to identify, formulate, and solve civil engineering problems, • an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

9. Teaching and Learning Strategies

Strategy	The core strategy for delivering this module is to foster student engagement through active participation in exercises, with a parallel focus on honing and advancing their critical thinking abilities. This will be implemented via a blend of instructional classes, collaborative tutorials, and hands-on, simple experiments that incorporate relevant sampling activities to maintain student interest and reinforce theoretical concepts.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	3	Understanding the behavior of engineering systems, evaluating results and dealing with errors and approximations	Introduction	Presence	Daily exam
Week-2	3	Explain the concept of Ordinary Differential Equations of the First Order	Ordinary Differential Equations of the First Order	Presence	discussion
Week-3	3	Understand Ordinary Differential Equations of the First Order	Ordinary Differential Equations of the First Order	Presence	Daily exam
Week-4	3	Explain the concept ofDifferential Equations of the First Order	Ordinary Differential Equations of the First Order	Presence	Daily exam

Week-5	3	Explain the concept of Ordinary Linear Differential Equations	Ordinary Linear Differential Equations	Presence	Daily exam
Week-6	3	Explain theapplication of first order Ordinary Differential Equations	Application of first order Ordinary Differential Equations	Presence	discussion
Week-7	3	Identify sources of error and evaluate their impact on results.	Mid-term Exam	Presence	Daily exam
Week-8	3	Explain the concept ofsecond Order Differential Equations reduced of the First Order	Second Order Differential Equations reduced to first order DE	Presence	Daily exam
Week-9	3	Explain the concept ofSecond and Higher Order Linear Ordinary Differential Equations	Second and Higher Order Linear Ordinary Differential Equations	Presence	discussion
Week-10	3	UnderstandSecond and Higher Order Linear	Second and Higher Order Linear	Presence	Daily exam
Week-11	3	Understand Ordinary Differential Equations	Ordinary Differential Equations	Presence	discussion
Week-12	3	Understand Solve the System of Linear equations	Solve the System of Linear equations	Presence	Daily exam
Week-13	3	Understand Solution of non-homogeneous DE with constant coefficients	Solution of non-homogeneous DE with constant coefficients	Presence	discussion
Week-14	3	Understand Solve the Fourier Series	Fourier Series	Presence	Daily exam
Week-15	3	Understand Partial Differential Equations	Partial Differential Equations	Presence	discussion

Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	2	Understand the MATLAB environment, interface, and basic commands	Introduction	Presence	Daily exam
Week-2	2	Understand the basic interface and environment of MATLAB	MATLAB Overview	Presence	discussion
Week-3	2	Define approximation and explain its importance in numerical analysis.	Approximation and Error	Presence	Daily exam
Week-4	2	*Define approximation and explain its importance in numerical analysis*	Approximation and Error	Presence	Daily exam
Week-5	2	Explain the concept of root finding and the Intermediate Value Theorem	Solution of nonlinear equations (bi section method)	Presence	Daily exam
Week-6	2	Identify sources of error and evaluate their impact on results.	Practical test	Presence	Exam
Week-7	2	Explain the geometric interpretation of the method using tangent lines	Solution of nonlinear equations (Newton-Raphson method)	Presence	Daily exam
Week-8	2	Explain basic concepts of eigenvalues and eigenvectors	Matrices algebra	Presence	Daily exam
Week-9	2	Use Gaussian elimination and Gauss–Jordan elimination techniques	Solution of linear system	Presence	discussion
Week-10	2	Apply Cramer's Rule for small systems of equations	Solution of linear system	Presence	Daily exam
Week-11	2	Explain the concept of linear regression	Line fitting	Presence	discussion
Week-12	2	Explain the principle of the Least Squares Method	Curve fitting	Presence	Daily exam

Week-13	2	Explain the concept of Taylor series expansion	Solution of ordinary differential equation (Tayler method)	Presence	discussion
Week-14	2	Implement the Runge-Kutta method using MATLAB	Solution of ordinary differential equation (Range-kutta method)	Presence	Daily exam
Week-15	2	Identify sources of error and evaluate their impact on results.	Practical test	Presence	Exam

11. Course Evaluation

-The formative **assessment** is 40% and includes:

Daily exam 16%

Class activity 4%

Assignments 5%

Practical 15%

2- Midterm exam10%

3- Final exam 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Kreyszig, E., "Advanced Engineering Mathematics" , 8 th Ed., John Wiley and Sons, (1999)
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Chapra, S. C. and Canale, R. P. "Numerical methods for Engineers", 6th Ed., McGraw Hill, (2010)
Electronic References, Websites	

Course description form

1. Course Name:
Arabic Language
2. Course code:
UNI008
3. Semester/Year
2025-2026
4. Date this description was prepared:
1/9/2025
5. Available attendance forms:
attendance
6. Total study hours:
30 / Total units: 2
7. Name of the course coordinator (if there is more than one, mention it)
Name: Ahmed Qasim Mohammed e-mail :ahmed.kasim@mu.edu.iq
8. Course Objectives

Goals **Study material**	• To empower students with Arabic language skills and knowledge at all levels: phonological, morphological, syntactic, semantic, stylistic, and writing. • To enable them to interpret fundamental theories, concepts, and terminology in Arabic linguistics. • To develop students' listening, reading, and expression skills.

	• To deepen students' connection to Arab and Islamic heritage, allowing them to draw upon its ethical and social values in a way that resonates with contemporary Arab society. • To elevate Arabic linguistic and literary knowledge in an educational and cultural manner. • To cultivate creative and literary talents, and to develop linguistic appreciation and the ability to distinguish good texts from bad ones. • To enable students to apply linguistic knowledge through reading, writing, speaking, and listening, allowing them to write reports in Arabic correctly and avoid linguistic, spelling, and stylistic errors. • To instill self-learning habits and foster a lifelong learning approach.
9. Teaching and learning strategies	
Strategy	The educational strategy can be described as a roadmap for guiding students to optimal language use in their academic and professional lives, defining the boundaries of creativity, developing their language skills, and helping them avoid various types of linguistic errors: grammatical, morphological, spelling, and stylistic. The strategies we employ are diverse and vary depending on the curriculum, the learners' levels, and their individual differences. Among the most important of these strategies are: Active learning strategies to break monotony and rigidity, engaging the learner in the educational process and making them the central focus; dialogue strategies; storytelling strategies; project-based learning strategies; role-playing strategies; and self-directed and active learning strategies.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	2	Identify the course vocabulary	The origin of language, its theories, and its functions.	a lecture	Oral questions
Week-2	2	Knowledge of Arabic language sciences, their linguistic classifications and types, and the most prominent linguists	The characteristics of the Arabic language, its linguistic classifications and types,	Lecture and discussion	General and cultural oral questions

			and the most prominent linguists.		
Week-3	2	Forming grammatically and spell-wise correct sentences	Parts of speech: noun, verb, particle. And types of sentences: nominal, verbal, and phrase.	A lecture and analysis of poetic verses and Quranic verses	General and cultural oral questions
Week-4	2	Identifying diptote nouns and their inflectional markers.	Diptotes (Nouns Prohibited from Declension)	Lecture and practical application on literary texts	Daily test
Week-5	2	Understanding the history of literature, literary knowledge, and identifying the(aesthetic features) of creative texts.	Literary Eras and Major Poetic Purposes in the Pre-Islamic and Islamic Periods.	Critical readings, open discussion, expressing viewpoints, deep reflection and comprehension of texts.	Intellectual discussion through presenting a research paper.
Week-6	2	Identifying types of sentences in Arabic and forming sentences according to their rules and structures	Grammatical Particles (Kana and its sisters; Inna and its sisters).	Lecture and grammatical applications on literary and Qur'anic texts.	Homework
Week-7	2	Measuring the academic level of previously studied material.	Midterm (Elongation) Test.	Written exam.	Written exam.
Week-8	2	Text analysis	The Umayyad Era and Its Most Important	Critical reading and analysis of texts, followed	Report.

			Characteristics and Poetic Purposes.	by discussion of issues	
Week-9	2	Knowing its rules and writing grammatically and morphologically correct sentences.	Sound Masculine Plural and What Is Attached to It.	Lecture and grammatical applications on literary and Qur'anic texts.	Homework
Week-10	2	Knowing writing standards according to the academic scientific methodology.	Spelling and Punctuation Marks.	Lecture and practical applications.	In-class assignment
Week-11	2	Understanding the aesthetic features of creative texts.	The Abbasid Era and its most important characteristics and poetic and prose purposes.	Analytical lecture	Report
Week-12	2	Knowing the rules related to the subject and producing speech free of linguistic errors	The Six Nouns (al-asmā' al-sittah).	Lecture and linguistic applications.	In-class test.
Week-13	2	Knowing the rules for writing numbers and counted nouns.	The grammatical inflection of numbers and counted nouns.	Lecture and grammatical applications.	Online test (via Google Form).
Week-14	2	Understanding the cultural, literary, and intellectual issues of the era.	The Modern Era and its most important characteristics and poetic purposes.	Discussion session.	Critical paper.

