Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Description Form

University Name: Middle Technical University
Faculty/Institute: Kut Technical Institute
Scientific Department: Department of Building and Construction Techniques
Academic or Professional Program Name: Civil Technologies
Final Certificate Name: Technical Diploma
Academic System: Semester
Description Preparation Date: 2025/2/5
File Completion Date: 2025\2\22

Signature:
Head of Department Name: Hussein Hadi
Date: 24/2/2025

Signature:
Scientific Associate Name: Adil Al-Ogaili
Date: 24/2/2025

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date: 25/2/2025
Signature:

Approval of the Dean

1. Program Vision

1.The Department of Civil Technology is one of the main technological departments and the department aspires to expand the base of technical education and its modern applications to be a pioneer in providing contemporary technical services based on the spirit of competition and cooperation with everyone to serve and develop society.

2. Upgrading to a distinguished and renewed department in the education and training of all civil technologies at a high level of quality that contributes to the rehabilitation of highly qualified national human cadres.

3. Ambition to be a pioneer in providing educational and specialized programs in the field of civil technologies and to be a role model.

2. Program Mission

1. The mission of the department is to graduate national technical cadres at a high level of education and training to be able to absorb modern technology systems and support the process of technical development to keep pace with rapid global technical developments through:

2. The use of computer and Internet technologies in education and training.

3. Activating the relationship with the public and private sectors in the fields of training.

4. Follow up the development of the curricula of the training plans and then update the laboratories and workshops.

5. Interaction with the labor market and the needs of society in the rehabilitation and training of students.

3. Program Objectives

1- The graduates of the Building and Construction Techniques Department should possess a comprehensive knowledge of the basics of concrete technology.

2- Providing the labor market with technicians who have the ability to apply methods of design, management and construction in engineering projects.

3- The graduates should have the ability to acquire communication skills and teamwork in multidisciplinary projects.

4- Providing technicians with the ability to continue learning and acquire skills to develop creative professional performance and plan work based on community values and professional ethics.

5- Maintaining abreast of the latest developments in the field of civil engineering, by re-evaluating the study plans and curricula offered on a regular basis.

4. Program Accreditation

governmental

5. Other external influences

Courses / scientific conferences / research

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	26			basic
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	exist			
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2024-2025			theoretical	Practical
1st course	C1-1	Construction Materials	2	2
First stage	C1-2	Engineering Mechanics	2	1
	C1-3	Principles of Surveying	2	2
	C1-4	Technical English Language	2	-
	C1-5	Mathematics	2	-
	C1-6	Computer Application	1	2
	C1-7	Engineering Drawing	-	6
	C1-8	Laboratories	-	3
	C1-9	Human Rights	2	-

Year/Level	Course Code	Course Name	Credit Hours	
2024-2025			theoretical	Practical
2nd course	C1-1	Construction Materials	2	2
First stage	C1-2	Strength of Materials	2	1
	C1-3	Surveying Techniques	2	2
	C1-4	Arabic Language	2	-
	C1-5	Mathematics	2	-
	C1-6	2D AutoCAD	1	2
	C1-7	Engineering Drawing	-	6
	C1-8	Civil Workshops	-	3

Year/Level	Course Code	Course Name	Credit Hours	
2025-2026			theoretical	Practical
1st course	C2-1	Concrete Technology	2	2
Second stage	C2 -2	Technology of Construction	-	4
	C2 -3	Soil Mechanics	2	2
	C2 -4	Civil Drawing	1	5
	C2 -5	Surveying1	1	2
	C2 -6	Computer Applications (1)	2	-
	C2 -7	Quantitative Surveying	1	2
	C2 -8	Building Construction	2	1
	C2 -9	Arabic Language	2	-
	C2-10	Crimes of the Ba'ath Regime	-	2
	C2-11	English Language	-	2
	C2-12	Project	2	-

Year/Level	Course Code	Course Name	Credit Hours	
2025-2026			theoretical	Practical
2nd course	C2-1	Concrete Technology	2	2
Second stage	C2 -2	Technology of Construction	-	4
	C2 -3	Soil Mechanics	2	2
	C2 -4	Civil Drawing	1	5
	C2 -5	Surveying1	1	2
	C2 -6	Construction Machinery	2	-
	C2 -7	Project Management	1	2
	C2 -8	Prefabricated Construction	2	1
	C2 -9	Professional Ethics	2	-
	C2-10	Project	2	-

8. Expected learning outcomes of the program

Knowledge

A1- The ability to engineering analysis and scientific thinking through the application of laws in science, mathematics and engineering and adherence to the guidelines and instructions for any effectiveness in the organizational and administrative framework in implementing a project or facing an engineering problem, solving and evaluating it, submitting a proposal or plan, reformulating, translating or interpreting it.

A2-Preparing the student to continue self-learning and acquiring new techniques and skills in the field of engineering.

A3- To be familiar with international civil engineering standards, estimate market needs, apply quality management concepts in engineering work, and acquire skills in information technology.

A4- To be able to work in different work environments.

Skills

B1 – Discussion and dialogue.

B2 – Cooperative learning by working collectively

B3 – The ability to apply civil engineering techniques taking into account industrial, construction and commercial constraints.

B4- The ability to select and conduct the required tests and collect, compare and analyze the results of the tests.

Ethics

C1- Data collection and analysis

C2- Cooperative Learning

C3- Presenting the engineering problem or design and asking to think about possible solutions or developments.

C4- Developing research skills in the Internet to expand the knowledge horizon.

9. **Teaching and Learning Strategies**
1- Providing the student with self-learning skills through the nature of vocabulary, curricula and approved teaching methods 2- Encouraging students to work as teams within practical projects that reflect the life reality of society and its problems 3- Encouraging students to enter and participate in competitions, seminars and conferences that develop and develop their research ability and self-confidence for self-learning.

10. **Evaluation methods**
1- Follow-up and discussion of graduation projects 2- Follow up the performance of students in engineering workshops 3- Summer Training Program Completion Reports

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/ Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
teacher	Civil Engineering	Environmental Management & Planning			Staff	
Assistant Professor	Civil Engineering	Environmental Engineering			Staff	
Assistant Professor	Civil Engineering	Water Resources			Staff	
Teacher	Mechanical Engineering	Surveying Engineering			Staff	
Teacher	Surveying Engineering	Mechanical Engineering			Staff	
Teacher	Civil Engineering	Surveying Engineering			Staff	
Assistant Lecturer	Civil Engineering	Soil Mechanics and Foundations			Staff	
Assistant Lecturer	Civil Engineering	Water and Environment			Staff	
Assistant Lecturer	Civil Engineering	Water and Environment			Staff	
Assistant Lecturer	Political Science	Political Science				Lecturer
Assistant Lecturer	Education	Psychology				Lecturer
Assistant Lecturer	Education	English				Lecturer

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(The Department of Building and Construction Engineering Techniques is subject to the mechanism of work of the Ministry of Higher Education and Scientific Research - Central Admission Department, where graduates of preparatory school and industry are nominated for admission to the department based on averages.

13. The most important sources of information about the program

1. Curriculum.
2. Professors' lectures.
3. Websites on the Internet
4. The use of modern scientific platforms in e-learning and the use of classroom and cockle met.
5. Description of the courses attached with the description of the academic program.

14. Program Development Plan

1. Providing the student with self-learning skills through the nature of vocabulary, curricula and approved teaching methods
2. Encouraging students to work as teams within practical projects that reflect the reality of the life of society and its problems
3. Encouraging students to enter and participate in competitions, seminars and

conferences, which develop and develop their research ability and self-confidence on self-learning.

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	B4	C1	C2	C3	C4	
2025\2026 1st course	C1-1	Construction Materials	Basic	\	\		\		\	\		\				
	C1-2	Engineering Mechanics	Basic	\	\	\	\			\			\			
First stage	C1-3	Principles of Surveying	Basic	\	\						\	\		\		
	C1-4	Technical English Language	Basic	\				\								
	C1-5	Mathematics	Basic	\	\		\			\	\	\		\		
	C1-6	Computer Application	Basic	\			\			\	\	\			\	
	C1-7	Engineering Drawing	Basic				\		\	\		\				
	C1-8	Laboratories	Basic		\		\			\	\		\			
	C1-9	Human Rights	Basic				\					\				

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**	**B4**	**C1**	**C2**	**C3**	**C4**
2025\2026 2nd course	C1-1	Construction Materials	Basic	\	\		\		\	\		\			
	C1-2	Strength of Materials	Basic	\	\	\	\			\			\		
First stage	C1-3	Surveying Techniques	Basic	\	\						\	\		\	
	C1-4	Arabic Language	Basic	\				\							
	C1-5	Mathematics	Basic	\	\		\			\	\	\		\	
	C1-6	2D AutoCAD	Basic	\			\			\	\	\			\
	C1-7	Engineering Drawing	Basic				\		\	\		\			
	C1-8	Civil Workshops	Basic		\		\			\	\		\		

Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2025-2026 **1st course**	C2-1	Concrete Technology	Basic	\					\			\			
	C2 -2	Technology of Construction	Basic	\					\			\			
Second stage	C2 -3	Soil Mechanics	Basic	\						\		\			
	C2 -4	Civil Drawing	Basic		\			\					\		
	C2 -5	Surveying1	Basic		\			\					\		
	C2 -6	Computer Applications (1)	Basic	\					\				\		
	C2 -7	Quantitative Surveying	Basic		\			\				\			
	C2 -8	Building Construction	Basic	\				\				\			
	C2 -9	Arabic Language	Basic	\				\				\			
	C2-10	Crimes of the Ba'ath Regime	Basic		\			\					\		
	C2-11	English Language	Basic	\				\				\			
	C2-12	Project	Basic	\				\				\			

Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2025-2026 **2nd course**	C2-1	Concrete Technology	Basic	\					\			\			
	C2 -2	Technology of Construction	Basic	\					\			\			
Second stage	C2 -3	Soil Mechanics	Basic	\						\		\			
	C2 -4	Civil Drawing	Basic		\			\					\		
	C2 -5	Surveying1	Basic		\			\					\		
	C2 -6	Construction Machinery	Basic	\					\				\		
	C2 -7	Project Management	Basic		\			\				\			
	C2 -8	Prefabricated Construction	Basic	\				\				\			
	C2 -9	Professional Ethics	Basic	\				\				\			
	C2-10	Project	Basic		\			\					\		

First Stage

Course Description Form

1. Course Name
Construction Materials
2. Course Code
C1-1
3. Term /Year
The first course for the academic year 2025/2026
4. Date this description was prepared
24/1/2025
5. A. Available Attendance Forms
In-Person
6. Number of study hours (total)/number of units (total)
(2 theoretical + 2 practical) by (4) hours per week = 120 total hours
7. Course Admin Name

Name: Alaa Humeed Abdullah Email : hameedalaa095@gmail.com	
8. Course objectives:	
Objectives of the course	• **Introducing the student to the properties of the construction materials and the methods of the production** • **Introducing the student to modern alternatives that currently exist and modern methods of production.** • **Qualifying the student to carry out standard tests to find out the extent to which the construct materials conform to the specifications and determine the possibility of using them in construction, which ensures strength, safety and economy.**
9. TEACHING AND LEARNING STRATEGIES	
Strategy	**Identify the basic concepts of construction materials.** • **Expanding students' perceptions and enhancing the concept of construction materials by giving th general principles and concepts about construction materials, their types, destructive and non-destructive examination methods through knowledge of the site and the quality of origin.**

	• Giving the student experience in choosing the appropriate type of construction material and choos the appropriate examination method for it. • Identifies the Iraqi specifications for construction materials and methods of estimating the quantitie of materials necessary for the construction work.

10. Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
First	2T + 2P	Student understands the lesson	A general description of the physical properties and standard specifications of building materials and their uses in buildings.	Lecture Theory + visit to the construction materials laboratory	Discussion

Second	2T + 2P	Student understands the lesson	Clay bricks: their properties, uses and methods of manufacture.	Theoretical lecture and implementation of brick tests experiment – density, specific weight	Discussion, Quick Quiz, Homework and Lab Report
Third	2T + 2P	Student understands the lesson	Specifications of clay bricks, inspections of clay bricks.	Theoretical lecture and implementation of the experiment of brick tests_absorption, 1/2 hour, 24 hours, flowering	Discussion, Quick Quiz, Homework and Lab Report

Fourth	2T + 2P	Student understands the lesson	Limestone bricks Glass bricks, properties and methods of manufacture.	Theoretical lecture and implementation of brick tests experiments: compressive strength and dissolved salts	Discussion, Quick Quiz, Homework and Lab Report
Fifth	2T + 2P	Student understands the lesson	Concrete bricks – concrete blocks (properties and method of manufacture with clarification of the difference between the two).	Theoretical lecture and implementation of concrete brick tests: absorption density, dissolved salts	Discussion, Quick Quiz, Homework and Lab Report

Sixth	2T + 2P	Student understands the lesson	Thermostone, its properties, and methods of making it.	Theoretical lecture and implementation of concrete block tests: absorption density, dissolved salts	Discussion, Quick Quiz, Homework and Lab Report
Seventh	2T + 2P	Student understands the lesson	A visit to the brick factory	Discuss the visit to the brick factory.	Discussion, Quick Quiz, Homework and Lab Report

Eighth	2T + 2P	Student understands the lesson	Building stone – classification and types, uses of building stone according to its types.	Theoretical lecture and implementation ofthe tests of limestone bricks, absorption density and compressive strength	Discussion, Quick Quiz, Homework and Lab Report
Ninth	2T + 2P	Student understands the lesson	Portland cement, its manufacture, chemical composition, types and specifications.	Theoretical lecture and implementation ofthe tests of thermiston, density, absorption , compressive strength	Discussion, Quick Quiz, Homework and Lab Report

Tenth	2T + 2P	Student understands the lesson	Concrete pipes, their manufacture, specifications, and use in construction purposes.	Theoretical lecture with a visit to the construction materials testing laboratory	Discussion, Quick Quiz, Homework and Lab Report
Eleventh	2T + 2P	Student understands the lesson	Concrete slabs, their types, specifications , and use in structural purposes	Theoretical lecture and implementation of standard tests for concrete slabs, including: absorption and salts	Discussion, Quick Quiz, Homework and Lab Report

Twelveth	2T + 2P	Student understands the lesson	Structural steel, its specifications, types, and uses.	Lecture Theory and Execution of Concrete Slab Inspection Experiment: Compaction and Fracture Criteria	Discussion, Quick Quiz, Homework and Lab Report
Thirteen	2T + 2P	Student understands the lesson	Steel details, welding, bolts, rivets, and their uses.	Theoretical lecture and implementation of the experiment of examining stones, examining the absorption of some types of available stones	Discussion, Quick Quiz, Homework and Lab Report

Fourteenth	**2T + 2P**	**Student understands the lesson**	**Visiting the two sites to see structural steel, its types, steel connections, rivets, welds and bolts.**	**Lecture Theory and Execution of Steel Checks Experiment, Tensile Examination**	**Discussion, Quick Quiz, Homework and Lab Report**
Fifteenth	**2T + 2P**	**Student understands the lesson**	**Environmentally friendly building materials.**	**Lecture on the theory of identification of some materials used in the production and manufacture of environmentally friendly building materials**	**Discussion, Quick Quiz, Homework and Lab Report**

11. Course Evaluation

The evaluation is based on:

1. Midterm Exam (20% Theoretical + 10% Practical) 3. The work of the year (10%) shall be taken into account attendance and participation . 4. Final exam (40% N + 10% N) first round and second round.