Week-15	2	Identify the course vocabulary	The origin of language, its theories, and its functions.	a lecture	Oral questions

Course Description Form

1. Course Name:	
Engineering economy and Project Management	
2. Course Code:	
CVE315	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 hr / 4 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Mohammed Khudair Mohammed Email:mohammed.khudair@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ Understand the definition of engineering economic and how it affects the construction projects. ▪ Understanding the time value of money ▪ Understand the simple and compound interest ▪ Understanding cash flow and how to draw a cash flow diagram

	▪ Discuss the theory of economic such as supply and demand and earning power of money ▪ Understand the financial operations. ▪ Understanding the basics for Comparison of Alternatives ▪ Understanding the depreciation and types of depreciation and how the depreciation affects the project cost. ▪ Understand the engineering management and the difference between project management and construction management ▪ Understand the project stages and the area knowledge of project management. ▪ Understand the types of contracts and features of each type of contract. ▪ Understand the different types of cost and time estimation of projects. ▪ Understand what the scheduling is and how to prepare the bar chart of the project. ▪ Understand, learn, and analyze the technique of the network diagram of time schedules such as Arrow Diagram and Precedence Diagram. ▪ Understand what the scheduling by Program Evaluation and Review Technique (PERT) ▪ Understanding how to reducing the project duration by (Crash Program) ▪ Understanding how to schedule resources(Resources Allocation)
9. Teaching and Learning Strategies	
Strategy	▪ The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through lectures and by considering a series of different exercises that are interesting to the students.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	٤	Introduction of Engineering Economy (economic concepts and terminology), Objectives,Physical and Economic Environments of Projects,Efficiency,Profit and Interest,Supply and Demand	Introduction of Engineering Economy	*Attendance*	Seminars
Week-2	٤	Simple Interest & Compound Interest.	Simple Interest & Compound Interest.	*Attendance*	*Quizzes& H.W.*
Week-3	٤	Earning Power of Money , Time Value Of Money (TVOM), Cash Flows Over Time &Cash Flow Diagram	Earning Power of Money	*Attendance*	Seminars
Week-4	٤	Interest formulas(Financial operations) 1.Single Payment Compound Amount Factor, 2. Single Payment	Interest formulas (Financial operations)	*Attendance*	*Quizzes& H.W.*

		Present Worth Factor ,3. Equal Payment Series Compounded Amount Factor ,4. Equal Payment Series Sinking fund Factor ,Equal payment Series Capital Recovery Factor, Equal Payment Series Present Worth Factor, 5. Uniform Gradient Series Factor , 6. Geometric Gradient Series Factor			
Week-5	٤	Non-Uniform (Uneven) Payment Series , Nominal and Effective Interest Rate	Non-Uniform (Uneven) Payment Series	*Attendance*	*H.W.*
Week-6	٤	Bases for Comparison of Alternatives (PW),(AE), (FW) &(IRR)	Bases for Comparison of Alternatives	*Attendance*	*quizzes*
Week-7	٤	Depreciation, Types Of Depreciation ,Methods of Depreciation Calculations (SLM),(DBM)&(SYD)	Depreciation	*Attendance*	*Quizzes& H.W.*
Week-8	٤	Midterm Exam	Midterm Exam	*Attendance*	Exam

Week-9	٤	Introduction to Project Management	Introduction to Project Management	*Attendance*	*Seminars*
Week-10	٤	Elements of Project Management , Types of contracts	Elements of Project Management	*Attendance*	*Seminars*
Week-11	٤	Stages of construction management	Stages of construction management	*Attendance*	*Seminars*
Week-12	٤	Planning and scheduling (Bar chart)	Planning and scheduling	*Attendance*	*Quizzes& H.W.*
Week-13	٤	Network Analysis Method (Activity On Arrow (AOA)) & Activity On Node (AON)	Network Analysis Method	*Attendance*	Quizzes& *H.W.*
Week-14	٤	PERT (Project Evaluation and Review Technique)	PERT Technique	*Attendance*	Quizzes& *H.W.*
Week-15	٤	Crash Program , Resources Allocation	Crash Program & Resources Allocation	*Attendance*	*Quizzes& H.W.*

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

The total grade is 100% includes the following:

1- Formative Assessment 40%, which includes:

- Monthly exams 24%
- Daily exams 3%

- Classroom activities 3%
- Semester report/seminar 5%
- Homework 5%

2- Midterm exam 10%

3- Final exam 50%

13. Learning and Teaching Resources

Required textbo (curricular books, if any	Engineering Economy by Degarmo
Main references (sourc	Construction Planning, Equipment, and Methods (Arabic Version) by R. L Peurifoy and Translated by Dr. Mohammed S. Elizzi,
Recommended books and references (scientific journals, reports…)	3. Engineering Economy by William G. Sullivan Elin M. Wicks C. Patrick Koelling 4. Project Management Body of Knowledge (PMBOK) GUIDE.
Electronic Referenc Websites	https://classroom.google.com/c/ODE0NzY1NDc3ODU0?cjc=erfcuydw

Course Description Form

1. Course Name:	
Soil mechanics II	
2. Course Code:	
CVE 323	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
125/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Mohammad Fadhil Abbas Email: mohammadfashil@mu.edu.iq	
8. Course Objectives	
Course Objectives	For understanding the basic principles of soil mechanics and applied that theoretical and experimental . For solving all the problems that dealing with soil mechanics
9. Teaching and Learning Strategies	

Strategy	Teaching strategies include in-person lectures, classroom assignments, student discussion groups, exams, and presentations

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	3	One – dimensional consolidation theory	Consolidation	Attendance	Quiz
Week-2	4	Coefficient of consolidation , final consolidation settlement	Consolidation	Attendance	student discussion
Week-3	4	Degree of consolidation	Consolidation	Attendance	student discussion
Week-4	4	Problem of time rate of consolidation	Consolidation	Attendance	student discussion
Week-5	4	Problem on consolidation	Consolidation	Attendance	student discussion
Week-6	4	Shear strength of soil	Shear strength	Attendance	Quiz
Week-7	4	Exam	Exam	Attendance	Exam
Week-8	4	Mohr- coulomb failure criterion	Shear strength	Attendance	student discussion
Week-9	4	Shear strength parameter from direct shear test	Shear strength	Attendance	student discussion
Week-10	3	Shear strength parameter from triaxial test	Shear strength	Attendance	student discussion

Week -11	3	Shear strength parameter from triaxial test			
Week-12	4	Pore water pressure parameter	Shear strength	Attendance	student discussion
Week-13	2	Problems on shear strength	Shear strength	Attendance	Quiz
Week-14	2	Problems on shear strength	Shear strength	Attendance	student discussion
Week-15	2	Exam		Attendance	

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	2	Consolidation test	Consolidation	Attendance	*Experimentally groups*
Week-2	2	Consolidation test	Consolidation	Attendance	*Experimentally groups*
Week-3	2	Consolidation test	Consolidation	Attendance	*Experimentally groups*
Week-4	2	Consolidation test	Consolidation	Attendance	*Experimentally groups*
Week-5	2	Direct shear test	Shear strength	Attendance	*Experimentally groups*
Week-6	2	Direct shear test	Shear strength	Attendance	*Experimentally groups*
Week-7	2	Unconfined compression test	Shear strength	Attendance	*Experimentally groups*
Week-8	2	Exam		Attendance	
Week-9	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*
Week-10	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*

Week-11	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*
Week-12	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*
Week-13	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*
Week-14	2	Exam		Attendance	
Week-15	2	Triaxial test	Shear strength	Attendance	*Experimentally groups*

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamental of geotechnical engineering ,by Braja M. Dass, third edition ,2007
Main references (sources)	Craig's Soil mechanics by R.F. Craig, seventh edition,2004
Recommended books and references (scientific journals, reports...)	Soil mechanics fundamental and applications by Isao Ishibashi , second edition, 2015
Electronic References, Websites	

Course Description Form

1. Course Name:	
Hydrology	
2. Course Code:	
CVE325	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/02/2026	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Assist. Haider Araby Ibrahim, Dr. abbas abed Noor Email:arabyhaider@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ Delivering lectures ▪ Questions and discussions during lectures,practicalapplications, and site discussions. ▪ Classroom and extracurricular assignments.

9. Teaching and Learning Strategies

Strategy	▪ −Introducing students to the concepts and theories of hydrology ▪ − Understanding the limitations faced by engineers and how to overcome them using the principles of hydrology. ▪ − Clarifying and explaining the relationship between the branches of civil engineering. ▪ − Introducing the relationship between different sciences and hydrology science.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Hydrology, Introduction, and References		Attendance	Daily tests
Week-2	4	Hydraulic Cycle, Form of Precipitation		Attendance	*Homework*
Week-3	4	Precipitation measurement, Intensity – duration /Intensity-Duration-Frequency		Attendance	*Homework*
Week-4	4	Depth-Area-Time relationships/Estimating Missing Precipitation Data		Attendance	*Daily tests*
Week-5	4	Average Precipitation Depth over an area		Attendance	*Reports,*
Week-6	4	Evaporation and Transpiration, Infiltration and Examples		Attendance	*posters,*
Week-7	4	Methods of Determining Mean Velocity		Attendance	*Small projects*
Week-8	4	Slope – Area Method and Examples		Attendance	*Monthly test*
Week-9	4	Slope – Stage – Discharge Relation		Attendance	Daily tests
Week-10	4	Hydrograph, Components of Natural Hydrograph		Attendance	Homework
Week-11	4	Hydrograph Analysis, Unit Hydrograph		Attendance	Homework
Week-12	4	Changing Duration of Unit HydrographS-Curve		Attendance	Daily tests

Week-13	4	Flood Routing, Muskingum Flood		Attendance	Reports,
Week-14	4	Routing Method (Stream)		Attendance	posters,
Week-15	4	*Ground Water, Wells*		Attendance	Monthly test

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

40 monthly , 10 mid , 50 final

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	EngineeringHydrology, THIRD EDITION, K Subramanya
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Theory of structures-II
2. Course Code:
CVE 322
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: Ali Khalil Ismael Al-Rifaie Email:ali.alrifaie@mu.edu.iq
8. Course Objectives

Course Objectives	▪ Enhance the student's ability to analyse indeterminate structures ▪ Develop the student's ability to compare between determinate and indeterminate structures
9. Teaching and Learning Strategies	
Strategy	

	The lecturer should explain the lecture contents to the student on the class. All related subjects are discussed in deep. Also, the student always are urged to review the text-book for more details. The problems listed in the text-book could be used for classwork and home work to improve the students capability to deal with the analysis of different types of structures.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	4	Introduction to deflection	Understanding the principles	Attendance	quiz
Week-2	4	Deflection of beams	Understanding the subject	Attendance	discussion
Week-3	4	Deflection of frames	Understanding the subject	Attendance	Quiz and report
Week-4	4	Deflection of trusses	Understanding the subject	Attendance	quiz
Week-5	4	Exam-1	Exam-1	Attendance	Monthly exam
Week-6	4	Slope deflection method-Beams	Understanding the subject	Attendance	report
Week-7	4	Slope deflection method-non-sway frames	Understanding the subject	Attendance	report
Week-8	4	Slope deflection method-sway frames	Understanding the subject	Attendance	quiz
Week-9	4	Force method-beams and frames	Understanding the subject	Attendance	discussion
Week-10	4	Force method-trusses	Understanding the subject	Attendance	quiz
Week-11	4	Midterm exam	Understanding the subject	Attendance	exam
Week-12	4	Moment distribution of beams	Understanding the subject	Attendance	quiz

Week-13	4	Moment distribution of frames	Understanding the subject	Attendance	quiz
Week-14	4	Exam-2	Exam-2	Attendance	Monthly exam
Week-15	4	Review and preparing for final exam	Understanding the subject	Attendance	discussion

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					

Week-15					

12. Course Evaluation
Homework: 10 marks Exam-1: 10 marks Classwork: 10 marks Exam-2: 10 marks Midterm exam: 10 marks Final exam: 25 marks Final exam(Unified): 25 marks

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Structural Analysis by Hibbeller
Main references (sources)	Structural analysis by Aslam
Recommended books and references (scientific journals, reports…)	NA
Electronic References, Websites	NA

Course Description Form

1. Course Name:
Traffic Engineering II
2. Course Code:
CVE321
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/02/2026
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
٦٠
7. Course administrator's name (mention all, if more than one name)
Name: Noorance Ali Razaq Email:noorance@mu.edu.iq
8. Course Objectives

Course Objectives	• to study and improve traffic performance of road networks and terminals. • to achieve efficient, free and rapid flow of traffic. • to eliminate traffic accidents and causalities as much as possible.

9. Teaching and Learning Strategies	
Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises in the field of traffic engineeringII, while at

	the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering simple experiments involving some sampling activities that are interesting to the students.

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*3*	*Understanding* fundamental relationship	Speed-Flow-Density relationships	Attendance	Introduction lecture
Week-2	*3*	*Understanding roadflow regimes*	Road capacity and LOS	Attendance	Lecture &exam
Week-3	*3*	*Understanding time headways*	*Poisson distribution*	Attendance	Lecture & exam
Week-4	*3*	*Understanding time headways*	Negative exponential distribution	Attendance	Lecture & exam
Week-5	*3*	*Exam 1*	Exam 1	Attendance	Monthly exam
Week-6	*3*	*Understanding intersection design*	Intersection types, design and Control	Attendance	Lecture & exam
Week-7	*3*	*Understanding intersection design*	Design of signalized Intersections	Attendance	Lecture & exam
Week-8	*3*	*Understanding intersection design*	Control of signalized Intersections	Attendance	Lecture & exam
Week-9	*3*	*Mid-term exam*	*Mid-term exam*	Attendance	*Mid-term exam*
Week-10	*3*	*Understanding*road safety	*Accidents studies*	Attendance	Lecture & exam
Week-11	*3*	*Understanding parkings*	Parking design and control	Attendance	Lecture & exam

Week-12	*3*	*Understanding unsignalized intersection*	Roundabouts design and control	Attendance	Lecture & exam
Week-13	*3*	*Exam 2*	*Exam 2*	Attendance	Monthly exam
Week-14	*3*	*Understanding*bus transport	Public Transport, Bus transport requirement	Attendance	Lecture & exam
Week-15	*3*	*Understanding*railway engineering	Public Transport, railway engineering	Attendance	Lecture & exam

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*1*	*Understanding* fundamental relationship	*Exp.1:* Speed-Flow-Density relationships	Attendance	Lecture
Week-2	*1*	*Understanding* fundamental relationship	*Exp.1:* Speed-Flow-Density relationships	Attendance	*Daily oral and Report*
Week-3	*1*	*Understanding road flow regimes*	*Exp.2:* Road capacity and LOS	Attendance	Lecture
Week-4	*1*	*Understanding road flow regimes*	*Exp.2:* Road capacity and LOS	Attendance	*Daily oral and Report*
Week-5	*1*	*Exam 1*	*Exam 1*	Attendance	Exam 1
Week-6	*1*	*Understanding intersection design*	*Exp.3: Determination of cycle time and delays*	Attendance	*Daily oral and Report*
Week-7	*1*	*Understanding intersection design*	*Exp.3: Determination of cycle time and delays*	Attendance	Lecture
Week-8	*1*	*Understanding traffic safety*	*Exp.4: Accident data analysis*	Attendance	*Daily oral*

Week-9	*1*	*Mid-term exam*	*Mid-term exam*	Attendance	*Mid-term exam*
Week-10	*1*	*Understanding traffic safety*	*Exp.5: Traffic ITS*	Attendance	Poster
Week-11	*1*	*Understanding intersection design*	*Exp.6: Rotary analysis*	Attendance	Lecture
Week-12	*1*	*Understanding intersection design*	*Exp.6: Rotary analysis*	Attendance	*Daily oral and Report*
Week-13	*1*	*Exam 2*	*Exam 2*	Attendance	Exam 2
Week-14	*1*	*Understanding parkings*	*Exp.5: Parking design*	Attendance	Lecture
Week-15	*1*	*Understanding parkings*	*Exp.5: Parking design*	Attendance	*Daily oral and Report*

12. Course Evaluation

Formative Assessment: 40%, including:

Monthly examinations: 16%

Homework assignments: 4%

Classroom activities: 5%

Practical component: 15%

.Midterm Examination: 10%

Final Examination: 50% .

13. Learning and Teaching Resources

Required textbooks (curricular book if any)	Highway Traffic Analysis and Design_R.J. Salter, 1996
Main references (sources)	Traffic and Highway Engineering Nicholas J. Garber and Lester A. Hoel Edition: 5 , Year: 2014

Recommended books and references (scientific journals, reports…)	Highway Capacity Manual by: Transportation Research Board, 2010.
Electronic References, Websites	https://pdfkeys.com/download/3486798-Traffic_Highway_Engineering_Garber_4th_Si_Edition.pdf

Course Description Form

1. Course Name:
Methods of Construction andEngineeringEstimation
2. Course Code:
CVE 326
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hr / 4 units
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Khudair Mohammed Email:mohammed.khudair@mu.edu.iq
8. Course Objectives

Course Objectives	1. *Understand the Advantages of utilizing the construction equipment , its Classification & the Factor Affecting the Selection of Construction Equipment .* 2. Understand the Cost of Owning and Operating Construction Equipment

	3. Understand the Engineering Fundamentals (Coefficient of Traction , Drawbar pull , Rim pull) 4. Understand the Effect of rolling resistance (RR)& grade on required tractive effort 5. Understand the types and uses of several construction machines, such as Scrapers, Bulldozers, Hoes, Trucks, mixers and so on. 6. Understand the Productivity of construction equipment Bulldozer , Scraper , Backhoe and Excavators, Power Shovel 7. Understand the Equipment for Production and Transportation of Concrete 8. Understand the Line of Balance scheduling method 9. Understand the Tasks of the quantity surveyor in the project stages & 10. Understand the Methods used to estimate the cost of projects approximately General rules in quantitative survey & Principles in selecting units of measurement for items 11. Understand the Methods of taking out quantities ,Bill of quantities , Principles of Earthworks Calculation & Earthworks computation Methods, how to calculate quantities of STONE MASONRY & BRICK MASONRY & Concrete blocks units. 12.. Understand the How to calculate the concrete quantities of the foundation, DPC, columns, beams & slab , Estimating the quantities of reinforcing steel bar 13. Understand the Estimation of Finishing work includes enclosing interior walls and ceilings, installing finished flooring, cabinetry, doors, moldings, cover interior and exterior surfaces, Estimation of Wooden Forms 14. Understand the Rate analysis 15. Understand the Technical Specifications Contract Documents
9. Teaching and Learning Strategies	