12. Learning and Teaching Resources

Required textbooks (methodology if any)	
Key References (Sources)	Building Construction Book/ Zuhair Sako + Artin Levon
Recommended supporting books and references (scientific journals, reports…)	All discreet scientific journals related to construction materials
E-References, Websites	• Book of Building Materials and Raw Materials Used in Construct • Asphalt/Electronic Technology

Course Description Form

1. Course Name: Engineering Mechanics
2. Course Code: C1-2
3. Semester / Year: Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
3 in week
7. Course administrator's name (mention all, if more than one name)
Name: Salman Khayoun Khader Email: Salman Khayoun@gmail.com

8. Course Objectives

Course Objectives	**Study of the force acting on the objects in the case static of particulars & bodies, also stu strength of materials.**

9. Teaching and Learning Strategies
1–Lectures 2- laboratory 3-mechanical workshops 4- systematic training 5-summer training

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Engineering Mechanics	Definition of mechani force and trigonomet ratios	Theoretical practical	Test + practical

2	3	Engineering Mechanics	Analysis of forces	Theoretical practical	Test + practical
3	3	Engineering Mechanics	Triangle force a parallelogram laws	Theoretical practical	Test + practical
4	3	Engineering Mechanics	Moment of forces	Theoretical practical	Test + practical
5	3	Engineering Mechanics	Couples	Theoretical practical	Test + practical
6	3	Engineering Mechanics	Resultant of concurre forces	Theoretical practical	Test + practical
7	3	Engineering Mechanics	Resultant of nc concurrent forces	Theoretical practical	Test + practical
8	3	Engineering Mechanics	Distributed loads	Theoretical practical	Test + practical
9	3	Engineering Mechanics	Equilibrium concurrent forces	Theoretical practical	Test + Practical
10	3	Engineering Mechanics	Equilibrium in nc concurrent forces	Theoretical practical	Test + Practical
11	3	Engineering	Types of beams a	Theoretical	Test +

		Mechanics	supports	practical	Practical
12	3	Engineering Mechanics	Analysis of trusses method of joints	Theoretical practical	Test + Practical
13	3	Engineering Mechanics	Analysis of trusses method of sections	Theoretical practical	Test + practical
14	3	Engineering Mechanics	Friction, friction theory	Theoretical practical	Test + practical
15	3	Engineering Mechanics	Laws of friction, types friction, applications	Theoretical practical	Test + practical

11. Course Evaluation

10% Practical
10% Evaluation
20 %Theoretical
60 %Final (10 Practical+50 Theoretical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, any)	Textbooks countable by the Technical Education, Engineering Mechan by Higdon, Singer for Strength of Materials.
Main references (sources)	Engineering Mechanics static's Sixth edition, by J.L.Meriam&L.G.Kraige
Recommended books and references (scientific journals, reports…)	Adoption of teaching on external sources + methodology in t preparation of lectures
Electronic References, Websites	Engineering Mechanics static and Dynamic I.C.Joung&B.C.Rogers

Course Description Form

1-Course Name:
The principle of surveying
2-Course Code:
C1−3
3-Semester / Year:
2025– 2026 first semester
4- Description Preparation Date:
2025
5-Available Attendance Forms:
Students in first stage
6-Number of Credit Hours (Total) / Number of Units (Total)
(60) hours and (4) units
7-Course administrator's name (mention all, if more than one name)
Name: Jabbar Hassoon Hasan Email: jabbar.hasson@mtu.edu.iq

8-Course Objectives	
Course Objectives	• Introducing students to the basics of surveying building and knowing how to drop or survey a specific area • How to settle and amend land • Knowing the properties of horizontal and vertical angles. • Introduce the student to the fax. • Introducing the student to modern surveying devices and methods of working on them
9-Teaching and Learning Strategies	
Strategy	1- Asking questions and inquiries that are distinguished by depth and accuracy. 2- Directing the student towards understanding the cause and reason. 3- Developing a digital sense of expression. 4- Brainstorming.

10−Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	4	Definition of surveying - its fields - its divisions - its uses - units of measurement.		Theory and Practical	1. Quick questions. 2. Weekly reports 3. Daily exams. 4. Discussing problems and solutions
2	4	Measurement of horizontal distances on plane land - Measurement of horizontal distance on land of irregular slope.		Theory and Practical	
3	4	Measuring horizontal distances on sloping terrain (regular sloping)		Theory and Practical	
4	4	Set up and shoot down columns - overcome obstacles which abstruct the measurement of horizontal distance		Theory and Practical	
5	4	Tape survey		Theory and Practical	
6	4	Plane table - its parts - methods of lifting the Plane table (radiation method)		Theory and Practical	
7	4	Front cross lift method, rotation method (locking error and how to correct it) Advantages and disadvantages of Plane table survey		Theory and Practical	
8	4	levelling - Definitions Related to It – Purposes		Theory and Practical	
9	4	Calculating the levels of points using H.I		Theory and Practical	

10	4	Calculating the levels of points using the method of rising and falling	Theory and Practical	
11	4	Double leveling - the effect of the Earth's sphericality and optical refractions on the leveling work	Theory and Practical	
12	4	Inverted levelling Mutual levelling	Theory and Practical	
13	4	Sources of errors in leveling work - accuracy - allowable error	Theory and Practical	
14	4	profiles	Theory and Practical	
15	4	Cross-sections - Finding the levels of points of a cross-section - Drawing the cross-section	Theory and Practical	

11-Course Evaluation

Mid semester		Final semester
40 %	10 degrees practical	60 %
	10 degrees theory	

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	المساحة المستوية والطوبوغرافية المساحة العملي
Main references (sources)	المساحة الهندسية

Recommended books and references (scientific journals, reports…)	**Surveying principles and application**
Electronic References, Websites	

Course Description Form

1. Course Name: : English language 1
2. Course Code: C1-4
3. Semester / Year: The first semester of the academic year 2023-2024
4. Description Preparation Date: 2025
5. Available Attendance Forms: Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 2 theory * 15 weeks = 30 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Hadi

Email:

8. Course Objectives: **Improving students' skills in English language, developing their reading, writing and listening abilities, and enable them to write scientific reports in English language**

Course Objectives	**Improving students' skills in English language, developing their reading, writing and listening abilities, and enable them to write scientific report English language**

9. Teaching and Learning Strategies

Strategy	1-Preparation and implementation of research and projects by students within the vocabulary section of space technology materials and introduction of the applications of mathematics and presented in the annual student conferences. 2-Develop and upgrade of the vocabulary of mathematics to keep up with development in order to achieve personal development to the level of students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Explanation clarification thro lectures	Introductions, am/ are/ is. Wh this in English?	Lecture presentation	Exam

2	2	Explanation and clarifica through lectures	Numbers 1 – 10. Plurals. Good morning!:	Lecture presentation	Exam
3	2	Explanation clarification thro lectures	Countries, am/are/is. Her name's. She's from. Questions. Adjectives good/ awful. Numbers 11 – 30	Lecture presentation	Exam
4	2	Explanation clarification thro lectures	Jobs, is/ isn't. Questions & negatives. Vocabulary revisio Social expression (1).	Lecture presentation	Exam
5	2	Explanation clarification thro lectures	Passive's, my/our/her. The family, has/have. Vocabulary revision. The alphabet	Lecture presentation	Exam
6	2	Explanation clarification thro lectures	Sports/food/drink. Present simple-1/you/they. Language nationalities. How much is it?	Lecture presentation	Exam
7	2	Explanation clarification thro lectures	The time. Present Simple-he/s Prepositions in/at/on. Words t go together. Days of the week	Lecture presentation	Exam
8	2	Explanation and clarification through lectures	Questions. Pronouns me/him. Possessive adjectives my/his/this/that. Adjectives	Lecture presentation	Exam

			happy/miserable. Can I..?		
9	2	Explanation and clarification through lectures	Questions. Pronouns me/him. Possessive adjectives my/his/this/that. Adjectives happy/miserable. Can I..?	Lecture presentation	Exam
10	2	Explanation and clarification through lectures	Saying years, was/were. Past Simple-irregular verbs have/do/go. Months & dates.	Lecture presentation	Exam
11	2	Explanation and clarification through lectures	Past Simple-regular verbs. Questions & negatives. Makir conversation. Sport & leisure activities. Going sightseeing	Lecture presentation	Exam
12	2	Explanation and clarification through lectures	Can/can't. Adverbs-very well/ at all. Requests & offers. Adjective + noun. Everyday problems	Lecture presentation	Exam
13	2	Explanation and clarification through lectures	Some/any. I'd like a../I'd like t Offering things. Like & would like. Food	Lecture presentation	Exam
14	2	Explanation and clarification through lectures	Colours & clothes. Present Continuous. Present Simple o Continuous?. Opposite verbs-leave-arrive. What's the matte	Lecture presentation	Exam

15	2	Explanation and clarification through lectures	Future plans. Grammar revisio Vocabulary revision. Form filling. Social expressions (2)	Lecture presentation	Exam

11. Course Evaluation

1. The first month exam (10%Theory)
2. The second month exam (10%Theory)
3. Acts of the course (10%) is taken into account attendance and participation.
4. Final exam (70%T) first-round and second round.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Required textbooks (curricular books, if any) * Newheadway Plus, Pre-Intermediate Studen book by John & Liz Soars Press. Oxford *Newheadway Plus, Beginner Workbook by John & Liz Soars Press. Oxford

Course Description Form

1. Course Name
Mathematics 1
2. Course Code:
C1−5
3. Semester / Year
Semester1
4. Description Preparation Date
2025
5. Available Attendance Forms
Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 theory * 15 weeks = 30 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Fatima abbas ahmed Email: fatima. abbas @mtu.edu.iq

8. Course Objectives: to develop the student's ability to use mathematics in practical applications and to benefit from it in other engineering lessons. The student learns different ways of representing equations, mathematical laws and various data on the formation of curves in a graph and different types of diagrams .commensurate with the purpose of drawing them.

Course Objectives	**1-understand the key concepts and knowledge of the rules and the laws of mathematics and its application in space technology.** **2-the subject of mathematics that are designed to clarify the practical and philosophical challenges of the current engineering mathematics that spurred this constant evolution, as well as providing basic concepts of differentiation and integration useful for fur study of the science of engineering and** **applied mathematics in the scientific and practical field** **3-students acquire the skills to resolve issues**

9. Teaching and Learning Strategies

Strategy	1-Preparation and implementation of research and projects by students within the vocabulary section of space technology materials and introduction of the applications of mathematics and presented in the annual student conferences. 2-Develop and upgrade of the vocabulary of mathematics to keep up with development in order to achieve personal development to the le of the students.

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation method

		Outcomes		method	
1	2	The student understands the lesson	Matrices, determinants, and their properties	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
2	2	The student understands the lesson	determinants Applications on, ,by using Cramer's rule ,Liner of equation .Solve force analysis equations	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
3	2	The student understands the lesson	vector ,vector and scalar quantities ,analysis the vectors ,The Vectors . arithmetic operations of vectors in space ,algebra	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
4	2	The student understands the lesson	Standard and Directional vector scale ,orthogonal vector unit .Calculation of torque applications, work vector application, Multiplication.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
5	2	The student understands the lesson	Logarithmic functions ,Hyperbolic Trigonometric functions ,Functions.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

6	2	The student understands the lesson	the hyperbolic function Exponential function, hyperbolic function its ,properties.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
7	2	The student understands the lesson	Limits application ,purpose of algebraic and trigonomet functions Limits.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
8	2	The student understands the lesson.	Sequence.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
9	2	The student understands the lesson.	Derivatives of algebraic functions chain base , Derivatives.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
10	2	The student understands the lesson.	Curvilinear functions, the derived scalar function with higher orders.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
11	2	The student understands the lesson.	Derivative of logarithmic functions , Derivative of trigonometric functions.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
12	2	The student understands the lesson.	Function exponential's, Hyperbolic Function.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

13	2	The student understands the lesson.	Derives Application acceleration and. the speed Equation, Tangent	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
14	2	The student understands the lesson.	Exponential and Logarithmic	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
15	2	The student understands the lesson.	.Draw functions ,General physical and engineering applications	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

11. Course Evaluation

1. The first month exam (10%Theory)
2. The second month exam (10%Theory)
3. Acts of the course (10%) is taken into account attendance and participation.
4. Final exam (70%T) first-round and second round.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Institute library for additional resources for the curriculum
Main references (sources)	Thomas 'Calculus
Recommended books and references (scientific	All journals deals with mathematic

journals, reports…)	
Electronic References, Websites	Website deals with mathematic

Course Description Form

1 .Course Name: the computer
2 .Course Code: C1-6
3 Semester / Year: Academic year 2025- 2026
4 Description Preparation Date: 2025
5 Available Attendance Forms: Theoretical and practical lectures
6 Number of Credit Hours (Total) / Number of Units (Total) 1 theoretical *15 weeks = 15 total hours and 2 practical *15 weeks = 30 hours

7 Course administrator's name (mention all, if more than one name)

Name: Huda Karim Kazem
Email: vvknk4666a@gmail.com

8 Course Objectives

Course Objectives	• **1) The student gets to know the concept of computer science.** • **2) Teaching the student to work on the computer using Word and Excel so that he is able use the calculator and work on these basic programs easily.** • **3) Teaching and teaching students all the necessary information related to computers, wh qualifies them to work and research in all computer fields**

9 Teaching and Learning Strategies

Strategy	• The teacher introduces students to the most important main applications of ready-made software applications • Giving students extracurricular assignments that require them to apply skills and self-explanations in experimental ways • Interrogating students through seminars by asking thinking questions (how, why, when, whe

	which) for specific topics. • Using the method of brainstorming and feedback in order to activate the accumulated experienc of students by linking the study materials that were taken in the previous academic stages and linking them to the new ones.