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through lectures and by considering a series of different exercises that are interesting to the students.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	٤	*Understand the Advantages of utilizing the construction equipment , its Classification& the Factor Affecting the Selection of Construction Equipment.*	Introduction Construction Equipment*&Factor Affecting the Selection of Construction Equipment*	*Attendance*	Seminars
Week-2	٤	*Understand the* Cost of Owning and Operating Construction Equipment	*The Cost of Owning and Operating Construction Equipment*	*Attendance*	*Quizzes& H.W.*
Week-3	٤	*Understand the Engineering Fundamentals (Coefficient of*	Engineering Fundamentals (Coefficient of Traction ,Drawbar pull ,Rim pull)	*Attendance*	*Quizzes& H.W.*

		Traction , Drawbar pull , Rim pull)			
Week-4	٤	*Understand the* Effect of rolling resistance(RR)& grade on required tractive effort	*Effect of rolling resistance (RR)& grade on required tractive effort*	*Attendance*	*Quizzes& H.W.*
Week-5	٤	*Understand the* types and uses of several construction machines, such as Scrapers, Bulldozers, Hoes, Trucks, mixers and so on.	*Types and uses of several construction machines, such as Scrapers, Bulldozers, Hoes, Trucks, mixers and so on.*	*Attendance*	Seminars
Week-6	٤	*Understand the*Productivity of construction equipment Bulldozer , Scraper , Backhoe and Excavators, Power Shovel	Productivity of construction equipment Bulldozer , Scraper , Backhoe and Excavators, Power Shovel	*Attendance*	*Quizzes& H.W.*
Week-7	٤	*Understand the* Equipment for Production and Transportation of Concrete	Equipment for Production and Transportation of Concrete	*Attendance*	*Quizzes& H.W.*
Week-8	٤	*Mid* Exam	*Mid* Exam	*Attendance*	Exam

Week-9	٤	*Understand the* Line of Balance scheduling method	Line of Balance scheduling method	*Attendance*	*Quizzes& H.W.*
Week-10	٤	*Tasks of the quantity surveyor in the project stages &* Methods used to estimate the cost of projects approximatelyGeneral rules in quantitative survey*&* Principles in selecting units of measurement for items	Approximate Estimation*&*Detailed Estimation	*Attendance*	Seminars
Week-11	٤	Methods of taking out quantities*&* Bill of quantities , Principles of Earthworks Calculation*&* Earthworks *computation Methods* , How to calculatequantities ofSTONE MASONRY*&*BRICK MASONRY & Concrete blocks units.	Estimation ofEarthworks*&*Masonry Works	*Attendance*	Seminars,*Quizzes& H.W.*

Week-12	٤	*.How to calculate the concrete quantities of the foundation , DPC , columns , beams & slab ,* *Estimating the quantities of reinforcing steel bar*	Estimation of Concrete Works& steel reinforcement	*Attendance*	*Quizzes& H.W.*
Week-13	٤	*Estimation of Finishing work includes enclosing interior walls and ceilings, installing finished* *flooring, cabinetry, doors, moldings, cover interior and exterior surfaces,* *Estimation of Wooden Forms*	Estimation of finishing works&Wooden Forms	*Attendance*	*Quizzes& H.W.*
Week-14	٤	Rate analysis	Pricing	*Attendance*	*Quizzes& H.W.*
Week-15	٤	*Technical Specifications*	Technical Specifications&Contract Documents	*Attendance*	*Quizzes& H.W.*

		Contract Documents			

11. Course Structure/ Lab					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

The total grade is 100% includes the following:

1- Formative Assessment 40%, which includes:

- Monthly exams 24%
- Daily exams 3%
- Classroom activities 3%
- Semester report/seminar 5%
- Homework 5%

2- Midterm exam 10%

3- Final exam 50%

13. Learning and Teaching Resources

Required textbo (curricular books any)	Dutta, B.N., "Estimating and Costing in Civil Engineering", UBS Publishers & Distributors Pvt. Ltd., 2003.
Main referen (sources)	Construction Planning, Equipment, and Methods (Arabic Version) by R. L Peurifoy and Translated by Dr. Mohammed S. Elizzi,
Recommended books and references (scientific journals, reports…)	5. Kohli, D.D and Kohli, R.C., "A Text Book of Estimating and Costing (Civil)", S.Chand& Company Ltd., 2004
Electronic References, Websites	https://classroom.google.com/c/ODQ1MTUxNDA5NzAy?cjc=uspitc7g

Course Description Form

1. Course Name:
Foundation Engineering I
2. Course Code:
CE 402
3. Semester / Year:
First Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Basim Jabbar Abbas Email: **basim.jabar@mu.edu.iq**
8. Course Objectives

Course Objectives	Prepare the students to deal with soil investigation and then to use the field exploration data for determination the

	allowable bearing capacity for soil for all type of shallow foundations. check the design of foundation in type of shallow to be stable against both shear failure and settlement.

9. Teaching and Learning Strategies	
Strategy	Teaching strategies include in presence lectures, classroom assignments, student discussion groups, exams, and some time presentations.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	*Site investigation in the field*	Soil Investigation	*presence*	*Discussion and examination*
Week-2	*4*	*The used machines and tools.*	Soil Investigation machines	*presence*	*Discussion and examination*
Week-3	*4*	*The required test in the field.*	Soil tests in field	*presence*	*Discussion and examination*

Week-4	*4*	*Methods of calculating the tests*	Field test calculations	*presence*	*Discussion and examination*
Week-5	*4*	*Most theories*	Bearing capacity Theory	*presence*	*Discussion and examination*
Week-6	*4*	*Bearing capacities for spread footing*	Bearing capacity for shallow foundation	*presence*	*Discussion and examination*
Week-7	*4*	*Most equations for calculations*	Bearing capacity equations	*presence*	*Discussion and examination*
Week-8	*4*	Bearing capacities for spread footing subjected to moments.	Bearing capacity under uniaxial moment.	*presence*	*Discussion and examination*
Week-9	*4*	Bearing capacities for spread footing subjected to moments in 2 directions.	Bearing capacity under biaxial moment.	*presence*	*Discussion and examination*
Week-10	*4*	Bearing capacities for spread footing depending on the	Bearing capacity using field tests.	*presence*	*Discussion and examination*

		field tests parameters			
Week-11	*4*	*Understanding the concepts of footing design*	Shallow Foundation design	*presence*	*Discussion and examination*
Week-12	*4*	*Design of shallow spread footing..*	Design of spread Foundation.	*presence*	*Discussion and examination*
Week-13	*4*	*Design of combined footing including two columns*	Design of combined footing.	*presence*	*Discussion and examination*
Week-14	*4*	Design of combined footing including two far columns	Design of strap footing.	*presence*	*Discussion and examination*
Week-15	*4*	Design of footing including multi columns	Design of mat footing.	*presence*	*Discussion and examination*

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					

Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

- Distributing the score out of 100 as:
- 30% according to the daily discussion and monthly examinations.
- 70% as final examination.

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	▪ Principles of Foundation_Engineering,_9th_Edition,Das
Main references (sources)	▪ Foundation Analysis and Design; Bowles, 2006

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Steel Design I	
2. Course Code:	
CVE 411	
3. Semester / Year:	
First Semester/ 2025-2026	
4. Description Preparation Date:	
21/09/2025	
5. Available Attendance Forms:	
In-Person (Face-to-Face)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45 hrs. /3hrs. per week/ 2 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Hussein Kareem Sultan Email: Hussein.ksz@mu.edu.iq	
8. Course Objectives	
Course Objectives	• The subject aims to identify the student with the introduction about steel structures, • analysis and design of tension member,

	• analysis and design of compression member, • Design of Trusses, • Flexural Members.

9. Teaching and Learning Strategies

Strateg	1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams. 5. In-Class Questions and Discussions. 6. Connection between Theory and Application.

10. Course Structure/ Theoretical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction about steel structures	Introduction		
2	2	Types of steel buildings, design loads, and advantages and disadvantages of steel structures	Introduction		
3	2	Tension Member	Tension Member		
4	2	Analysis of Tension Members	Tension Member		
5	2	Net Area- Effective Net Area	Tension Member		
6	2	Design of Tension Members	Tension Member		
7	2	Monthly Exam-1			
8	2	Compression Member	Compression Member		
9	2	Analysis of Compression Members	Compression Member		
10	2	Column Theory and Euler Buckling	Compression Member		
11	2	AISC Requirements for Compression Members	Compression Member		

12	2	Compression Members with and without slender elements	Compression Member		
13	2	Compression Members with different slenderness ratio and Sidesway and Bracing Systems	Compression Member		
14	2	Design of Compression Members	Compression Member		
15	2	Monthly Exam-2			

11. Course Structure/ Practical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Steel Construction Manual; AISC; American Institute of Steel Construction Incorporation; 13th Edition; ASD & LRFD
Main references (sources)	McCormac, Jack, C.and Csernak, Stephen, F.; Structural Steel Design; 5th Edition, 2013, Pearson.
Recommended books and references (scientific journals, reports…)	Segui, Wiliam, T.; Design of Steel Structures, 4th Edition; 2007, Thomson.
Electronic References, Websites	

Course Description Form

1. Course Name:	
Sanitary and Environmental Eng.	
2. Course Code:	
CVE414	
3. Semester / Year:	
First Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Isam Alyaseri Email: ialyase@mu.edu.iq	
8. Course Objectives	
Course Objectives	(a) Understand the concept of sustainability and its relevance to civil engineering. (b) Explain drinking water characteristics and discuss regulations involved. (c) Understand the various units used in environmental engineering (e.g. equivalents and ppm).

	(d) Understand typical process flow diagrams for water treatment from intakes to distribution systems, and describe the unit processes and operations used and their purposes. (e) Understand different methods in water treatment systems and describe the general factors involved in choosing the type of treatment and design. (f) Conduct some lab tests related (e.g. turbidity, alkalinity, EC, chloride, pH, and jar test).

9. Teaching and Learning Strategies

Strategy	Key strategies for this course may include: • **Active Learning Methods**: Implement "think-pair-share," in-class reflections, "minute papers," and "muddiest point" exercises to immediately reinforce concepts. • **Case Studies & Real-World Projects**: Use case studies for analyzing environmental issues rather than just textbook reading. Assign group projects where students research, present, and write reports on specific environmental topics. • **Experiential and Field Activities**: Organize field trips to water/wastewater treatment plants or environmental facilities to provide practical, hands-on experience. • **Balanced Pedagogy**: Transition from fully PowerPoint-based lectures to a mix of board notes and slides (e.g., 50% / 50%) to improve student engagement. • **Contextualizing Content**: Connect theoretical material, such as material balances or chemical, biological, and physical processes, directly to sustainability and environmental protection scenarios.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	*Learning method*	*Evaluation method*

Week-1	2	Introduction to environmental engineering	Introduction	*Attendance*	Home work
Week-2	2	Understanding sustainability applications in engineering	Sustainability	Attendance	*Home work*
Week-3	2	Understanding drinking water treatment/water quality parameters, MCL, and hardness removal	Drinking water treatment	Attendance	Home work
Week-4	2	Understanding hardness removal, continue	Drinking water treatment	Attendance	Home work
Week-5	2	Understanding suspended solids removal/coagulation and flocculation tanks design.	Drinking water treatment	Attendance	Quiz#1
Week-6	2	Understanding suspended solids removal/sedimentation tank design	Drinking water treatment	Attendance	*Discussion*
Week-7	2	Drinking water treatment/filtration and chlorination disinfection	Drinking water treatment	Attendance	Home work
Week-8	*2*	Disinfection/microbial indicators and residual chlorine in the distribution systems	Drinking water treatment	Attendance	Discussion
Week-9	*2*	Disinfection using UV light and ozonation	Drinking water treatment	Attendance	Discussion

Week-10	*2*	Understanding sludge management and distribution systems		Attendance	Discussion
Week-11	*2*	Understanding distribution systems design/introduction to Water CAD	Distribution systems	Attendance	Discussion
Week-12	*2*	distribution systems design, continue	Distribution systems	Attendance	Quiz#2
Week-13	*2*	Microbial degradation in distribution systems	Distribution systems	Attendance	Discussion
Week-14	*2*	Understanding stormwater management/green infrastructures	Stormwater management	Attendance	Discussion
Week-15		Understanding basics of solid waste management and Topics reviewing			*Final exam*

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1		–			
Week-2		Introduction to lab work			
Week-3		Safety hints			
Week-4		Conducting pH test			Lab report
Week-5		–			*Quiz#1*
Week-6		Conducting Turbidity test			Lab report
Week-7		–			

Week-8		Conducting Solids test			Lab report
Week-9		–			
Week-10		Conducting EC test			Lab report
Week-11					
Week-12		Hardness test			Lab report
Week-13		–			Quiz#2
Week-14					
Week-15		Review			*Final exam*

12. Course Evaluation	
40% Student annual effort, which include: 20% monthly tests 5% class activity, and 10% lab reports, 5% home works + 60% final	
13. Learning and Teaching Resources	
Required textbooks (curricu books, if any)	Introduction to Environmental Engineering by Vesilind, P. Aarne; Susan Morgan and Lauren G. Heine, 2009, (3rd Editions). ISBN-13: 978-0-49 29. ISBN-10: 0-495-29583-3.
Main references (sources)	Great Lakes-Upper Mississippi River Board of State Sanitary Engine "Recommended Standards for Water Works" (Ten States Standards), 2(Ed., Health Education Services, New York.

Course Description Form

1. Course Name:	
Transportation Engineering I	
2. Course Code:	
CE 403	
3. Semester / Year:	
First Semester/ 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
In-Person (Face-to-Face)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
120 / 3	
7. Course administrator's name (mention all, if more than one name)	
Name: Hayder Kamil Shanbara + Jaber.A. Hussein Email: hayder.shanbara@mu.edu.iq + jabber.awadth@mu.edu.iq	
8. Course Objectives	
Course Objectives	• Have knowledge about to road system and highway engineering. • Interpret geometric design fundamentals, in relation to safety and driver comfort, focusing on horizontal and vertical alignment. • To provide a coherent development to the students for the courses in sector of Engineering like Transportation & Highways Engineering etc.

	• To present the foundations of many basic Engineering tools and concepts related Highways Engineering. • To give an experience in the implementation of Engineering concepts which are applied in field of Highways Engineering. • To involve the application of scientific and technological principles of planning, analysis, design and management to Highway Engineering.

9. Teaching and Learning Strategies

Strategy	Teaching Strategies include: Lectures, Seminars, simulation demonstrations, tutorials with worksheets and audio-visual presentations; Learning activities include: Individual design work, literature review/analysis, use of software and directed reading. The examination will assess your knowledge and understanding of highway and transportation engineering and your abilities of analysis and problem solving. The other learning outcomes should be achieved through the junction design exercise.

10. Course Structure/ Theoretical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Have knowledge about to road system and highway engineering	Introduction to Highway Engineering	Lecture + Discussion	Short quiz / Participation
2	2	Have knowledge about to road system and highway engineering	Functional Classification of Roads	Lecture + Examples	Short quiz
3	2	Have knowledge about to road system and highway engineering	Highway Components & Cross-Section Elements	Lecture + Visual aids	Homework assignment
4	2	Interpret geometric design fundamentals, in relation to safety and driver comfort, focusing on horizontal and vertical alignment	Geometric Design Fundamentals	Lecture + Problem	Quiz

5	2	Interpret geometric design fundamentals, in relation to safety and driver comfort, focusing on horizontal and vertical alignment	Horizontal & Vertical Alignment Principles	Lecture + Problem solving	Homework + Class exercise
6	2	To provide a coherent development to the students for the courses in sector of Engineering like Transportation & Highways Engineering etc	Pavement Characteristics	Lecture + Case studies	Assignment
7	2	To provide a coherent development to the students for the courses in sector of Engineering like Transportation & Highways Engineering etc	Sight Distance Concepts	Lecture + Numerical practice	Quiz
8	2	To provide a coherent development to the students for the courses in sector of Engineering like Transportation & Highways Engineering etc	Design of Superelevation & Transition Curves	Lecture + Problem solving	Quiz / Homework
9	2	To present the foundations of many basic Engineering tools and concepts related Highways Engineering	Horizontal Curve Design	Lecture + Worked examples	Midterm preparation exercise
10	2	To present the foundations of many basic Engineering tools and concepts related Highways Engineering	Vertical Curve Design	Lecture + Problem solving	Quiz
11	2	To give an experience in the implementation of Engineering concepts which are applied in field of Highways Engineering	Earth Works	Lecture + Lab demonstration	Assignment
12	2	To give an experience in the implementation of Engineering concepts which are applied in field of Highways Engineering	Estimating Earthwork Quantities	Lecture + Case studies	Quiz
13	2	To give an experience in the implementation of Engineering concepts which are applied in field of Highways Engineering	Layers Function	Lecture + Discussion	Participation + Assignment
14	2	To involve the application of scientific and technological principles of planning, analysis, design and management to Highway Engineering	Pavement Types and Materials	Lecture + Case studies	Final review test

15	2	To involve the application of scientific and technological principles of planning, analysis, design and management to Highway Engineering	Integrated Highway Design Project (Summary)	Lecture + Group discussion	Final exam