10 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1_2	1T+2p	The student understands the lesson	Induction with computers: generations, components (Hardware and software	Lecture Theoretical	Discussion and solving exercises, Quiz, Homework
3-4	1T+2p	The Student	Windows XP	Lecture Theoretical	Discussion and solving exercises, Quiz, Homework

5	1T+2p	understands the lesson The Student understands the lesson	operating system: the concept of a Windows system, its advantages basic requirements, operating system, t main screen components to the surface of the library Desktop, the concept of the Icons, the way of dealing with the activities of all mouse View The concept of the window of a program and to identify the major components, dealing with the Recycle bin, my comput my Documents Create a floppy	Lecture Theoretical	Discussion and solving exercises, Quiz, Homework

6 7	1T+2p	The Student understands the lesson	disk, copy the folders and files, to take advantage of cutting and pasting and knowledge of the properties of disks, folders and files Take advantage of the control programs Control panel: such as the mouse icon, and the ic display and how to change the desktop background and	Lecture Theoretical	Discussion and solving exercises, Quiz, Homework

8 9-10 -11 12-13 14-15	1T+2p	The Student understands the lesson	library control screen saver and change the appearance of lists of windows and colors, Remove prog icon. Benefit from the Run option in the implementation of t programs directly and learn how to get help and the various helper methods The use of entertainment programs such a	Lecture Theoretical	Discussion and solving exercises, Quiz, Homework Discussion and solving exercises, Quiz,

	1T+2p	The Student understands the lesson	Media player Window films in the running - Take advantage of additional programs (Accessories), such as a Vision Tools View: command (Zoom) and options, command (Pan) and options, how zoom, Pan at the same time	Lecture Theoretical	Homework Discussion and Solving exercises, Quiz, Homework
	1T+2p	The Student understands the lesson	- Microsoft	Lecture Theoretical	Discussion and

	1T+2p	The Student understands the lesson	Excel program, how to run it, how to enter numerical values in columns and stores , add new columns or rows, and apply some functions such as addition and other mathematical operations	Lecture theoretical	Solving exercises, Quiz, Homework

11 Course Evaluation

Mid-term exam score of (40) (10 practical marks, 10 attendance and participation marks, and 20 theoretical marks)
The final course exam grade is (60) (10 practical exam grades and 50 theoretical exam grades)

12 Learning and Teaching Resources

Required textbooks (curricular books, if any)	Computer basics and office applications, Ministry of Higher Education a Scientific Research - Department of Research and Development
Main references (sources)	Available books for subject vocabulary, which include Word and Excel
Recommended books and references (scientific journals, reports…)	Recommended supporting books and references (scientific journals and reports)
Electronic References, Websites	Electronic references, Internet sites

Course Description Form

1. Course Name: Engineering Drawing
2. Course Code: C1-7
3. Semester / Year: First Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total): 6 hour in week
7. Course administrator's name (mention all, if more than one name)
Name: Huda Karim Kazem Email: vvknk4666a@gmail.com

8. Course Objectives

Teaching the student, the principles of elementary engineering drawing and computer drawing programs efficiently and quickly to enable h

to express his ideas through him.

Qualifying the student to draw and read engineering maps with knowledge of architectural and structural terms that are used in maps.

9. Teaching and Learning Strategies

Strategy	Lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	Engineering drawing	Basics of engineering drawing tools used, installation of the panel, types of lines	Practical drawing	Homework + Exam
2	6	Engineering drawing	Writing in Kufic Arabic geometric calligraphy and writing English letters and numbers in geometric calligraphy	Practical drawing	Homework + Exam

3	6	Engineering drawing	Engineering processes, halving a straight segment, halving angle, connecting a straight with a circle with an arc, connecting two lines with an arc, drawing Equilateral triangle	Practical drawing	Homework + Exam
4	6	Engineering drawing	Engineering operations Drawing a pentagon and hexagon shape in more than one way and drawing a seven-sided shape	Practical drawing	Homework + Exam
5	6	Engineering drawing	Straight tangent drawing of two circles from the inside and outside, arc tangent to the inside and outside circles	Practical drawing	Homework + Exam
6	6	Engineering drawing	Ellipse	Practical drawing	Homework + Exam
7	6	Engineering drawing	Apply drawing geometric shapes using basic geometric processes.	Practical drawing	Homework + Exam

8	6	Engineering drawing	Principles of projection, method of placing dimensions on drawing, exercises on projection.	Practical drawing	Homework + Exam
9	6	Engineering drawing	Applications of axial projection on simple objects. Applications of Axial Projection on Objects with Cylindrical Protrusions and Cavities	Practical drawing	Homework + Exam
10	6	Engineering drawing	Drawing the isometric perspective	Practical drawing	Homework + Exam
11	6	Engineering drawing	Oval drawing with isometric perspective	Practical drawing	Homework + Exam
12	6	Engineering drawing	Exercises on the isometric perspective	Practical drawing	Homework + Exam
13	6	Engineering drawing	Finding the Missing Projectio with Isometric Perspective Drawing	Practical drawing	Homework + Exam
14	6	Engineering drawing	Exercises, finding the missing projection with isometric perspective drawing	Practical drawing	Homework + Exam

15	6	Engineering drawing	Explanation of passages and exercises about syllables	Practical drawing	Homework + Exam

11. 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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The book of engineering drawing by the author Abdul Rasoul Al-Khafaf
Main references (sources)	George Omura The Complete Guide 2007 LT AutoCAD Aldar
Recommended books and references (scientific journals, reports…)	Arab Science, Beirut Lebanon 2
Electronic References, Websites	All journals specialized in engineering drawing

Course Description Form

1. Course Name: Engineering Drawing
2. Course Code: C1-9
3. Semester / Year: First Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total): (15) credit hours of 2 hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Duaa Fadhel Email:

8. Course Objectives

1- use references and terminology skills.
2- skills in data on the subject collection and analysis.
3- exploit the available potential skills.
4- hold Almgaranat subject skills
5- preparing concepts on the subject skills.

9. Teaching and Learning Strategies

Strategy	Lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Engineering drawing	Human needs and means to satisfy ther The nature of the economic problem	lecture	Homework + Exam

2	2	Engineering drawing	Patterns of solving the economic proble - The concept of demand	Discussion dialogue	Homework + Exam
3	2	Engineering drawing	How to calculate demand - The price elasticity of demand internal intersectir	Discussion dialogue	Homework + Exam
4	2	Engineering drawing	Display concept - Price equilibrium	Discussion dialogue	Homework + Exam
5	2	Engineering drawing	The concept of production - Division c labor	Lecture	Homework + Exam
6	2	Engineering drawing	The concept of production - College c average costs	Discussion dialogue	Homework + Exam
7	2	Engineering drawing	TTM total and average and marginal - Forms and characteristics	Discussion dialogue	Homework + Exam
8	2	Engineering drawing	Full monopoly market - National incor	Discussion dialogue	Homework + Exam
9	2	Engineering drawing	Barter _ Inflation	Lecture	Homework + Exam
10	2	Engineering drawing	Public needs _ Elements of public expenditure	Lecture	Homework + Exam
11	2	Engineering drawing	Examples of public expenditure - The impact of expenditures on production	Lecture	Homework + Exam

12	2	Engineering drawing	State revenues from its property - Tax elements	Lecture	Homework + Exam
13	2	Engineering drawing	Economic purposes, social purposes - Direct and indirect taxes	Lecture	Homework + Exam
14	2	Engineering drawing	Price relative price ascending and descending - Practical cases on the type of taxes	Lecture	Homework + Exam
15	2	Engineering drawing	Examples of the Tax Justice - Economi impact of public loans	Discussion dialogue	Homework + Exam

11. 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

12. Learning and Teaching Resources

Website and international magazines	

Course Description Form

1Course Name
Construction Materials
2 Course Code
C1−1
3 Term /Year
The second course for the academic year 2025/2026
4 Date this description was prepared
24/1/2025
5 Available Attendance Forms
In-Person
6 Number of study hours (total)/number of units (total)
(2 theoretical + 2 practical) by (4) hours per week = 120 total hours
7 Course Admin Name
Name: Alaa Humeed Abdullah Email : hameedalaa095@gmail.com
8 Course objectives:

Objectives of the course	• **Introducing the student to the properties of the construction materials and the methods of their productio** • **Introducing the student to modern alternatives that currently exist and modern methods of production.** • **Qualifying the student to carry out standard tests to find out the extent to which the construction materials conform to the specifications and determine the possibility of using them in construction, which ensures strength, safety and economy.**
9 TEACHING AND LEARNING STRATEGIES	
Strategy	**Identify the basic concepts of construction materials.** • **Expanding students' perceptions and enhancing the concept of construction materials by giving them general principles and concepts about construction materials, their types, destructive and non-destructive examination methods through knowledge of the site and the quality of origin.** • **Giving the student experience in choosing the appropriate type of construction material a choosing the appropriate examination method for it.** • **Identifies the Iraqi specifications for construction materials and methods of estimating th**

	quantities of materials necessary for the construction work.

10 Course Structure

Week	Hours	Intended Learning Outcomes	Unit or Topic Name	Learning method	Valuation Method
First	2T + 2P	Student understands the lesson	Binders and their types, moisture-resistant binders (grout) properties and workmanship.	Theoretical lecture and implementation of testing experiment of moisture-resistant binders, plaster , standard texture, hardening time	Discussion, Quick Quiz, Homework and Lab Report
Second	2T + 2P	Student understands the lesson	Materials that resist moisture (cement mortar , cement mortar Nora), Nora , its method of manufacture, its properties	Theoretical lecture and implementation of plaster softness examination experiment , tensile strength and durability of plaster	Discussion, Quick Quiz, Homework and Lab Report

Third	2T + 2P	Student understands the lesson	Gypsum products, their types , properties, secondary ceiling materials and types.	Theoretical Lecture and Implementation of Standard Examinations Experiment for Alkashi, Pressure Examination and Refractive Criteria for Alkashi and Concrete Slabs	Discussion, Quick Quiz, Homework and Lab Report
Fourth	2T + 2P	Student understands the lesson	Application materials, kashi, slabs and their types, methods of manufacture, method of application, joints	A theoretical lecture and introducing the student to the standard specifications for examining moisture-proof materials	Discussion, Quick Quiz, Homework and Lab Report
Fifth	2T + 2P	Student understands the lesson	Wood origin, types used, methods of use, methods of drying wood and defects of wood.	Theoretical lecture and implementation ofthe examination of vertical and parallel pressure of wood fibers	Discussion, Quick Quiz, Homework and Lab Report

Sixth	2T + 2P	Student understands the lesson	Metals (ferrous and non-ferrous materials) and their uses in buildings, iron, methods of manufacture, types and uses	Theoretical Lecture and Execution of Wood Splitting Examination and Bending Examination	Discussion, Quick Quiz, Homework and Lab Report
7	2T + 2P	Student understands the lesson	Anti-humidity materials and the reason for their use, anti-humidity materials: types, methods of manufacture and uses	Theoretical lecture and introducing the student to the standard specifications for the examination of heat insulation materials and sound insulation materials available	Discussion, Quick Quiz, Homework and Lab Report

Eighth	2T + 2P	Student understands the lesson	Semi-flexible and flexible anti-moisture materials, their types, uses, methods of manufacture and liquid anti-moisture materials	A theoretical lecture and introducing the student to the standard specifications for examining materials for dyes	Discussion, Quick Quiz, Homework and Lab Report
Ninth	2T + 2P	Student understands the lesson	Epoxy, its definition, properties, types, and uses.	Theoretical lecture and implementation of testing ductility by combustion method for asphalt – cement	Discussion, Quick Quiz, Homework and Lab Report
Tenth	2T + 2P	Student understands the lesson	Thermal insulation materials, acoustic insulation materials.	Theoretical lecture and implementation of the Ring and Ball Test	Discussion, Quick Quiz, Homework and Lab Report

Eleventh	**2T + 2P**	**Student understands the lesson**	**Dyes, glass**	**Theoretical lecture and implementation of the Ductility Test experiment**	**Discussion, Quick Quiz, Homework and Lab Report**
Twelveth	**2T + 2P**	**Student understands the lesson**	**Overview of asphalt materials, properties of asphalt materials.**	**Theoretical lecture and implementation of the Flash Point examination experiment**	**Discussion, Quick Quiz, Homework and Lab Report**
Thirteen	**2T + 2P**	**Student understands the lesson**	**Types of asphalt and its uses in construction works.**	**Theoretical lecture and implementation of the Spot Test**	**Discussion, Quick Quiz, Homework and Lab Report**

fourteenth	**2T + 2P**	**Student understands the lesson**	**Tartar paste (diamond) Uses, properties and standard tests**	**Theoretical lecture and implementation of standard tests for binders (epoxy)**	**Discussion, Quick Quiz, Homework and Lab Report**
fifteenth	**2T + 2P**	**Student understands the lesson**	**Bituminous felt , properties, applications and field tests**	**A theoretical lecture with an introduction to standard glass examinations**	**Discussion, Quick Quiz, Homework and Lab Report**

11 Course Evaluation

The evaluation is based on:

1. **Midterm Exam (20% Theoretical + 10% Practical)**
3. **The work of the year (10%) shall be taken into account attendance and participation .**
4. **Final exam (40% N + 10% N) first round and second round.**

12 Learning and Teaching Resources

Required textbooks (methodology if any)	
Key References (Sources)	Building Construction Book/ Zuhair Sako + Artin Levon
Recommended supporting books and references (scientific journals, reports...)	All discreet scientific journals related to construction materials

E-References, Websites	• Book of Building Materials and Raw Materials Used in Construction • Asphalt/Electronic Technology

Course Description Form

1. Course Name: Engineering Mechanics
2. Course Code: C1-2
3. Semester / Year: Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
3 house in week
7. Course administrator's name (mention all, if more than one name)
Name: سلمان خيون خضر Email: Salman.khayoon@mtu.edu.iq

8. Course Objectives

Teaching the student to analyze the forces and loads imposed on the bodies and
extract the stresses as a result of these forces and their attachment to the materials
that make up these bodies, analyze the facilities and find the forces and stresses in their parts as a result of shedding external loads and stuck to the dimensions of the different parts in engineering facilities to withstand the stresses imposed on them safely and economically.

9. Teaching and Learning Strategies

1 –Lectures 2- laboratory 3-mechanical workshops 4- systematic training
5-summer training

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Strength of materials	Introduction about strength of materials, Centroids of simple shapes	Theoretical + practical	Test + practical
2	3	Strength of materials	Centroids of complex shapes	Theoretical + practical	Test + practical

3	3	Strength of materials	Moment of inertia for the simple shapes	Theoretical + practical	Test + practical
4+5	3	Strength of materials	Moment of inertia for the complex shapes	Theoretical + practical	Test + practical
6	3	Strength of materials	Strength of materials, definit of stress, types of stresses factor of safety	Theoretical practical	Test + practical
7	3	Strength of materials	Strain, hook's law	Theoretical practical	Test + practical
8	3	Strength of materials	Lateral strain, poison's ratio	Theoretical practical	Test + practical
9+10	3	Strength of materials	Shear force and bending moment diagrams	Theoretical practical	Test + practical
11	3	Strength of materials	Bending stress for beams	Theoretical practical	Test + Practical
12	3	Strength of materials	Shear stress for beams	Theoretical practical	Test + Practical
13	3	Strength of materials	Beams which making from two materials	Theoretical practical	Test + Practical
14+15	3	Strength of materials	Reinforced concrete beams	Theoretical practical	Test + Practical
11. Course Evaluation					

10% Practical 10% Evaluation 20 %Theoretical 60 %Final (10 Practical+50 Theoretical)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Textbooks countable by the Technical Education, Engineering Mechanics by Higdon, Singer for Strength of Materials.
Main references (sources)	Engineering Mechanics static's Edition 12, by Hibble
Recommended books and references (scientific journals, reports…)	Adoption of teaching on external sources + methodology in the preparation of lectures
Electronic References, Websites	Engineering Mechanics static and Dynamic I.C.Joung&B.C.Rogers

Description Form

1.Course Name:
surveying techniques
2.Course Code:
C1-3
3.Semester / Year:
2025- 2026 second semester
4.Description Preparation Date:
2025
5 Available Attendance Forms:
Students in first stage
6 Number of Credit Hours (Total) / Number of Units (Total)
(60) hours and (4) units
7 Course administrator's name (mention all, if more than one name)

Name: Jabbar Hassoon Hasan
Email: jabbar.hasson@mtu.edu.iq

8 Course Objectives	
Course Objectives	• Introducing students to the basics of surveying building and knowing how to drop or survey a specific area • How to settle and amend land • Knowing the properties of horizontal and vertical angles. • Introduce the student to the fax. • Introducing the student to modern surveying devices and methods of working on them

9 Teaching and Learning Strategies	
Strategy	1- Asking questions and inquiries that are distinguished by depth and accuracy. 2- Directing the student towards understanding the cause and reason. 3- Developing a digital sense of expression. 4- Brainstorming.