11. Course Structure/ Practical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Perform sieve analysis and classify subbase aggregates according to particle size distribution standards.	Sieve analysis test of subbase.	Lecture + Discussion	Exams, Hw & reports
2	2	Determine optimum moisture content and maximum dry density using compaction testing and interpret soil compaction behavior.	Density& moisture content relationship test of subbase	Lecture + Discussion	Exams, Hw & reports
3	2	Analyze compaction curves and evaluate suitability of subbase materials for pavement construction.	Density& moisture content relationship test of subbase	Lecture + Discussion	Exams, Hw & reports
4	2	Conduct California Bearing Ratio (CBR) testing and evaluate load-bearing capacity of subbase materials.	CBR test of subbase.	Lecture + Discussion	Exams, Hw & reports
5	2	Interpret CBR results to assess subgrade strength and pavement layer design implications.	CBR test of subbase.	Lecture + Discussion	Exams, Hw & reports
6	2	Perform asphalt penetration testing and classify asphalt binder consistency under standard temperature conditions.	Penetration test of asphalt.	Lecture + Discussion	Exams, Hw & reports
7	2	Evaluate asphalt binder grade suitability for pavement applications using penetration test results.	Penetration test of asphalt.	Lecture + Discussion	Exams, Hw & reports
8	2	Assess students' theoretical and practical understanding of subbase and asphalt laboratory testing procedures.	*1st month exam*	Lecture	

9	2	Determine asphalt softening point and analyze temperature susceptibility of bituminous materials.	Softening test of asphalt.	Lecture + Discussion	Exams, Hw & reports
10	2	Measure flash and fire points of asphalt and evaluate safety considerations during handling and heating operations.	Flash point test of asphalt.	Lecture + Discussion	Exams, Hw & reports
11	2	Conduct ductility testing and assess flexibility and cracking resistance of asphalt binder.	Ductility test of asphalt.	Lecture + Discussion	Exams, Hw & reports
12	2	Determine asphalt viscosity using Saybolt-Fural method and evaluate workability during mixing and compaction.	Saybolt-fural viscosity test of asphalt.	Lecture + Discussion	Exams, Hw & reports
13	2	Evaluate asphalt purity and identify presence of contaminants affecting binder performance.	*Purity test of asphalt*	Lecture + Discussion	Exams, Hw & reports
14	2	Assess aging characteristics of asphalt binder using Thin Film Oven Test and interpret durability performance.	Thin film oven test of asphalt	Lecture + Discussion	Exams, Hw & reports
15	2	Evaluate cumulative laboratory knowledge and analytical understanding through practical and theoretical examination.	*2nd month exam*	Lecture	

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc

13. Learning and Teaching Resources

Required textbooks (curricu books, if any)	•Principles of pavement design, By Yoder, E. and Witczak. M., 1975, 2nd edition, New York: John Wiley and Sons, Inc.

	•Principles and Practices of Highway Engineering, By L. R. Kadiyali (4th Edition 2008). •Highways, The Location, Design, Construction and Maintenance of Road Pavements. By Coleman O'Flaherty (4th Edition 2009).
Main references (sources)	•Deterioration and Maintenance of Pavements, By Derek Pearson (1st Edition 2013). •American Association of State Highway and Transportation Officials (AASHTO), (2003).
Recommended books and references (scientific journals, reports…)	•Deterioration and Maintenance of Pavements, By Derek Pearson (1st Edition 2013). •American Association of State Highway and Transportation Officials (AASHTO), (2003).

Course Description Form

1. Course Name:	
Foundation Engineering II	
2. Course Code:	
CE 422	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Basim Jabbar Abbas Email: **basim.jabar@mu.edu.iq**	
8. Course Objectives	
Course Objectives	Prepare the students to deal with determination the allowable bearing capacity for deep foundations, types of pile and method of installations. The student to be able for understanding the theories for calculation of lateral earth pressure and design of retaining walls, design of sheet piles.
9. Teaching and Learning Strategies	

Strategy	Teaching strategies include lectures, classroom assignments, student discussion groups, exams, and some time presentations.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*4*	Definition, types of piles and their structural characteristics	Deep foundation	*presence*	*Discussion* and examination
Week-2	*4*	Estimating Pile Length, Point bearing piles, Friction piles, Installation of piles, Load transfer mechanism	Definition of piles	*presence*	*Discussion* and examination
Week-3	*4*	Pile capacity in cohesionless soils, Pile capacity in cohesive soils (Lambda and alpha equations)	Pile capcity	*presence*	*Discussion* and examination
Week-4	*4*	Examples on item of third week, Pile capacity for (c−ϕ) soils	Examples of pile capacity	*presence*	*Discussion* and examination
Week-5	*4*	Determination of pile capacity from in situ tests (SPT), Negative skin friction, Tension piles	Pile Capacity using SPT	*presence*	*Discussion* and examination
Week-6	*4*	Group of piles: capacity (two modes of failure: single and block) and efficiency	Group of piles	*presence*	*Discussion* and examination
Week-7	*4*	Examples on item of sixth week, Pile groups subjected to moments, Pile load test	Pile groups subjected to moments	*presence*	*Discussion* and examination

Week-8	*4*	Settlement of pile and pile groups	Settlement of pile.	*presence*	*Discussion* and examination
Week-9	*4*	Introduction to lateral earth pressure theory, active lateral pressure by Rankine theory for (horizontal surface), Problems	Lateral earth pressure.	*presence*	*Discussion* and examination
Week-10	*4*	passive lateral pressure by Rankine theory for (horizontal surface), Active and Passive lateral pressure by Rankine theory for (inclined surface), Problems	Lateral earth pressure.	*presence*	*Discussion* and examination
Week-11	*4*	Coulomb theory for active and passive lateral pr Definitions and types of retaining walls, Geotechnical proportioning of Retaining walls, Application of lateral earth pressure theories to design, stability of retaining walls against overturning, pressure, Problems	Lateral earth pressure.	*presence*	*Discussion* and examination
Week-12	*4*	Definitions and types of retaining walls, Geotechnical proportioning of Retaining walls, Application of lateral earth pressure theories to design, stability of retaining walls against overturning,	Retaining walls.	*presence*	*Discussion* and examination

Week-13	*4*	Stability of retaining walls against sliding, overturning , Problems	Stability of retaining walls.	*presence*	*Discussion* and examination
Week-14	*4*	Introduction, types of sheet piles, Applications, Construction methods, Cantilever sheet piling penetrating sandy	Sheet piles.	*presence*	*Discussion* and examination
Week-15	*4*	Cantilever sheet piling penetrating clay , Problems	Sheet piles.	*presence*	*Discussion* and examination

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation	
Distributing the score out of 100 as: 30% according to the daily discussion and monthly examinations. 70% as final examination.	
13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of Foundation_Engineering,_9th_Edition,Das
Main references (sources)	Foundation Analysis and Design; Bowles, 2006
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Sanitary and Environmental Eng.II	
2. Course Code:	
CVE424	
3. Semester / Year:	
Second Semester / 2025-2026	
4. Description Preparation Date:	
01/09/2025	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Isam Alyaseri Email: ialyase@mu.edu.iq	
8. Course Objectives	
Course Objectives	▪ Explain wastewater characteristics and sewer system design. ▪ Understand the regulations and permits involved in wastewater treatment. ▪ Understand typical flow diagrams for wastewater treatment from collection tanks to discharge points, with unit processes and operations used and their purposes including sludge handling.

	▪ Understand different methods in design wastewater treatment systems (central and onsite) and describe the general factors involved in choosing the type of treatment. ▪ Solve problems involving stormwater management, water quality, and oxygen demand in receiving waters, and conducting lab tests for solids content and dissolved oxygen. ▪ Describe the components of the waste management hierarchy, and how to determine the data required evaluating waste management options. ▪ Describe the major options used in solid waste management and perform some calculations involving number of trucks or dumpsters required, number of residences served, etc.
9. Teaching and Learning Strategies	
Strategy	Key strategies for this course may include: • **Active Learning Methods**: Implement "think-pair-share," in-class reflections, "minute papers," and "muddiest point" exercises to immediately reinforce concepts. • **Case Studies & Real-World Projects**: Use case studies for analyzing environmental issues rather than just textbook reading. Assign group projects where students research, present, and write reports on specific environmental topics. • **Experiential and Field Activities**: Organize field trips to water/wastewater treatment plants or environmental facilities to provide practical, hands-on experience. • **Balanced Pedagogy**: Transition from fully PowerPoint-based lectures to a mix of board notes and slides (e.g., 50% / 50%) to improve student engagement. • **Contextualizing Content**: Connect theoretical material, such as material balances or chemical, biological, and physical processes, directly to sustainability and environmental protection scenarios. •

10. Course Structure					
Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	*2*	Introduction to wastewater treatment	Introduction	Attendance	Discussion
Week-2	*2*	Understanding wastewater/assessment parameters and dissemination impacts	Introduction	Attendance	Discussion
Week-3	*2*	Understanding basic design concepts for sewer systems	Sewer system	Attendance	Discussion
Week-4	*2*	Introduce sewer systems basic design, continue	Wastewater treatment	Attendance	Discussion
Week-5	*2*	Understanding wastewater treatment/preliminary and primary phases	Wastewater treatment	Attendance	Quiz#1
Week-6	*2*	Understanding oxygen demand calculations (ThoD, BOD, and COD)	Wastewater treatment	Attendance	*Home work*
Week-7	*2*	Secondary wastewater treatment/activated sludge	Wastewater treatment	Attendance	Discussion
Week-8	*2*	Understanding activated sludge treatment/ basic design	Wastewater treatment	Attendance	Discussion
Week-9	*2*	Trickling filter, oxidation ditch, SBR, RBC, etc.	Wastewater treatment	Attendance	Discussion