10 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Grade line Calculation of the slope of the Grade line Finding the elevations of the points of the Grade line if the slope is known		Theory and Practical	1. Quick questions. 2. Weekly repo 3. Daily exams. 4. Discussing problems and solutions
2	4	Calculation of land areas and cross sections		Theory and Practical	
3	4	Calculating areas using a planometer		Theory and Practical	
4	4	Calculating the volumes of earthen quantities for cut and fill		Theory and Practical	
5	4	Checking and adjusting the leveling device - balancing the leveling lines (leveling balancing).		Theory and Practical	
6	4	Contour lines - their properties - Contour period - Factors on which the contour period depends - Determination of contour lines (Direct Method)		Theory and Practical	
7	4	Methods for determining contour lines (indirect methods), sectional method, set point method, square method		Theory and Practical	
8	4	drawing contour lines		Theory and Practical	
9	4	Slopes - Calculation of volumes for tanks - Drawing of sections from contour lines		Theory and Practical	
10	4	Direction - Circular direction- bearing		Theory and Practical	

11	4	Surveying using a compass	Theory and Practical	
12	4	Curves - Horizontal Curves - Elements of a Simple Circular Curve	Theory and Practical	
13	4	Simple Circular Curve Design - Simple Circular Curve Drawing	Theory and Practical	
14	4	Vertical Curves - Vertical Curve Design	Theory and Practical	
15	4	General Review	Theory and Practical	

11 Course Evaluation

Mid semester		Final semester	
40 %	10 degrees practical	60 %	
	10 degrees theory		
	10 degrees assessment	10 degrees practical	50 degrees theory

12 Learning and Teaching Resources

Required textbooks (curricular books, if any)	**المساحة المستوية والطوبوغرافية** **المساحة العملي**
Main references (sources)	**المساحة الهندسية**
Recommended books and references (scientific	**Surveying principles and application**

journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: Engineering Mechanics
2. Course Code: C1-4
3. Semester / Year: Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
study hours at 1 hour per week 15
7. Course administrator's name (mention all, if more than one name)
Name: Doaa Fadel

Email:

8. Course Objectives

1 - Understanding the Qur'anic expression from which the rules of the Arabic language are derived.
2- Introducing students to the basic and sub-indicators.
3- Knowing the artistic expression contained in the Holy Qur'an

9. Teaching and Learning Strategies

1 –Lectures 2- laboratory

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Its concept and importance	Quranic expression grammatically	Lecture	Test
2	1	Civilizations	Linguistic expression of the Qur'an	Lecture	Test
3	1	Concept	Badr Shaker Al-Sayyab	Lecture	Test

4	1	Concept	Parent and subsidiary tags	Lecture	Test
5	1	Concept	Nominal sentence	Lecture	Test
6	1	Concept	Anne and her sisters	Lecture	Test
7	1	Its concept a importance	He and her sisters	Lecture	Test
8	1	Its concept and importanc	The difference between that and that	Lecture	Test
9	1	Its concept and importanc	The five actions	Lecture	Test
10	1	Its concept and importanc	Linguistic errors	Lecture	Test
11	1	Its concept and importanc	Linguistic information	Lecture	Test
12	1	Its concept and importanc	Al-Muthanna and his Bedouin	Lecture	Test
13	1	Its concept and importanc	Sound masculine plural	Lecture	Test
14	1	Its concept and importanc	Sound feminine plural	Lecture	Test

15	1	Its concept and importanc	Grammar engineering	Lecture	Test

11. Course Evaluation

Use of achievement tests
Daily
Monthly
Final

12. Learning and Teaching Resources

International websites and magazines	

Course Description Form

1. Course Name: Mathematics 2
2. Course Code: C1-5
3. Semester / Year: Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 2 theory * 15 weeks = 30 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: fatima abbas ahmed

Email: fatima. abbas @mtu.edu.iq
8. Course Objectives: to develop the student's ability to use mathematics in practical applications and to benefit from it in other engineering lessons. The student learns different ways of representing equations, mathematical laws and various data on the formation of curves in a graph and different types of diagrams. commensurate with the purpose of drawing them.

Course Objectives	**1-understand the key concepts and knowledge of the rules and the laws of mathematics and its application in space technology.** **2-the subject of mathematics that are designed to clarify the practical and philosophical challenges of the current engineering mathematics that spurred this constant evolution, as well as providing basic concepts of differentiation and integration useful for further st of the science of engineering and** **applied mathematics in the scientific and practical field** **3-students acquire the skills to resolve issues**

9. Teaching and Learning Strategies

Strategy	1-Preparation and implementation of research and projects by students within the vocabulary section of space technology materials and introduction of the applications of mathematics and presented in the annual student conferences. 2-Develop and upgrade of the vocabulary of mathematics to keep up with development in order to achieve personal development to the leve the students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the lesson	Integration and Indefinite integral	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
2	2	The student understands the lesson	Integration of Logarithmic functions	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
3	2	The student understands the lesson	integration of Function exponential's	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
4	2	The student understands the lesson	Definite integral, Application of definite integrals, Area under the curve, Area. between two curves	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
5	2	The student understands the lesson	. Rotational volumes, arc lengths	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

6	2	The student understands the lesson	Physics and engineering applications (work, torque, momentum, moment of .inertia)	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
7	2	The student understands the lesson	General methods of integration, including substitution and division	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
8	2	The student understands the lesson.	Use partial, exponential and logarithmic fractions.	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
9	2	The student understands the lesson.	Numerical methods of integration, trapezoidal rule, rule (calculating the volume earthy quantities and the are of longitudinal sections	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
10	2	The student understands the lesson.	Solving discrete, homogeneo and linear differential equations with their. various applications within the field specialization	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
11	2	The student understands the lesson.	Find the value of the highest lowest point of a vertical Curve	Lecture theoretical	
12	2	The student understands the lesson.	Complex numbers, addition, subtraction, multiplication, division	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

13	2	The student understands the lesson.	Polar formula, conversion of polar formula to algebraic and vice versa, powers and roots, representation of roots by drawing	Lecture theoretical	Discussion and solving exercises, Quiz, Homework
14, 15	2	The student understands the lesson.	. Statistical processes, frequency distributions, histogram, frequency curve, .mean, range, standard deviation, variance and relative applications	Lecture theoretical	Discussion and solving exercises, Quiz, Homework

11. Course Evaluation

1. The first month exam (10%Theory)
2. The second month exam (10%Theory)
3. Acts of the course (10%) is taken into account attendance and participation.
4. Final exam (70%T) first-round and second round.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Institute library for additional resources for the curriculum
Main references (sources)	Thomas 'Calculus
Recommended books and references (scientific journals, reports…)	All journals deals with mathematic
Electronic References, Websites	Website deals with mathematic

Course Description Form

1. Course Name: the computer
2. Course Code: C1-6
3. Semester / Year: Academic year 2025 – 2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: Theoretical and practical lectures
6. Number of Credit Hours (Total) / Number of Units (Total) 1 theoretical *15 weeks = 15 total hours and 2 practical *15 weeks = 30 hours

7. Course administrator's name (mention all, if more than one name)	
Name: Huda Karim Kazem Email: vvknk4666a@gmail.com	
8. Course Objectives	
Course Objectives	**1-Knowing the optimal use of the computer drawing program, starting with studying three-dimensional objects and h to deal with them With it, in addition to AutoCAD, deletion, rotation, layers, and photography. 2- Introducing the student to the use of the calculator in the drawing and design process in the AutoCAD program**
9. Teaching and Learning Strategies	
Strategy	• The teacher introduces students to the most important main applications of ready-made software applications• Giving students extracurricular assignments that require them to apply skills and self-explanations in experimental ways • Interrogating students through seminars by asking thinking questions (how, why, when, where, which) for

	specific topics. • Using the method of brainstorming and feedback in order to activate the accumulated experiences of student by linking the study materials that were taken in the previous academic stages and linking them to the new ones.

10. Course Structure

Week	Hours	Learning method	Unit or subject name	Required Learning Outcomes	Evaluation method
The First	2	Giving lectures to studen	- AutoCAD 2004 program / getting to know the program's working environment and methods of accessing commands and instructions, storing and opening files, auxiliary commands, units, drawing limits, methods of selecting and selecting objects.	General understanding of the top	Using Oral And Written questioning methods
The Second	2	Giving lectures to studen		General understanding the topic	Using Oral And Written questioning methods

the third	2	Giving lectures to studen	Commands POLAR/OTRAK /LWT/ORTHO / OSNAP /GRID/SNAP Distance command And the Area command	General understanding the topic	Using Oral And Written questioning methods
Fourth -fifth	2	Giving lectures to studen	View Tools: The Zoom command and its options, the Pan command and its options, how to work zoom and pan at the same time, the Regen command in modifying graphics.	General understanding the topic	Using Oral And Written questioning methods
Sixth-seven	2	Giving lectures to studen	Drawing commands Basic Draw: Line, Multiline, Construction line, Polyline, Polygon Rectangle, Arc, Circle, Revcloud, Spline, Ellipse, Make block, Insert block, Point Hatch, Region	General understanding the topic	Using Oral And Written questioning methods

Eighth-nint	2	Giving lectures to studen	Edit commands Offset, Mirror, Copy, Erase, Modify, Array, Move, Rotate Scale, Fillet, Chamfer, Extend, Trim, Stretch, Explode	General understanding the topic	Using Oral And Written questioning methods
The tenth eleventh twelveth	2	Giving lectures to studen Giving lectures to studen	Editing commands Offset, Mirror, Copy, Erase, Modify, Array, Move, Rotate Scale, Fillet, Chamfer, Extend, Trim, Stretch, Explode	General understanding the topic General understanding the topic	Using Oral And Written questioning methods Using Oral And Written questioning methods
Thirteenth	2				

fourteenth fifteenth			Commands for writing and modifying Text: Single line Text, Multi line text How to create new writing styles Get to know the Design Center and benefit from ready-made frames, landscape models, electrical tools and all specialties. Engineering Divide commands: Divide Measure Control drawing specifications: Colo, Lineweight, Linetype. Modify the properties of graphic elements using Match properties, Properties Grips The concept of computer		

			viruses: how to get infected, Their types, treatment, and dealing with them through anti-virus programs available within the Windows operating system environment		

11. Course Evaluation

Mid-term exam score of (40) (10 practical marks, 10 attendance and participation marks, and 20 theoretical marks)
The final course exam grade is (60) (10 practical exam grades and 50 theoretical exam grades)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Institute library for additional resources For the curriculum
Main references (sources)	Available books for subject vocabulary, which include a program AutoCAD
Recommended books and references (scientific journals, reports…)	All relevant scientific journals With AutoCAD program
Electronic References, Websites	Websites related to ready-made applications

Course Description Form

1. Course Name: Engineering Drawing
2. Course Code: C1-7
3. Semester / Year: Second Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total): 6 hour in week
7. Course administrator's name (mention all, if more than one name)
Name: Huda Karim Kazem

Email: vvknk4666a@gmail.com

8. Course Objectives

Teaching the student the principles of elementary engineering drawing and computer drawing programs efficiently and quickly to enable him to express his ideas through him.

Qualifying the student to draw and read engineering maps with knowledge of architectural and structural terms that are used in maps.

9. Teaching and Learning Strategies

Strategy	Lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	Engineering drawing	AutoCAD applications, redefining the relationship between AutoCAD and its use the completion of two-dimensional drawings (D2) and three-dimensional (D3)	Practical drawing	Homework + Exam

			And open a new page in the program, Determine the scope of the drawing (Limits),Draw a painting frame and finding data, with the application of writing inside the spreadsheet (Text)		
2	6	Engineering drawing	Learn about the types of fonts and how to obtain and use them in AutoCAD by placing them in multiple layers, different colors, and different weight line thickness	Practical drawing	Homework + Exam
3	6	Engineering drawing	Drawing basic geometric shapes, triangle, pentagon, hexagons and polygons in general, ellipse Connecting two lines p a circle sector, connecting two circles with an arc by instructing (circle Ttr) Connecting a line with a circle with an arc in the same way	Practical drawing	Homework + Exam

4	6	Engineering drawing	Drawing composite geometric shapes and mechanical parts (applications to engineering processes)	Practical drawing	Homework + Exam
5	6	Engineering drawing	Drawing projections of stereoscopic shapes and placing dimensions on them using multiple layers (layers)	Practical drawing	Homework + Exam
6	6	Engineering drawing	Draw projections of stereo shapes using different font colors and different thickness by changing properties	Practical drawing	Homework + Exam
7	6	Engineering drawing	Find the missing projection and continue drawing the projections	Practical drawing	Homework + Exam
8	6	Engineering drawing	Putting additions to the drawings (gradient & hatch), how to add additional inscriptions to the program from external sources	Practical drawing	Homework + Exam
9	6	Engineering drawing	Drawing the stereoscopic shape in a way (snap	Practical drawing	Homework + Exam

			Isometric) and drawing sections in the same way And the method of repeating shapes using the command (Rectangular array & array Polar)		
10	6	Engineering drawing	Drawing an integrated panel containing the types of drawings (D2) and (D3) and containing a spreadsheet and explanation on the drawings, a the way to display shapes with different scenes on one screen using the command (ports view).	Practical drawing	Homework + Exam
11	6	Engineering drawing	Singling out geometric shapes (cube, prism, pyramid)	Practical drawing	Homework + Exam
12	6	Engineering drawing	Singling out geometric shapes (cube, prism, pyramid)	Practical drawing	Homework + Exam
13	6	Engineering drawing	Singling out geometric shapes (truncated pyramid, cone).	Practical drawing	Homework + Exam
14	6	Engineering drawing	Dealing with the scale of the drawing and the method of	Practical drawing	Homework + Exam

			printing using the command (plot).		
15	6	Engineering drawing	Method of exporting drawings from formula	Practical drawing	Homework + Exam