Week-10	*2*	Nutrients removal/wastewater sludge treatment and applications	Wastewater treatment	Attendance	Discussion
Week-11	*2*	Treated wastewater reuse and recycle	Wastewater treatment	Attendance	Discussion
Week-12	*2*	River pollution/Streeter-Phelps Model	River pollution	Attendance	Quiz#2
Week-13	*2*	Solid waste management/introduction, source, and characteristics	Solid waste management	Attendance	Discussion
Week-14	*2*	Integrated solid waste management/collection and treatment	Solid waste management	Attendance	Discussion
Week-15		Topics reviewing			*Final exam*

11. Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1		-			
Week-2		-			
Week-3		CL^- test			Lab report
Week-4		-			
Week-5		-			Quiz#1
Week-6		Alkalinity/acidity			Lab report
Week-7		-			
Week-8		-			
Week-9		-			
Week-10		DO test			Lab report
Week-11		-			
Week-12		-			Quiz#2
Week-13		Jar test			Lab report

Week-14					
Week-15		Review			Final exam

12. Course Evaluation
40% Student annual effort, which include: 20% monthly tests 5% class activity, and 10% lab reports, 5% home works + 60% final

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Introduction to Environmental Engineering by Vesil P. Aarne; Susan M. Morgan and Lauren G. He 2009, (3rd Editions). ISBN-13: 978-0-495-29. ISE 10: 0-495-29583-3.
Main references (sources)	Great Lakes-Upper Mississippi River Board of S Sanitary Engineers "Recommended Standards for W Works" (Ten States Standards), 2012 Ed., He Education Services, New York.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Transportation Engineering II
2. Course Code:
CE 424
3. Semester / Year:
Second Semester/ 2025-2026
4. Description Preparation Date:
01/02/2026
5. Available Attendance Forms:
In-Person (Face-to-Face)
6. Number of Credit Hours (Total) / Number of Units (Total)
120 / 3
7. Course administrator's name (mention all, if more than one name)
Name: Hayder Kamil Shanbara + Jaber.A. Hussein Email: hayder.shanbara@mu.edu.iq + jabber.awadth@mu.edu.iq
8. Course Objectives

Course Objectives	• Select the appropriate materials for use in different road layers. • Evaluate the quality and performance of unbound and bound road materials • Have sufficient knowledge and be able to perform road pavement design and analysis. • Develop an appropriate road monitoring and maintenance program. • Solve problems relating to pavement engineering and highway design.

9. Teaching and Learning Strategies	
Strategy	Teaching Strategies include: Lectures, Seminars, simulation demonstrations, tutorials with worksheets and audio-visual presentations; Learning activities include: Individual design work, literature review/analysis, use of software and directed reading. The examination will assess your knowledge and understanding of highway and transportation engineering and your abilities of analysis and problem solving. The other learning outcomes should be achieved through the junction design exercise.

10. Course Structure/ Theoretical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Explain pavement structural design philosophy and identify functions of pavement layers under traffic loading.	Pavement Structural Design	Lecture + Discussion	Short quiz / Participation
2	2	Describe special laboratory and field tests used in pavement design and interpret their engineering significance.	Special Tests for Pavement Design	Lecture + Examples	Short quiz
3	2	Interpret pavement material specifications and evaluate testing requirements according to engineering standards.	Specifications & Tests	Lecture + Visual aids	Homework assignment
4	2	Explain serviceability concept and evaluate pavement performance using ride quality and distress indicators.	Serviceability	Lecture + Problem	Quiz
5	2	Analyse traffic loading characteristics and evaluate their influence on pavement thickness design.	Traffic Loads	Lecture + Problem solving	Homework + Class exercise
6	2	Calculate Equivalent Single Axle Loads (ESAL) and assess cumulative traffic damage effects on pavement life.	Equivalent single axle load	Lecture + Case studies	Assignment

7	2	Apply pavement structural design principles to determine suitable layer configurations under given conditions.	Pavement Design	Lecture + Numerical practice	Quiz
8	2	Analyse flexible pavement behaviour and design layer thickness considering subgrade strength and traffic loads.	Flexible Pavement Design	Lecture + Problem solving	Quiz / Homework
9	2	Evaluate flexible pavement design solutions through worked examples and compare alternative structural configurations.	Flexible Pavement Design	Lecture + Worked examples	Midterm preparation exercise
10	2	Explain rigid pavement structural behaviour and analyse stress distribution using slab action principles.	Rigid Pavement	Lecture + Problem solving	Quiz
11	2	Compare different rigid pavement types and evaluate their suitability for varying traffic and environmental conditions.	Rigid Pavement types	Lecture + Lab demonstration	Assignment
12	2	Identify rigid pavement joint types and analyse their role in controlling thermal movement and cracking.	Joint types in Rigid Pavement	Lecture + Case studies	Quiz
13	2	Apply rigid pavement design concepts to determine slab thickness and reinforcement requirements.	Rigid Pavement Design	Lecture + Discussion	Participation + Assignment
14	2	Evaluate rigid pavement case studies and justify design decisions considering performance and durability.	Rigid Pavement Design	Lecture + Case studies	Final review test
15	2	Integrate course concepts to critically analyse pavement design scenarios and prepare for comprehensive examination.	Review	Lecture + Group discussion	Final exam

11. Course Structure/ Practical

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2	Identify and evaluate aggregate specifications required for asphalt mixtures according to pavement standards.	Specifications of aggregates used in asphalt mix	Lecture + Discussion	Exams, Hw & reports
2	2	Perform Los Angeles abrasion testing and assess aggregate resistance to wear and durability requirements.	Los Angeles test of aggregate	Lecture + Discussion	Exams, Hw & reports
3	2	Compare asphalt mixture design methods and select appropriate procedures based on project requirements.	Methods of asphalt mixture design	Lecture + Discussion	Exams, Hw & reports
4	2	Apply Marshall method principles to design asphalt mixtures and explain stability and flow concepts.	Mashall method of asphalt mix design.	Lecture + Discussion	Exams, Hw & reports
5	2	Calculate material proportions required for Marshall specimens including aggregate and binder quantities.	Calculation of Marshall sample components	Lecture + Discussion	Exams, Hw & reports
6	2	Prepare Marshall asphalt specimens following standard laboratory procedures and compaction requirements.	Preparation of Marshall samples	Lecture + Discussion	Exams, Hw & reports
7	2	Determine Marshall properties including stability, flow, density, and air void characteristics.	Properties determination of Marshall samples.	Lecture + Discussion	Exams, Hw & reports
8	2	Evaluate students' theoretical and practical understanding of asphalt mixture preparation and testing procedures.	1st month exam	Lecture	_____
9	2	Determine optimum asphalt content using Marshall design criteria and interpret volumetric analysis results.	Determination of optimum asphalt content.	Lecture + Discussion	Exams, Hw & reports

10	2	Analyze aggregate gradation curves and evaluate their influence on asphalt mixture performance.	Aggregates gradations used in asphalt mix.	Lecture + Discussion	Exams, Hw & reports
11	2	Conduct centrifugal extraction testing to determine asphalt binder content in asphalt mixtures.	Centrifugal test of asphalt	Lecture + Discussion	Exams, Hw & reports
12	2	Interpret centrifugal test results and evaluate mixture compliance with design specifications.	Centrifugal test of asphalt	Lecture + Discussion	Exams, Hw & reports
13	2	Perform pavement core sampling and evaluate in-situ asphalt layer thickness and density.	Core test of pavement	Lecture + Discussion	Exams, Hw & reports
14	2	Analyze core test results to assess construction quality and field compaction effectiveness.	Core test of pavement	Lecture + Discussion	Exams, Hw & reports
15	2	Assess cumulative practical knowledge and analytical skills through comprehensive laboratory examination.	2nd month exam	Lecture	

12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …. etc

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	•Principles of pavement design, By Yoder, E. and Witczak. M., 1975, 2nd edition, New York: John Wiley and Sons, Inc. •Principles and Practices of Highway Engineering, By L. R. Kadiyali (4th Edition 2008). •Highways, The Location, Design, Construction and Maintenance of Road Pavements. By Coleman O'Flaherty (4th Edition 2009).
Main references (sources)	•Deterioration and Maintenance of Pavements, By Derek Pearson (1st Edition 2013). •American Association of State Highway Transportation Officials (AASHTO), (2003).
Recommended books and references (scientific journals, reports…)	•Deterioration and Maintenance of Pavements, By Derek Pearson (1st Edition 2013). •American Association of State Highway Transportation Officials (AASHTO), (2003).
Electronic References, Websites	

Course Description Form

1. Course Name:

Engineering Computer Applications
2. Course Code:
CE CVE425
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
45
7. Course administrator's name (mention all, if more than one name)
Name: Methaq Saeed Matrood Email: Methaq.saeedm@mu.edu.iq
8. Course Objectives