11. 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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The book of engineering drawing by the author Abdul Rasoul Al-Khafaf
Main references (sources)	George Omura The Complete Guide 2007 LT AutoCAD Aldar
Recommended books and references (scientific journals, reports…)	Arab Science, Beirut Lebanon 2
Electronic References, Websites	All journals specialized in engineering drawing

Course Description Form

1. Course Name: : Civilian workshops
2. Course Code: C1-8
3. Semester / Year: The second semester of the academic year 2025-2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 3 theory * 15 weeks = 45 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Basima Abbas Jabir

Email: basimaabbas86@gmail.com:

8. Course Objectives: **Acquiring the manual skill in using hand tools, measuring tools, and operating machines necessary to prepare the student as a technician**

9. **Specialization in building and construction**

Course Objectives	**Acquiring the manual skill in using hand tools, measuring tools, and operating machines necessary to prepare the student as a technician Specialization in building and construction**

10. Teaching and Learning Strategies

Strategy	1-Explanation and clarification through lectures 2 - Graduation Projects 3- Scientific visits 4- reports

11. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Explanation clarification thro lectures	Measurement processes and to used (tape, vernier, micromete	Conduct experiments	Reports

2	3	Explanation and clarifica through lectures	Practical applications for carpentry works for civil constructions, including:	Conduct experiments	Reports
3	3	Explanation and clarifica through lectures	Work: Wooden doors (pressing doors, packing doors).	Scientific visit	Reports
4	3	Explanation and clarifica through lectures	Work: wooden molds.	Scientific visit	Reports
5	3	Explanation and clarifica through lectures	Applications on reinforcing st making roof, bridge and colun reinforcement (cutting iron, bending iron, and welding the pieces).	Conduct experiments	Reports
6	3	Explanation and clarifica through lectures	Applications on reinforcing st making roof, bridge and colun reinforcement (cutting iron, bending iron, and welding the pieces).	Conduct experiments	Reports
7	3	Explanation and clarifica through lectures	Exercises on cutting and joini structural steel using rivets, screws, and welding.	Conduct experiments	Reports

8	3	Explanation and clarification through lectures	Exercises on cutting and joini structural steel using rivets, screws, and welding.	Conduct experiments	Reports
9	3	Explanation and clarification through lectures	Stone and plaster works: cutti sawing, leveling and perforati	Conduct experiments	Reports
10	3	Explanation and clarification through lectures	Stone and plaster works: cutti sawing, leveling and perforati	Conduct experiments	Reports
11	3	Explanation and clarification through lectures	Connecting pipes to water installations, (u of mechanization), typ of accessories for pipe and methods of connecting them, installations Sanitary sewers, connection methods	Conduct experiments	Reports
12	3	Explanation and clarification through lectures	Connecting pipes to water installations, (u of mechanization), typ of parts for pipes and methods of connectin them, installations Sanitary sewers, connection methods	Scientific visit	Reports

13	3	Explanation and clarification through lectures	Connecting pipes to water installations, (use of mechanization), types of parts pipes and methods of connecti them, installations	Scientific visit	Reports
14	3	Explanation and clarification through lectures	Different types of pipes with t parts, an exercise in making a network of water and sewerag foundations for a residential house. Sanitary sewers and connection methods.	Conduct experiments	Reports
15	3	Explanation and clarification through lectures	Different types of pipes with t parts, an exercise in making a network of water and sewerag foundations for a residential house. Sanitary sewers and connection methods.	reports	Reports

12. Course Evaluation

1. The first month exam (10%Theory)
2. The second month exam (10%Theory)
3. Acts of the course (10%) is taken into account attendance and participation.
4. Final exam (70%T) first-round and second round.

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Building construction book - buildings and factory construction
Main references (sources)	Building construction book - buildings and factory construction

Second Stage

Course Description Form

1. Course Name: : Concrete Technology
2. Course Code: C2-1
3. Semester / Year: The first semester of the academic year 2025-2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 4 theory * 15 weeks = 60 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Basima Abbas Jabir

Email: basimaabbas86@gmail.com:

8. Course Objectives: **Teaching students the basic principles of concrete components and composition, the different methods of mixing and producing concrete on construction sites, modern types of concrete, and practical details of concrete works**

Course Objectives	**Teaching students the basic principles of concrete components and composition, the different methods of mixing and producing concrete construction sites, modern types of concrete, and practical details of concrete works**

9. Teaching and Learning Strategies

Strategy	1-Explanation and clarification through lectures 2 - Graduation Projects 3- Scientific visits 4- reports

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3	Explanation clarification thro lectures	Concrete: plain concrete, reinforced concrete, ready-mix concrete, prestresses concrete	Explanation clarification thro lectures	Reports Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
2	3	Explanation and clarifica through lectures	Concrete strength: compressive strength, tensile strength, shear strength, flexural strength.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions

3	3	Explanation clarification thro lectures	Concrete shrinkage: types of shrinkage, influencing factors.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
4	3	Explanation clarification thro lectures	Non-destructive testing of concrete	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
5	3	Explanation clarification thro lectures	Concrete mix design: A-American method.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
6	3	Explanation clarification thro lectures	Concrete mix design: B- Britis method.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
7	3	Explanation clarification thro lectures	Concrete mix design: B- Britis method.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
8	3	Explanation and clarification through lectures	Practical problems of Concret mix design	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
9	3	Explanation and clarification through lectures	Application problems for designing mixtures using additives.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions

10	3	Explanation and clarification through lectures	Concrete additives: definition benefits and uses, requiremer to be taken when using them	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
11	3	Explanation and clarification through lectures	Use of fibers in concrete	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
12	3	Explanation and clarification through lectures	Use of polymers in concrete	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
13	3	Explanation and clarification through lectures	Special types of concrete: mas concrete, lightweight concrete heavy concrete	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
14	3	Explanation and clarification through lectures	Special types of concrete: mas concrete, lightweight concrete heavy concrete	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions
15	3	Explanation and clarification through lectures	Concrete repair, maintenance and treatment.	Explanation clarification thro lectures	Quick questions. Weekly reports. Daily exams. Discussion Problems and solutions

11. Course Evaluation

1. The first month exam (20%Theory)and (10% practical)
3. Evaluation work (10%) of attendance and participation is taken into account..
4. Final exam (60%T) first-round and second round.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Concrete Technology - Galal Bashir Sarsam, 1986
Main references (sources),	1Concrete additives, Moayad Nouri Al-Khalaf and Hana Abdel Youssef, 1991. . 2 - A.M. Neville 'Properties of Concrete'. 3- Concrete Technology, Moayad Nouri Al-Khalaf and Hana Abdel Youssef, 1984. 4- Concrete Technology, Shaker Ahmed Saleh and Mohamed Ayoub Sabry, 1992

Course Description Form

1. Course Name: Construction Techniques
2. Course Code: C2-2
3. Semester / Year: The first semester of the academic year 2025-2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: mandatoary Attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 120 hours (4 hours per week)
7. Course administrator's name (mention all, if more than one name)
Name: Fatima abbas ahmed

Email: fatima.abbas@mtu.edu.iq

8. Course Objectives

Course Objectives	1. Linking the field of construction and construction with the field of information technologies. 2. Standard properties of building materials. 3. The use of heat and sound insulation materials. 4. Different types of walls and building materials.

9. Teaching and Learning Strategies

Strategy	1- Directing distinctive questions and inquiries in depth and accuracy. 2- Directing the student towards understanding the cause and cause. 3- Developing the digital sense of expression. 4- Brainstorming.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The student understands the lesson	Planning the foundations, using surveying devices	practical	.Quick Questions
2	4	The student understands the lesson	excavations, and attributing the sides of the pits	practical	Weekly Reports

3	4	The student understands the lesson	Working and arming the foundation for a wall or a pillar	practical	Discussing problems and solutions
4	4	The student understands the Lesson	Presentation of a scientific film of the work of the pillars, the ty and how they work and the machi used for that	practical	.Quick Questions
6-5	4	The student understands The lesson	Building works with bricks, English strapping, German strapping, other types of strapping	practical	Weekly Reports
7	4	The student understands the Lesson	Building blocks (block, thermostone).	practical	Discussing problems and solutions
9-8	4	The student understands the Lesson	Wooden mold work, training making a wooden mold for a column, bridge, stairs and roofs.	practical	.Quick Questions
10	4	The student understands the Lesson	Regular and reinforced concrete pouring and the use of manual banging, as well as training in mechanical batting.	practical	Weekly Reports
11	4	The student understands the lesson	A scientific visit to the site of the work of a wooden mold and pouring concrete.	practical	Discussing problems and solutions
13-12	4	The student understands the lesson	Reinforcing work, reinforcing st the correct way to use it, making reinforcing models for a column, roof and bridge.	practical	.Quick questions

14	4	The student understands the lesson	Iron works, iron structural sect and aluminum sections, and w they are not available, show scientific film for that.	practical	Weekly Reports
15	4	The student understands The lesson	Application Balkashi and Alstiker	practical	Discussing problems and solutions
17-16	4	The student understands The lesson	Moisture repellent works, training the use of some moisture retar materials and how to use them optimally, such as asphalt bituminous materials and according to what is available.	practical	.Quick Questions
18	4	The student understands the lesson	Presentation of a scientific film on thermal insula materials: their types, how to use them their benefits	practical	Weekly Reports
19	4	The student understands the lesson	Plaster work, whitewashing a wall using plaster.	practical	Discussing problems and solutions
21-20	4	The student understands the lesson	Ficus and prose works: 1. Using cement mortar. 2. Using cement mortar - Nora.	practical	.Quick Questions
22	4	The student understands the lesson	Packing work Balkashi Alferfury	practical	Weekly Reports

23	4	The student understands the lesson	Wall covering works, wall covering using Al-Hallan	practical	Discussing problems and solutions
24	4	The student understands the lesson	Secondary (Moroccan) ceilings, making a model of a Moroccan ceiling, training on how to instal	practical	.Quick Questions
25	4	The student understands the lesson	Painting work (training on how to use it and the appropriatenes each type on the painted surface).	practical	Weekly Reports
26	4	The student understands the lesson	Sanitary works: Training the student on how to lay sewage pipes, clean water pipes, and the locations of basins, bathtubs, latrines, and others.	practical	Discussing problems and solutions
27	4	The student understands the lesson	Electrical works: training the student to make the spurs and the correct termination around them and how to install some electric lamps (establishing a light point and a blackout).	practical	.Quick Questions
28	4	The student understands the lesson	Mechanical works: ventilation duct work (ie, refrigerated duct work)	practical	Weekly Reports
30-29	4	The student understands the lesson	Road works work as a foundation under the foundation for a road (as a model)	practical	Discussing problems and solutions
11. Course Evaluation					

1- The first semester is practical 20% 2- The second semester is practical 20% 3- Year-end evaluation 10% 4- Practical final 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Building Construction
Main references (sources)	Hand book of building construction 2006
Recommended books and references (scientific journals, reports…)	Road Works Techniques Materials of Construction
Electronic References, Websites	

Course Description Form

1-Course Name:
Construction machines
2-Course Code:
C2−3
3-Semester / Year:
The first and second semester 2025 − 2026
4-Description Preparation Date:
2025
5-Available Attendance Forms:
Students in second stage
6-Number of Credit Hours (Total) / Number of Units (Total)
(60) hours of study at the rate of (4) hours per week
7-Course administrator's name (mention all, if more than one name)
Name: مصطفى عبد الغني

Email:	
9−Course Objectives	
Course Objectives	1. Choosing the appropriate construction machine for work 2. Determining the productivity of the machines 3. Supervising the completion of work
10−Teaching and Learning Strategies	
Strategy	1. The discussion 2. Ask questions 3. Exams

11−Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	2	The student's knowledge of the components of soil and types of rocks	Definition of soil, a geological introduction to the types of rocks, how soils are formed from rocks.	Presentation of the lecture using the powerpoint program	Discussing and asking questions

				and displaying explanatory videos	
3	2	of Student's knowledge soil properties	Soil components, physical properties of soil (moisture content, porosity, void ratio, wet and dry density, saturated and submerged density, .specific weight)	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
4	2	how to The student knows find the granular size of the soil	Soil granular analysis (sieves method and condensate .method)	Presentation of the lecture using the powerpoint program and displaying explanatory	Discussing and asking questions

				videos	
5+4	2	The student's knowledge properties of of the plasticity	Soil plasticity properties (liquidity limit, plasticity .limit, shrinkage limit)	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
6	2	how The student knows soil is classified	Soil classification, using the standard classification Unified) method . (Classification System	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
7	2	The student's knowledge soil permeability of	soil permeability permeability ,(Permeability)	Presentation of the	Discussing and asking questions

		measurement	of coarse soils, permeability of fine soils, methods of measuring them in the field .and in the laboratory	lecture using the powerpoint program and displaying explanatory videos	
8	2	The student knows calculated are stresses how	Types of stresses in soil, total and (Total Stress) stress Effective) effective stress . (Stress	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
9	2	Student's lateral soil The knowledge is calculated pressure	Lateral) soil lateral pressure with an)Earth Pressure explanation of the types of .(Filters(filters	Presentation of the lecture using the powerpoint	Discussing and asking questions

				program and displaying explanatory videos	
+10 11	2	student How is the knowledge 's soil Hussein .T	improve soil propertiesSoil the mechanical ,(stability method .((stackingCompaction	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
+12 13	2	The student knows how compacted is soil his	Types of laboratory compaction tests, field .compaction methods	Presentation of the lecture using the powerpoint program and displaying	Discussing and asking questions

				explanatory videos	
+14 15	2	The student knows ways to improve the soil the	Other methods for improving soil properties and stabilizing it (cement fixation, asphalt .fixation, and turf fixation)	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions

12-Course Evaluation

First Exam	Second Exam	Assessment	Final Exam
degrees 10	**10** degrees	**10** degrees	**50** degrees

13-Learning and Teaching Resources

Required textbooks (curricular books, if any)	Construction machinery / Adnan Al-Dahan
Main references (sources)	construction road planning and equipment / Part One / Dr. Muhammad Ayoub Al-Azi Quantitative Surveying / Salma Farhan

	Builders equipment / d .Muhammad Ayoub Al-Ezzi
Recommended books and references (scientific journals, reports…)	All research and sources related to construction machinery
Electronic References, Websites	

Course Description Form

1. Course Name:
Civil Drawing
2. Course Code:
C2-4
3. Semester / Year:
2025−2026
4. Description Preparation Date:
2025
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
1theory + 5 practical)* 15 weeks = 90 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Fatima Asaad Tayeb Email: fm.alkobaisi@gmail.com

8. Course Objectives	
Course Objectives	1) Introducing the student to how to prepare and produce structural, sanitary, architectural and executive maps.
	2) Introducing the student to how to understand executive and construction maps.
	3) Introducing the student to modern methods of drawing.
	4) students acquire the skills to resolve issues.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures. • Using and touching modern electronic programs. • Scientific films. • Systematic training

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Assessment Method**
1	1T+5P	The student understands the lesson	**Introduction in construction and architectural drawing and type of lines and symbols.**	Theoretical Lecture+ training	Discussion and training
2	1T+5P	The student understands the lesson	**The plan and the first floor of a residential house.**	Theoretical Lecture+ training	Discussion and training
3	1T+5P	The student understands the lesson	**.Front&side&section of residential house.**	Theoretical Lecture+ training	Discussion and training
4	1T+5P	The student understands the lesson	**Introduction to concrete and construction principles, strength of concrete and types of stresses, types of slabs.**	Theoretical Lecture+ training	Discussion and training
5	1T+5P	The student understands the lesson	**Concrete slabs load transition& necessary reinforcing in one &two way slabs.**	Theoretical Lecture+ training	Discussion and training
6	1T+5P	The student understands the lesson	**The structural details for ribbed one & two way slabs.**	Theoretical Lecture+ training	Discussion and training
7	1T+5P	The student understands the	**Introduction to the type of**	Theoretical Lecture+	Discussion and training

		lesson	**concrete beams and structural details of simple supported.**	training	
8	1T+5P	The student understands the lesson	**The structural details of continuous beams.**	Theoretical Lecture+ training	Discussion and training
9	1T+5P	The student understands the lesson	**The structural details of cantilever beams.**	Theoretical Lecture+ training	Discussion and training
10	1T+5P	The student understands the lesson	**Introduction to the structural details of the pre-cast and pre-stressed beams.**	Theoretical Lecture+ training	Discussion and training
11	1T+5P	The student understands the lesson	**The structural details of concert column type & types of ties.**.	Theoretical Lecture+ training	Discussion and training
12	1T+5P	The student understands the lesson	**The structural details of separated &wall footing.**	Theoretical Lecture+ training	Discussion and training
13	1T+5P	The student understands the lesson	**The structural details of combined and continues footing.**.	Theoretical Lecture+ training	Discussion and training
14	1T+5P	The student understands the lesson	**The structural details of raft foundations.**	Theoretical Lecture+ training	Discussion and training
15	1T+5P	The student understands the lesson	**The structural details of pile foundations.**	Theoretical Lecture+ training	Discussion and training

10. 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	
11. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	The Institute's library for additional curricular resources..
Main references (sources)	Drawing and civil construction / Muhammad Rashad Al-Din Structural and civil drawing / Talal Abdel Rahim Hashim Niema/STRUCTURAL DRAWING 1990
Recommended books and references (scientific journals, reports…)	Books in the central library Other internet resources related to construction drawing and its details
Electronic References, Websites	Websites And Other internet resources related to construction drawing and its detail.

Course Description Form

1-Course Name:
Surveying 1
2-Course Code:
C2−5
3-Semester / Year:
2025– 2026 first semester
4-Description Preparation Date:
2025
5-Available Attendance Forms:
Students in second stage
6-Number of Credit Hours (Total) / Number of Units (Total)
(45) hours and (3) units
7-Course administrator's name (mention all, if more than one name)
Name: Jabbar Hassoon Hasan Email: jabbar.hasson@mtu.edu.iq

8-Course Objectives	
Course Objectives	• Familiarize students with angles and directions and use them to find the coordinates of points • How to raise or erase a specific area using polygons and directions • Knowing the properties of horizontal and vertical angles. • Introduce the student to vertical and amplitude curves and ways to project them • Introducing the student to modern surveying devices and methods of working on them
9-Teaching and Learning Strategies	
Strategy	1- Asking questions and inquiries that are distinguished by depth and accuracy. 2- Directing the student towards understanding the cause and reason. 3- Developing a digital sense of expression. 4- Brainstorming.

10−Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3	Identify the theodolite device / its parts, its uses, types, set up the device, read the horizontal and vertical directions of different types.		Theory and Practical	1. Quick questions. 2. Weekl reports. 3. Daily exams. 4. Discussing problems and solutio
2	3	Examine and adjust the theodolite for all types of vertical and horizontal examinations, then find the device's constant.		Theory and Practical	
3	3	Methods of measuring horizontal angles with a theodolite.		Theory and Practical	
4	3	Traverse , types of traverses, their purposes and uses.		Theory and Practical	
5	3	Measure and correct the interior horizontal angles of a closed traverses.		Theory and Practical	
6	3	Methods for measuring the horizontal distances of the sides of a traverses.		Theory and Practical	
7	3	Draw closed and open traverses.		Theory and Practical	
8	3	Survey the traverses with theodolite and tape.		Theory and Practical	

9	3	Calculating the departures and the latitudes of the sides of th traverses and calculating the coordinates.	Theory and Practical	
10	3	Calculating the departures , the latitudes and the coordinates of the sides of the open traverses.	Theory and Practical	
11	3	Methods of measuring vertical angles with theodolite device.	Theory and Practical	
12	3	Finding the height of a building (target) that can be reached using the theodolite device	Theory and Practical	
13	3	Finding a building height (target) that cannot be reached by using the theodolite	Theory and Practical	
14	3	Finding the height of a building (target) by measuring three angles of elevation or depression with a theodolite	Theory and Practical	
15	3	Measure the length of an inaccessible building - measure the horizontal angle between two walls.	Theory and Practical	

11−Course Evaluation

	Mid semester		Final semester	
	40 %	10 degrees practical	60 %	
		10 degrees theory		
		10 degrees assessment	10 degrees practical	50 degrees theory

12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**المساحة المستوية والطوبوغرافية** **المساحة العملي**
Main references (sources)	**المساحة الهندسية**
Recommended books and references (scientific journals, reports…)	**Surveying principles and application**

Course Description Form

1 Course Name:
Quantity Surveying
2 Course Code:
C2−7
3 Semester / Year:
The first semester 2025 − 2026
4 Description Preparation Date:
2024
5 Available Attendance Forms:
Students in second stage
6 Number of Credit Hours (Total) / Number of Units (Total)
(90) hours and (6) units
7 Course administrator's name (mention all, if more than one name)
Name: Dr. Hussein Hafudh Email: hussein. humaish @mtu.edu.iq

8 Course Objectives

Course Objectives	• Calculating the amount of construction items involved in the implementation of Construction and buildings • Knowledge of calculating prices, costs, and managing engineering projects

9 Teaching and Learning Strategies

Strategy	4. The discussion 5. Ask questions 6. Exams

10 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	**The student will be able to understand the lecture paragraphs**	**estimation and the main purpose of estimation**	**Explanation and clarification through lectures**	Reports

2	3	**The student will be able to understand the lecture paragraphs**	**Type of estimation**	**Explanation and clarification through lectures**	Reports
3	3	**The student will be able to understand the lecture paragraphs**	**Calculating the amount of construction work for the foundations of buildings.**	**Explanation and clarification through lectures**	Reports
4	3	**The student will be able to understand the lecture paragraphs**	**Calculating the amount of construction work for the foundations of buildings.**	**Explanation and clarification through lectures**	Reports
5	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of construction work under the D.P.C**	**Explanation and clarification through lectures**	Reports
6	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of construction work under the D.P.C**	**Explanation and clarificatio**	Reports

				n through lectures	
7	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of construction work a above the D.P.C**	**Explanation and clarification through lectures**	Reports
8	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of construction work a above the D.P.C**	**Explanation and clarification through lectures**	Reports
9	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for foundations**	**Explanation and clarification through lectures**	Reports
10	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for foundations**	**Explanation and clarification through lectures**	Reports
11	3	**The student will be able**	**Calculation of the amount**	**Explanatio**	Reports

		to understand the lecture paragraphs	**of concrete, reinforcement, and wooden form for beam**	**n and clarificatio n through lectures**	
12	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for beam**	**Explanatio n and clarificatio n through lectures**	Reports
13	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for column**	**Explanatio n and clarificatio n through lectures**	Reports
14	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for arch**	**Explanatio n and clarificatio n through lectures**	Reports
15	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for slab**	**Explanatio n and clarificatio n through**	Reports

				lectures	
16	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for slab**	**Explanation and clarification through lectures**	Reports
17	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of concrete, reinforcement, and wooden form for stairs**	**Explanation and clarification through lectures**	Reports
18	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of secondary slabs work**	**Explanation and clarification through lectures**	Reports
19	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of finishing work (spray walls)**	**Explanation and clarification through lectures**	Reports
20	3	**The student will be able to understand the lecture**	**Calculation of the amount of finishing work (spray**	**Explanation and**	Reports

		paragraphs	**walls)**	**clarification through lectures**	
21	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of flooring work**	**Explanation and clarification through lectures**	Reports
22	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of electrical and mechanical installations work**	**Explanation and clarification through lectures**	Reports
23	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of water and sanitary installations works**	**Explanation and clarification through lectures**	Reports
24	3	**The student will be able to understand the lecture paragraphs**	**Calculation of the amount of construction work for the precast building**	**Explanation and clarification through lectures**	Reports

25	3	**The student will be able to understand the lecture paragraphs**	**Calculating the quantity of some works and construction paragraphs of steel structures**	**Explanation and clarification through lectures**	Reports
26	3	**The student will be able to understand the lecture paragraphs**	**Contracts and Contracting**	**Explanation and clarification through lectures**	Reports
27	3	**The student will be able to understand the lecture paragraphs**	**Engineering project management**	**Explanation and clarification through lectures**	Reports
28	3	**The student will be able to understand the lecture paragraphs**	**Project scheduling**	**Explanation and clarification through lectures**	Reports
29	3	**The student will be able to understand the lecture paragraphs**	**Project scheduling**	**Explanation and clarificatio**	Reports

				n through lectures	
30	3	**The student will be able to understand the lecture paragraphs**	**Using the computer to calculate the structural paragraphs**	**Explanation and clarification through lectures**	Reports

11 Course Evaluation	2

First Exam	Second Exam	assessment	Final Exam	2
10 degrees practical	**10** degrees practical	**10** degrees	**10** degrees practical	
10 degrees theory	**10** degrees theory		**40** degrees theory	

12 Learning and Teaching Resources	2

Required textbooks (curricular books, if any)	1- Quantitative Survey / Muwaffaq Nasser Al-Saour / Ministry of Education / Institution of Technical Institutes
Main references (sources)	
Recommended books and references (scientific journals, reports…)	1- Quantitative Survey / Sami Miri Kathem, Abdul Karim Al-Shamaa / Ministry of Education / Technical Institutes Authority, 1994. 2 Structural materials / Jalal Bashir Sarsam / Ministry of Education / Technical Institutes Authority, 1992. 4 3 Estimation and specifications of construction works / Ghanem Abdul Rahman Bakr, 1985
Electronic References, Websites	

Course Description Form

1. Course Name: Buildings Construction
2. Course Code: C2-8
3. Semester / Year: The first semester 2025 – 2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: mandatory Attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 120 hours (2 hours per week)
7. Course administrator's name (mention all, if more than one name)
Name: عبد الخالق كمال محمود

Email:

8. Course Objectives

At the end of the academic year, the student will be able to organize the site, direct the works and supervise their implementation, and the student learn the basic principles and supervise the factory building.

9. Teaching and Learning Strategies

Strategy	1 Preparation and implementation of research and projects by students within the vocabulary of buildings and factory construction and presented in annual student conferences. 2 Training students (summer training) at the relevant government institutions to gain students sufficient skills and prepare them for a job well. 3 Develop and update the vocabulary of buildings and factory building to keep.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the lesson	Introduction to construction projects implementation methods , related parties tasks of each of the construction project team members, especially technicians.	theoretical lectures	Discussion

2	2	The student understands the lesson	Organizing and planning the w site and the factors that affect along with preparing a plan for work site for a specific project	theoretical lectures	Discussion
3	2	The student understands the lesson	Earthen excavations, methods supporting the sides of excavation, digging the basements	theoretical lectures	Discussion
4	2	The student understands the Lesson	Techniques used to ext groundwater during construction	theoretical lectures	Discussion
5	2	The student understands The lesson	Dirt spells and the correct ways to them Layers of roads and ways implement them	theoretical lectures	Discussion
6	2	The student understands the Lesson	Moisture repellent layers basements and walls, flatness	theoretical lectures	Discussion
7	2	The student understands the Lesson	Building walls with bricks, types bricks, bonding methods, seams	theoretical lectures	Discussion
8	2	The student understands the Lesson	Building walls with stone (types stone preparation, types of fasten joints)	theoretical lectures	Discussion
9	2	The student understands the lesson	Building walls with building blo (types of blocks and t specifications).	theoretical lectures	Discussion
10	2	The student understands the lesson	Techniques for finishing walls f the inside of all kinds.	theoretical lectures	Discussion

11	2	The student understands the lesson	Techniques for finishing walls f the outside of all kinds.	theoretical lectures	Discussion
12	2	The student understands The lesson	Flooring methods for the gro floor, other floors and ceilings.	theoretical lectures	Discussion
13	2	The student understands The lesson	thermal insulation techniques	theoretical lectures	Discussion
14	2	The student understands the lesson	Concrete Forms (Ty Requirements, Components)	theoretical lectures	Discussion
15	2	The student understands the lesson	Lifting molds, causes of mold fail sliding molds and related techniqu	theoretical lectures	Discussion
16	2	The student understands the lesson	Scaffolding (types, compone safety factors)	theoretical lectures	Discussion
17	2	The student understands the lesson	Secondary ceilings (types methods of installation) installation of air ducts	theoretical lectures	Discussion
18	2	The student understands the lesson	Sanitary installations (pure wa sewage), types of pipes used for e of them, and methods of connec and installation.	theoretical lectures	Discussion
19	2	The student understands the lesson	Doors and windows (types, requirements, components)	theoretical lectures	Discussion
20	2	The student understands the lesson	Joints in buildings (structural jo expansion joints) details of each t and methods of implementation	theoretical lectures	Discussion

21+22	2	The student understands the lesson	Low-cost construction and cost-saving methods (objectives, requirements, construction metho	theoretical lectures	Discussion
23	2	The student understands the lesson	Factory construction (properties, requirements)	theoretical lectures	Discussion
24	2	The student understands the lesson	The different types of factory building and the characteristics of each type	theoretical lectures	Discussion
25	2	The student understands the lesson	Factory Building Factory Components and Production Meth	theoretical lectures	Discussion
26+27	2	The student understands the lesson	Details of the structural members the factory building and their installation methods	theoretical lectures	Discussion
28	2	The student understands the lesson	Joints in factory construction (type components, methods of implementation	theoretical lectures	Discussion
29	2	The student understands the lesson	Methods of moving in buildings, stairs, elevators (types, componen construction methods	theoretical lectures	Discussion
30	2	The student understands the lesson	Fire resistance of buildings and fire control systems.	theoretical lectures	Discussion

11. Course Evaluation

1- The first semester is practical 20%
2- The second semester is practical 20%
3- Year-end evaluation 10%

4- Practical final 50%	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• Civil Engineering / Mr. Bassiouni
Main references (sources)	• Construction of buildings / Zuhair Sako
Recommended books and references (scientific journals, reports…)	• Building materials / Ahmed Abu Odeh
Electronic References, Websites	Other sources on the internet

Course Description Form

1. Course Name: Concrete Technology
2. Course Code: C2-1
3. Semester / Year: The second semester of the academic year 2025-2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: Mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 4 theory * 15 weeks = 60 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Basima Abbas Jabir