Course Objectives	• Navigate the Interface • Define Structural Properties • Construct Complex Models • Apply Load Patterns • Execute Analysis • Interpret Results

	• Perform Design Checks

9. Teaching and Learning Strategies

Strategy	• The "Manual vs. Machine" Benchmark • Project-Based Progression • The "Error Hunt" Workshop • Visualizing the Physics

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	1	Introduction of SAP2000	Introduction of SAP2000	Attendance	Onsite Assignment
Week-2	1	Analysis of R.C. Beams	Analysis of R.C. Beams	Attendance	Onsite Assignment
Week-3	1	Analysis of R.C. Beams	Analysis of R.C. Beams	Attendance	Onsite Assignment
Week-4	1	Analysis of 2D Frames	Analysis of 2D Frames	Attendance	Onsite Assignment
Week-5	1	Analysis of 2D Frames	Analysis of 2D Frames	Attendance	Onsite Assignment
Week-6	1	Analysis of R.C. Slabs	Analysis of 2D Slabs	Attendance	Onsite Assignment
Week-7	1	Analysis of R.C. Slabs	Analysis of 2D Slabs	Attendance	Onsite Assignment
Week-8	1	1st Monthly Exam	1st Monthly Exam	Attendance	Monthly Exam
Week-9	1	Analysis of one story R.C. buildings	Analysis of one story R.C. buildings	Attendance	Onsite Assignment

Week-10	1	Analysis of one story R.C. buildings	Analysis of one story R.C. buildings	Attendance	Onsite Assignment
Week-11	1	Analysis of multistory R.C. buildings	Analysis of multistory R.C. buildings	Attendance	Onsite Assignment
Week-12	1	Analysis of multistory R.C. buildings	Analysis of multistory R.C. buildings	Attendance	Onsite Assignment
Week-13	1	Analysis of 2D Trusses	Analysis of 2D Trusses	Attendance	Onsite Assignment
Week-14	1	Analysis of 2D Trusses	Analysis of 2D Trusses	Attendance	Onsite Assignment
Week-15	1	2nd Monthly Exam	2nd Monthly Exam	Attendance	Monthly Exam

11. Course Structure/ Lab

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week-1	2	Introduction of SAP2000	Introduction of SAP2000	Attendance	Onsite Assignment
Week-2	2	Analysis of R.C. Beams	Analysis of R.C. Beams	Attendance	Onsite Assignment
Week-3	2	Analysis of R.C. Beams	Analysis of R.C. Beams	Attendance	Onsite Assignment
Week-4	2	Analysis of 2D Frames	Analysis of 2D Frames	Attendance	Onsite Assignment
Week-5	2	Analysis of 2D Frames	Analysis of 2D Frames	Attendance	Onsite Assignment
Week-6	2	Analysis of 2D Slabs	Analysis of 2D Slabs	Attendance	Onsite Assignment
Week-7	2	Analysis of 2D Slabs	Analysis of 2D Slabs	Attendance	Onsite Assignment

Week-8	2	1st Monthly Exam	1st Monthly Exam	Attendance	Monthly Exam
Week-9	2	Analysis of one story R.C. buildings	Analysis of one story R.C. buildings	Attendance	Onsite Assignment
Week-10	2	Analysis of one story R.C. buildings	Analysis of one story R.C. buildings	Attendance	Onsite Assignment
Week-11	2	Analysis of multistory R.C. buildings	Analysis of multistory R.C. buildings	Attendance	Onsite Assignment
Week-12	2	Analysis of multistory R.C. buildings	Analysis of multistory R.C. buildings	Attendance	Onsite Assignment
Week-13	2	Analysis of 2D Trusses	Analysis of 2D Trusses	Attendance	Onsite Assignment
Week-14	2	Analysis of 2D Trusses	Analysis of 2D Trusses	Attendance	Onsite Assignment
Week-15	2	2nd Monthly Exam	2nd Monthly Exam	Attendance	Monthly Exam

12. Course Evaluation

1. Semester Achievement 50%
   - Onsite assignments 20%
   - monthly exams 30%
2. Final Exam 50%

13. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• CSI SAP2000 Analysis Reference Manual • Structural Analysis by R.C. Hibbeler
Main references (sources)	• Three-Dimensional Static and Dyna Analysis of Structures by Edward L. Wilson.

Recommended books and references (scientific journals, reports…)	• Design Codes: (ACI 318 for Concrete, AISC Steel). • Computers & Structures Journal
Electronic References, Websites	• CSI Knowledge Base (Wiki) • CSI official YouTube Channel

Course Description Form

1. Course Name:
Engineering Project
2. Course Code:
ENG006
3. Semester / Year:
2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
4 / 100
7. Course administrator's name (mention all, if more than one name)
8. Course Objectives

Course Objectives	▪ Enable students to apply the theoretical and practical knowledge acquired during their studies to solve real engineering problems. ▪ Develop students' skills in scientific research, analysis, and problem-solvi in the field of civil engineering. ▪ Train students in preparing engineering studies and writing technical repo

	▪ Develop teamwork, communication, and scientific presentation skills. ▪ Enhance students' ability to plan, design, analyze, and evaluate engineeri projects according to professional standards.

9. Teaching and Learning Strategies

Strategy	▪ Direct academic supervision by faculty members. ▪ Independent scientific research by students. ▪ Analysis and design of engineering problems. ▪ Regular meetings to follow up on project progress. ▪ Preparation of technical reports and presentations. ▪ Presentation and discussion of the final project.

10. Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1	2				
Week-2	2				
Week-3	2				
Week-4	2				
Week-5	2				
Week-6	2				
Week-7	2				
Week-8	2				
Week-9	2				
Week-	2				
Week-	2				
Week-	2				
Week-	2				
Week-	2				
Week-	2				

11. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week-1					
Week-2					
Week-3					
Week-4					
Week-5					
Week-6					
Week-7					
Week-8					
Week-9					
Week-10					
Week-11					
Week-12					
Week-13					
Week-14					
Week-15					

12. Course Evaluation

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Ethics
2. Course Code:
UNI007
3. Semester / Year:
Second Semester / 2025-2026
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
25
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Khudair Mohammed Email: mohammed.khudair@mu.edu.iq
8. Course Objectives

Course Objectives	The course aims to: • Introduce students to the concept of professional ethics.

	• Clarify the sources of ethics in engineering practice. • Link engineering ethics to cultural heritage. • Explain the engineer's obligations toward society. • Explain the engineer's obligations toward employers. • Explain the engineer's obligations toward colleagues and the work team. • Explain the engineer's responsibility toward the environment. • Clarify corrective actions when rules of professional ethics are violated.

9. Teaching and Learning Strategies

Strategy	The course is based on: • Theoretical lectures to explain the concepts of engineering ethics. • Classroom discussions on professional responsibilities. • Case studies from real engineering practice. • Analysis of professional codes of conduct. • Outcome-based learning.

10. Course Structure/ Lab

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Week 1	2	Recognizing the concept of ethics in engineering practice	Introduction to Ethical Concepts	In-person	Daily quiz

Week 2	2	Understanding the concept of ethical behavior in engineering work	Concept of Ethical Behavior	In-person	Discussion
Week 3	2	Identifying the sources and foundations of professional ethics	Sources and Foundations of Professional Ethics	In-person	Assignment
Week 4	2	Linking engineering ethics to cultural heritage	Cultural Heritage and Engineering Ethics	In-person	Assignment
Week 5	2	Understanding the code of professional ethics and its rules	Code of Engineering Ethics: Rules and Scope	In-person	Daily quiz
Week 6	2	Understanding the principles of engineering professional ethics	Principles of Engineering Professional Ethics	In-person	Daily quiz
Week 7	2	Recognizing the professional responsibilities of the engineer	Professional Obligations of the Engineer (Responsibility, Productivity, and Quality Control)	In-person	Midterm exam
Week 8	2	Realizing the importance of developing professional knowledge	Commitment to Developing Professional Knowledge	In-person	Discussion
Week 9	2	Recognizing unethical behaviors and	Avoiding Fraudulent Behavior	In-person	Assignment

		how to avoid them			
Week 10	2	Respecting the rights of others in engineering work	Commitment to the Rights of Others	In-person	Assignment
Week 11	2	Understanding the engineer's obligations toward the employer	Obligations Toward Employers	In-person	Daily quiz
Week 12	2	Recognizing conflict of interest and ways to avoid it	Avoiding Conflict of Interest	In-person	Discussion
Week 13	2	Promoting professional honesty and integrity	Promoting Integrity and Rejecting Unethical Practices	In-person	Assignment
Week 14	2	Studying real-life cases from engineering work	Examples from Professional Practice	In-person	Discussion
Week 15	2	Enhancing understanding through additional practical examples	Applied Examples from Engineering Work	In-person	Discussion

11. Course Evaluation

Formative assessment:

- Short quizzes: **20%**
- Assignments: **10%**

Final assessment:

- Midterm exam: **10%**
- Final exam: **60%**

Total = 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Code of Professional Ethics–Iraqi Building Codes– M.B.A. 002 – 2017
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	