Email: basimaabbas86@gmail.com:

8. Course Objectives: **Teaching students the basic principles of concrete components and composition, the different methods of mixing and producing concrete on construction sites, modern types of concrete, and practical details of concrete works**

Course Objectives	**Teaching students the basic principles of concrete components and composition, the different methods of mixing and producing concrete construction sites, modern types of concrete, and practical details of concrete works**

9. Teaching and Learning Strategies

Strategy	1-Explanation and clarification through lectures 2 - Graduation Projects 3- Scientific visits 4- reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Explanation clarification thro lectures	Concrete: plain concrete reinforced concrete, read mix concrete, prestresses concrete	Explanation and clarification thro lectures	Reports Quick questions. Weekly reports. Daily exams. discussion Problems and solutions

2	3	Explanation and clarification through lectures	Concrete strength: compressive strength, tensile strength, shear strength, flexural strength.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussi Problems and solutions
3	3	Explanation and clarification through lectures	Concrete shrinkage: types of shrinkage, influencing factors.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussi Problems and solutions
4	3	Explanation and clarification through lectures	Non-destructive testing of concrete	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
5	3	Explanation and clarification through lectures	Concrete mix design: A- American method.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
6	3	Explanation and clarification through lectures	Concrete mix design: B- Brit method.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
7	3	Explanation and clarification through lectures	Concrete mix design: B- Brit method.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions

8	3	Explanation and clarification through lectures	Practical problems of Concre mix design	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
9	3	Explanation and clarification through lectures	Application problems for designing mixtures using additives.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
10	3	Explanation and clarification through lectures	Concrete additives: definitio benefits and uses, requireme to be taken when using them	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
11	3	Explanation and clarification through lectures	Use of fibers in concrete	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
12	3	Explanation and clarification through lectures	Use of polymers in concrete	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
13	3	Explanation and clarification through lectures	Special types of concrete: ma concrete, lightweight concre heavy concrete	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
14	3	Explanation and clarification through lectures	Special types of concrete: ma concrete, lightweight concre heavy concrete	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions
15	3	Explanation and clarification through lectures	Concrete repair, maintenanc and treatment.	Explanation and clarification through lectures	Quick questions. Weekly reports. Daily exams. discussion Problems and solutions

11. Course Evaluation

1. The first month exam (20%Theory)and (10% practical)
3. Evaluation work (10%) of attendance and participation is taken into account..
4. Final exam (60%T) first-round and second round.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Concrete Technology - Galal Bashir Sarsam, 1986
Main references (sources),	1Concrete additives, Moayad Nouri Al-Khalaf and Hana Abdel Youssef, 1991. . 2 - A.M. Neville 'Properties of Concrete'. 3- Concrete Technology, Moayad Nouri Al-Khalaf and Hana Abdel Youssef, 1984. 4- Concrete Technology, Shaker Ahmed Saleh and Mohamed Ayoub Sabry, 1992

Course Description Form

1. Course Name: Construction Techniques
2. Course Code: C2-2
3. Semester / Year The second semester of the academic year 2025-2026
4. Description Preparation Date: 2025
5. Available Attendance Forms: mandatory Attendance
6. Number of Credit Hours (Total) / Number of Units (Total): 120 hours (4 hours per week)
7. Course administrator's name (mention all, if more than one name)
Name: Fatima Abbas ahmed

Email: fatima. abbas @mtu.edu.iq

8. Course Objectives

Course Objectives	1. Linking the field of construction and construction with the field of information technologies. 2. Standard properties of building materials. 3. The use of heat and sound insulation materials. 4. Different types of walls and building materials.

9. Teaching and Learning Strategies

Strategy	1- Directing distinctive questions and inquiries in depth and accuracy. 2- Directing the student towards understanding the cause and cause. 3- Developing the digital sense of expression. 4- Brainstorming.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The student understands the lesson	Planning the foundations, using surveying devices	practical	.Quick questions
2	4	The student understands the lesson	excavations, and attributing the sides of the pits	practical	Weekly reports

3	4	The student understands the lesson	Working and arming the foundation for a wall or a pillar	practical	Discussing problems and solutions
4	4	The student understands the Lesson	Presentation of a scientific film of the work of the pillars, the ty and how they work and the machi used for that	practical	.Quick questions
6-5	4	The student understands The lesson	Building works with bricks, English strapping, German strapping, other types of strapping	practical	Weekly reports
7	4	The student understands the Lesson	Building blocks (block, thermostone).	practical	Discussing problems and solutions
9-8	4	The student understands the Lesson	Wooden mold work, training making a wooden mold for a column, bridge, stairs and roofs.	practical	.Quick questions
10	4	The student understands the Lesson	Regular and reinforced concrete pouring and the use of manual banging, as well as training in mechanical batting.	practical	Weekly reports
11	4	The student understands the lesson	A scientific visit to the site of the work of a wooden mold and pouring concrete.	practical	Discussing problems and solutions
13-12	4	The student understands the lesson	Reinforcing work, reinforcing st the correct way to use it, making reinforcing models for a column, roof and bridge.	practical	.Quick questions

14	4	The student understands the lesson	Iron works, iron structural sect and aluminum sections, and w they are not available, show scientific film for that.	practical	Weekly Reports
15	4	The student understands The lesson	Application Balkashi and Alstiker	practical	Discussing problems and solutions
17-16	4	The student understands The lesson	Moisture repellent works, training the use of some moisture retar materials and how to use them optimally, such as asphalt bituminous materials and according to what is available.	practical	.Quick Questions
18	4	The student understands the lesson	Presentation of a scientific film on thermal insula materials: their types, how to use them their benefits	practical	Weekly Reports
19	4	The student understands the lesson	Plaster work, whitewashing a wall using plaster.	practical	Discussing problems and solutions
21-20	4	The student understands the lesson	Ficus and prose works: 1. Using cement mortar. 2. Using cement mortar - Nora.	practical	.Quick Questions
22	4	The student understands the lesson	Packing work Balkashi Alferfury	practical	Weekly Reports

23	4	The student understands the lesson	Wall covering works, wall covering using Al-Hallan	practical	Discussing problems and solutions
24	4	The student understands the lesson	Secondary (Moroccan) ceilings, making a model of a Moroccan ceiling, training on how to instal	practical	.Quick Questions
25	4	The student understands the lesson	Painting work (training on how to use it and the appropriatenes each type on the painted surface).	practical	Weekly Reports
26	4	The student understands the lesson	Sanitary works: Training the student on how to lay sewage pipes, clean water pipes, and the locations of basins, bathtubs, latrines, and others.	practical	Discussing problems and solutions
27	4	The student understands the lesson	Electrical works: training the student to make the spurs and the correct termination around them and how to install some electric lamps (establishing a light point and a blackout).	practical	.Quick Questions
28	4	The student understands the lesson	Mechanical works: ventilation duct work (ie, refrigerated duct work)	practical	Weekly Reports
30-29	4	The student understands the lesson	Road works work as a foundation under the foundation for a road (as a model)	practical	Discussing problems and solutions
11. Course Evaluation					

1- The first semester is practical 20% 2- The second semester is practical 20% 3- Year-end evaluation 10% 4- Practical final 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Building Construction
Main references (sources)	Hand book of building construction 2006
Recommended books and references (scientific journals, reports…)	Road Works Techniques Materials of Construction
Electronic References, Websites	

Course Description Form

1. Course Name:
Structural Drawing
2. Course Code:
C2-4
3. Semester / Year:
2025−2026
4. Description Preparation Date:
2025
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
1theory + 5 practical)* 15 weeks = 90 hours Faculty
7. Course administrator's name (mention all, if more than one name)
Name: Fatima Asaad Tayeb Email: fm.alkobaisi@gmail.com

8. Course Objectives	
Course Objectives	1) Introducing the student to how to prepare and produce structural, sanitary, architectural and executive maps.
	2) Introducing the student to how to understand executive and construction maps.
	3) Introducing the student to modern methods of drawing.
	4) students acquire the skills to resolve issues.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lectures. • Using and touching modern electronic programs. • Scientific films. • Systematic training

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Assessment Method
1	1T+5P	The student understands the lesson	**Sketching the structural details of straight halves stair and spiral stair types.**	Theoretical Lecture+ training	Discussion and training
2	1T+5P	The student understands the lesson	**Sketching the structural details of lateral @ cantilever stair.**	Theoretical Lecture+ training	Discussion and training
3	1T+5P	The student understands the lesson	**Sketching the structural details for the reinforced walls of elevators and walls of the basements.**	Theoretical Lecture+ training	Discussion and training
4	1T+5P	The student understands the lesson	**Sketching the typical steel sections.**	Theoretical Lecture+ training	Discussion and training
5	1T+5P	The student understands the lesson	**Sketching the structural details for the bonding of the steel parts according to their carrying loads.**	Theoretical Lecture+ training	Discussion and training
6	1T+5P	The student	**Sketching the bonding of**	Theoretical Lecture+	Discussion and

		understands the lesson	**foundations with steel bases, bonding of tributaries with each other.**	training	training
7	1T+5P	The student understands the lesson	**Sketching the steel truss and bonding of ribs.**	Theoretical Lecture+ training	Discussion and training
8	1T+5P	The student understands the lesson	**Sketching the typical detail in truss joints.**	Theoretical Lecture+ training	Discussion and training
9	1T+5P	The student understands the lesson	**Sketching the structural details for interconnecting walls with prefabricated ceilings.**	Theoretical Lecture+ training	Discussion and training
10	1T+5P	The student understands the lesson	**Sketching the structural details for joints in buildings, expansion joints, and construction joints.**	Theoretical Lecture+ training	Discussion and training
11	1T+5P	The student understands the lesson	**Sketching the sanitary and the fittings of water and sanitary institutions and sanitary furniture and the network of water associations and health of the previous horizontal plans.**	Theoretical Lecture+ training	Discussion and training
13-12	1T+5P	The student understands the lesson	**Sketching the structural details of the inspection basins and**	Theoretical Lecture+ training	Discussion and training

			attached it with sanitary institutions network.		
15-14	1T+5P	The student understands the lesson	**Sketching the structural details of the Septic tanks and storage for house plan.**	Theoretical Lecture+ training	Discussion and training

10. 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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The Institute's library for additional curricular resources..
Main references (sources)	Drawing and civil construction / Muhammad Rashad Al-Din Structural and civil drawing / Talal Abdel Rahim
Recommended books and references (scientific journals, reports…)	Books in the central library Other internet resources related to construction drawing and its details

Course Description Form

1 Course Name:
Construction machines
2 Course Code:
C2−3
3 Semester / Year:
The first and second semester 2025 − 2026
4 Description Preparation Date:
2025
5 Available Attendance Forms:
Students in second stage
6 Number of Credit Hours (Total) / Number of Units (Total)
(60) hours of study at the rate of (4) hours per week
7 Course administrator's name (mention all, if more than one name)
Name: شهد دجى Email:

8 Course Objectives	
Course Objectives	1. Choosing the appropriate construction machine for work 2. Determining the productivity of the machines 3. Supervising the completion of work

9 Teaching and Learning Strategies	
Strategy	7. The discussion 8. Ask questions 9. Exams

10 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	2	The student's knowledge of modern methods of soil improvement	Modern methods of soil stabilization (reinforcement of soil, types of materials used and method of use) (Reinforced Earth)	Presentation of the lecture using the powerpoint program and	Discussing and asking questions

				displaying explanatory videos	
3	2	Knowledge of the student the examination is how conductedCBR	and (CBR california tolerance its importance in the .implementation of roads	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
4	2	The student's knowledge what is joining and its of relationship to relegation	joining in soil and its (Consolidation) relationship to the occurrence .(Settlement) of decline	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions

5+4	2	The student's knowledge phenomenon of of the bloating	swelling phenomenon and the (Swelling) . (Collapse) association	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
6	2	The student's knowledge shear strength of the of the soil	Definition of shear strength and (Shear Strength of soil its importance in calculating the amount of soil bearing . (Bearing Capacity)	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
7	2	student know the How to examination of an is shear Allamehsour the	unconfined shear Unconfined examination . (Compression Test	Presentation of the lecture	Discussing and asking questions

				using the powerpoint program and displaying explanatory videos	
8	2	The student knows how to conduct a direct shear examination	Shear) direct shear check Test(Direct	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
9	2	The student will know how the triaxial shear examination is performed	Triaxial shear examination . (Triaxial Compression Test)	Presentation of the lecture using the powerpoint program	Discussing and asking questions

				and displaying explanatory videos	
+10 11	2	The student's knowledge of how field shear examinations are conducted	In field shear examinations .(Situ Shear Test	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
12	2	Knowledge of the student types of how the foundations	Types of foundations and their relationship to the .amount of soil bearing	Presentation of the lecture using the powerpoint program and displaying explanatory	Discussing and asking questions

				videos	
13	2	Knowledge of the student how the types of foundations	shallow foundations Shallow Foundation and) deep foundationsDeep like)Foundation . (Pile (pillars	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
+14 15	2	The student knows site how carried are investigations out	A simple introduction to the work of soil investigations the types ,(Soil Exploration) of models, the method of taking them, the preparation and depth of the test pits to be .implemented on site	Presentation of the lecture using the powerpoint program and displaying explanatory videos	Discussing and asking questions
11 Course Evaluation					

First Exam	Second Exam	Assessment	Final Exam
10 degrees	**10** degrees	**10** degrees	**50** degrees

12 Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Construction machinery / Adnan Al-Dahan
Main references (sources)	construction road planning and equipment / Part One / Dr. Muhammad Ayoub Al-Azi Quantitative Surveying / Salma Farhan Builders equipment / d .Muhammad Ayoub Al-Ezzi
Recommended books and references (scientific journals, reports…)	All research and sources related to construction machinery
Electronic References, Websites	

Course Description Form

1-Course Name:
Surveying 2
2-Course Code:
C2−5
3-Semester / Year:
2025– 2026 second semester
4-Description Preparation Date:
2025
5-Available Attendance Forms:
Students in second stage
6-Number of Credit Hours (Total) / Number of Units (Total)
(45) hours and (3) units
7-Course administrator's name (mention all, if more than one name)
Name: Jabbar Hassoon Hasan Email: jabbar.hasson@mtu.edu.iq

8-Course Objectives	
Course Objectives	• Familiarize students with angles and directions and use them to find the coordinates of points • How to raise or erase a specific area using polygons and directions • Knowing the properties of horizontal and vertical angles. • Introduce the student to vertical and amplitude curves and ways to project them • Introducing the student to modern surveying devices and methods of working on them
9-Teaching and Learning Strategies	
Strategy	1- Asking questions and inquiries that are distinguished by depth and accuracy. 2- Directing the student towards understanding the cause and reason. 3- Developing a digital sense of expression. 4- Brainstorming.

10−Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3	Curves / types		Theory and Practical	1. Quick questions. 2. Weekl reports. 3. Daily exams. 4. Discussing problems and solutio
2	3	Horizontal curves (elements of the simple circular curve) and the equations used in designing the simple circular curve.		Theory and Practical	
3	3	Methods of projecting horizontal curves / method of tangent columns (Baker's method) - method of hypotenuses (offsets) - method of dividing the strings - method of angles of deviation		Theory and Practical	
4	3	Projection of curves using two theodolite devices.		Theory and Practical	
5	3	Draw a road with its horizontal curves.		Theory and Practical	
6	3	Convex and concave principal curves / Components / Calculation of the length of the vertical curve		Theory and Practical	
7	3	Vertical curve calculations.		Theory and Practical	
8	3	Triangulation, its purposes, its use, the selection of		Theory and	

		triangulation points, triangulation networks.	Practical	
9	3	Measure the base line for the triangulation and the work of the fortifications to measure the tape.	Theory and Practical	
10	3	Measuring the horizontal angles of the triangulation network, calculations and making the necessary fortifications.	Theory and Practical	
11	3	Tachometric survey, types of tachometers.	Theory and Practical	
12	3	Learn about modern electronic measuring devices and how to use them to measure horizontal and vertical distances.	Theory and Practical	
13	3	A general project on the construction of a road or a drainage channel with the calculation of the soil needed to complete the project with its horizontal and vertical curves	Theory and Practical	
14-15	3	An introduction to the device of the Shamah station. The use of the comprehensive station device in measuring the lengths of the sides of a polygon, internal angles and coordinates	Theory and Practical	

11−Course Evaluation

	Mid semester		Final semester	
	40 %	10 degrees practical	60 %	

		10 degrees theory			
		10 degrees assessment	10 degrees practical	50 degrees theory	

12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**المساحة المستوية والطوبوغرافية** **المساحة العملي**
Main references (sources)	**المساحة الهندسية**
Recommended books and references (scientific journals, reports…)	**Surveying principles and application**
Electronic References, Websites	

Course Description Form

1.Course Name:
Construction machines
2.Course Code:
C2−6
3 Semester / Year:
The first and second semester 2025 − 2026
4 Description Preparation Date:
2024
5 Available Attendance Forms:
Students in second stage
6 Number of Credit Hours (Total) / Number of Units (Total)
(60) hours and (4) units
7 Course administrator's name (mention all, if more than one name)
Name: مصطفى عبد الغني

Email:	
8 Course Objectives	
Course Objectives	1. Choosing the appropriate construction machine for work 2. Determining the productivity of the machines 3. Supervising the completion of work
9 Teaching and Learning Strategies	
Strategy	10 The discussion 11 Ask questions 12 Exams

10 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student's knowledge of the importance of machines and ways to obtain them	the , Construction equipment importance of methods of ,machines and the , obtaining them advantages and disadvantages	Presentation ppt and videos	Discussing and asking questions

			of owning or renting machines, with a scientific .film showing		
2	2	The student's knowledge calculating the costs of of owning construction machinery	Calculating the ownership and costs machines (depreciation of costs, investment, . maintenance and repair)	Presentation ppt and videos	Discussing and asking questions
3	2	The student's knowledge of calculating the costs of owning construction machinery	Completing the calculation of costs and ownership of machines, operating costs (fuel costs, oil costs, an explanation of an integrated mathematical question about .calculating all costs)	Presentation ppt and videos	Discussing and asking questions
4	2	The student's knowledge special and standard of machines	Special machines, standard machines, and comparison with the between them presentation of a scientific . film	Presentation ppt and videos	Discussing and asking questions
5	2	The student's knowledge engineering of the foundations of machinery	Engineering foundations for engineering machinery including (resistance , works	Presentation ppt and videos	Discussing and asking questions

		works	to movement and the effect of . tilt)		
6	2	The student's knowledge of the engineering foundations of machinery works	Complementing the engineering foundations for engineering machinery works (the effect of height, swelling and contraction of the soil at the expense of volumes)	Presentation ppt and videos	Discussing and asking questions
7	2	The student's knowledge dozer construction of the machine and its importance	including: ,The quarry (Dozer description of the machine, its types, productivity with a scientific (calculation . film showing	Presentation ppt and videos	Discussing and asking questions
8	2	The student's knowledge of the structural machine loading shovel of the its importance and	Loading shovel (Shovel) and includes (types, difference between them, productivity calculation, work cycle, work coordination) with two .scientific films	Presentation ppt and videos	Discussing and asking questions
9	2	To view the construction machinery	to one of the A scientific visit business sites machines different where . available are	Presentation ppt and videos	Discussing and asking questions

10	2	Student's knowledge drilling machines of	Drilling machines, universal drilling facial ,drilling rig with a scientific film rig . presentation	Presentation ppt and videos	Discussing and asking questions
11	2	Student's knowledge of drilling machines	backhoe) Digging machines shovel, oyster , shovel hydronic with a scientific film (shovel . showing	Presentation ppt and videos	Discussing and asking questions
12	2	The student's knowledge the different types of of transportation machines	Machinery and transport road trucks and paved , units paved, classification - non trucks according of multiple factors, tippers, to calculated productivity is presentation of with the . scientific film a	Presentation ppt and videos	Discussing and asking questions
13	2	The student's knowledge of the different types of transportation machines	Balancing the number of tippers with the size of drilling machines, lorries, locomotives and trailers, and .railway trucks	Presentation ppt and videos	Discussing and asking questions
14	2	The student's knowledge	The stands include (their	Presentation	Discussing and asking questions

		stands and their of the types	types and benefits with the calculation of productivity) with the presentation of a . scientific film	ppt and videos	
15	2	knowledge student's The types of skimmers of the and their benefits	Skimmers, their types, and productivity benefits with a scientific ,calculation . film showing	Presentation ppt and videos	Discussing and asking questions
16	2	Knowing the resistance student's calculating the to productivity of skimming	The productivity of the skimmer the use of the skimmer performance chart in .calculating the productivity	Presentation ppt and videos	Discussing and asking questions
17	2	To view the construction machinery	to a business A scientific visit site with a scientific film . showing	Presentation ppt and videos	Discussing and asking questions
18	2	Student's knowledge soil compacting of machines	Soil compaction machines and their importance, types, places of use, with a scientific . film showing	Presentation ppt and videos	Discussing and asking questions
19	2	Student's knowledge of soil compacting machines	Complementing the Complementary Machines and Calculating Productivity, Theory of Pressure Bulb for	Presentation ppt and videos	Discussing and asking questions

			.Weight Distribution		
20	2	Student's knowledge of soil compacting machines	Supplementation of the vibratory rollers, the production of the rollers	Presentation ppt and videos	Discussing and asking questions
21	2	The student's knowledge available equipment of the for mixing concrete	Material mixing equipment with a for concrete works . scientific film presentation	Presentation ppt and videos	Discussing and asking questions
22	2	The student's knowledge equipment for of the transporting, stacking and polishing concrete	conveying Concrete . equipment compacting and	Presentation ppt and videos	Discussing and asking questions
23	2	The student's of the asphalt knowledge production factor and its importance	Asphalt production plants .types and specifications	Presentation ppt and videos	Discussing and asking questions
24	2	The student's knowledge of the specifications and types of mattresses	Specifications of brushes for asphalt, speed of brushes, types of brushes with a . scientific film presentation	Presentation ppt and videos	Discussing and asking questions
25	2	asphalt To view production plants	to the A scientific visit . asphalt production plants	Presentation ppt and videos	Discussing and asking questions
26	2	The student's knowledge	Almkhandqat types, calculate	Presentation	Discussing and asking questions

		trenches and their types of	rates the with Yeh production of scientific presentation of a the . film	ppt and videos	
27	2	The student's knowledge spending and its of importance	Tunnels, their importance, types with a scientific film . showing	Presentation ppt and videos	Discussing and asking questions
28	2	The student's knowledge methods of of the available tunneling	Digging tunnels with mechanical excavators, ventilating tunnels with a . scientific film showing	Presentation ppt and videos	Discussing and asking questions
29	2	Student's knowledge conveyor belts of	calculating , Conveyor belts transportation costs of Parts belts conveyor by conveyor belts	Presentation ppt and videos	Discussing and asking questions
30	2	The student's knowledge modern systems to of control construction machinery	The use of modern control systems in the construction machinery with a presentation .of a scientific film of its own	Presentation ppt and videos	Discussing and asking questions

11 Course Evaluation

First Exam	Second Exam	assessment	Final Exam
10 degrees	**10** degrees	**10** degrees	**50** degrees

12 Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Construction machinery / Adnan Al-Dahan
Main references (sources)	construction road planning and equipment / Part One / Dr. Muhammad Ayoub Al-Azi Quantitative Surveying / Salma Farhan Builders equipment / d .Muhammad Ayoub Al-Ezzi
Recommended books and references (scientific journals, reports…)	All research and sources related to construction machinery
Electronic References, Websites	

Course Description Form

1 Course Name:
Project Management
2 Course Code:
C2−7
3 Semester / Year:
The first semester 2025 − 2026
4 Description Preparation Date:
2025
5 Available Attendance Forms:
Students in second stage
6 Number of Credit Hours (Total) / Number of Units (Total)
(45) hours and (3) units
7 Course administrator's name (mention all, if more than one name)
Name: Dr. Hussein Hafudh Email: hussein. humaish @mtu.edu.iq

8 Course Objectives

Course Objectives	• Calculating the amount of construction items involved in the implementation of Construction and buildings • Knowledge of calculating prices, costs, and managing engineering projects

9 Teaching and Learning Strategies

Strategy	10 The discussion 11 Ask questions 12 Exams

13 Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	**The student will be able to understand the lecture paragraphs**	**estimation and the main purpose of estimation**	**Explanation and clarification through lectures**	Reports
2	3	**The student will be able to understand the lecture**	**• Calculating excavation and backfilling volumes for different types of foundations.**	**Explanation and clarification through lectures**	Reports

		paragraphs	**• Identifying different types of soil and their analysis, including price evaluation and comparison.**		
3 +4	3	**The student will be able to understand the lecture paragraphs**	**• Calculating the volume of concrete for different structural elements. • Understanding the required steel reinforcement for concrete works. • Estimating costs and material requirements.**	**Explanation and clarification through lectures**	Reports
5	3	**The student will be able to understand the lecture paragraphs**	**Calculating materials for finishing works (such as plastering, flooring, tiling, and painting). • Writing technical reports. • Analyzing price variations and referencing cost estimation guidelines.**	**Explanation and clarification through lectures**	Reports
5	3	**The student will be able to understand the lecture paragraphs**	**• Calculating quantities of materials used in water supply and sewage networks. • Studying price fluctuations and their impact on overall costs.**	**Explanation and clarification through lectures**	Reports
6+7	3	**The student will be able to understand the lecture paragraphs**	**• Understanding the costs of mechanical and electrical installations. • Price evaluation using standard cost**	**Explanation and clarification through lectures**	Reports

			guidelines.		
8	3	**The student will be able to understand the lecture paragraphs**	**• Calculating materials required for roads and pavement construction. • Understanding different materials and their impact on costs.**	**Explanation and clarification through lectures**	Reports
9	3	**The student will be able to understand the lecture paragraphs**	**• Determining costs for electrical and mechanical installations. • Evaluating material requirements for heating, ventilation, and air conditioning systems.**	**Explanation and clarification through lectures**	Reports
10	3	**The student will be able to understand the lecture paragraphs**	**• Estimating labor costs, including skilled and unskilled workers. • Creating labor schedules and workforce distribution plans.**	**Explanation and clarification through lectures**	Reports
11	3	**The student will be able to understand the lecture paragraphs**	**• Understanding types of contracts and their impact on cost structure. • Studying tendering processes and procurement methods.**	**Explanation and clarification through lectures**	Reports
12	3	**The student will be able to understand the lecture paragraphs**	**• Project management fundamentals: • Roles and responsibilities of project managers and teams. • Site supervision and workflow coordination.**	**Explanation and clarification through lectures**	Reports

13	3	**The student will be able to understand the lecture paragraphs**	**• Practical applications: • Preparing work schedules and site plans. • Project execution strategies**	**Explanation and clarification through lectures**	Reports
+14 15	3	**The student will be able to understand the lecture paragraphs**	**• Advanced cost estimation techniques. • Using computer software for financial analysis and project budgeting.**	**Explanation and clarification through lectures**	Reports

Course Description Form

1. Course Name: Professional Ethics
2. Course Code: C1-2
3. Semester / Year: Semester
4. Description Preparation Date: 2025
5. Available Attendance Forms: Attendance is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
3 house in week
7. Course administrator's name (mention all, if more than one name)
Name: سلمان خيون خضر Email: Salman.khayoon@mtu.edu.iq

8. Course Objectives

The course aims to introduce technical institute students to professional ethics according to their technical specialization and to provide them with professional ethical rules that enhance their commitment to them, in their expected field of work after graduation.

9. Teaching and Learning Strategies

1 –Lectures 2- laboratory 3-mechanical workshops 4- systematic training
5-summer training

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	2	Theoretical	**The student understands the lesson Unit (1) – Ethics** **.The concept of ethics and its origin •** **.General rules of ethics •** **.Sources of ethics •**	**Student understand tl**	

			.**Ethical values •** **•The importance of ethics for the individual and society. Theoretical lecture Theoretical tests and brainstorming**		
3	2	Theoretical	Work and profession • Work and its importance. • Work behaviors. • The concept of profession. • Definition of profession. • The difference between the concept of work, profession and craft. • The standards on which the profession should be based		
3	2	Theoretical	**Unit (3) – Professional ethics** **•What is professional ethics**. **•Positive returns of commitment to professional ethics**. **•Characteristics of work ethics**. **•Characteristics of professional ethics**. **•Steps of the acceptable level of professional ethics**.		

5+6	2	Theoretical	**Unit (4) - Values and Professional Ethics** **•Honesty**. **•Truthfulness**. **•Advice**. **•Justice**. **•Good treatment**. **•Mastery of work**.		
7	2	Theoretical	**The student understands the lesson Unit (5) - Patterns of unethical behavior in the profession** **•Administrative corruption**. **o Unethical administrative behavior**. **o Definition of administrative corruption**. **o Types of administrative corruption**. **•Bribery**. **o The concept of bribery**. **o Types of bribery**. **o The difference between a gift and a bribe**. **o The reasons and motives behind bribery**. **•Cheating**. **o The concept of cheating**. **o The nature of cheating at work**. **o Manifestations of cheating in performing the** ○		

			.**job**		
8+9	2	Theoretical	**Unit (6) - Means and methods of establishing professional ethics values** **•Method of establishing professional ethics**. **•Levels of building and establishing professional ethics**. **•Means and methods of establishing professional ethics**. **•Matters that must be taken into account in formulating the ethical charter of the profession**. **•How ethical behavior is promoted at work according to (Kreitner a Kinnicki)**.		
11+10	3	Theoretical	**Ethics of practicing engineering professions (especially in technical and technological institutes)** **Unit (7) - Ethics of the engineering profession** **•The importance of the technician in society**. **•Technical and technological ethics**. **•Conditions of the professional technician**. **•Characteristics of the professional technician**		

11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly and written exams, reports, etc

12. Learning and Teaching Resources	
Kut technical library	Recommended