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

Academic Program and Course Description Guide

2025

Academic Program Description Form

University name: Al-Furat Al-Awsat Technical University

College/Institute: Karbala Technical Institute

Scientific Department: Department of Civil Technologies

Name of the academic or professional program: Diploma

Name of final certificate: Diploma in Civil, Building and Construction Technologies

Academic system: annual system

Description preparation date: 2/15/2025

File Completion Date:

Signature:

Head of Department Name:

Assi. Prof. Abdul Khider Aziz Mutasher

Date:3/3/2025

Signature:

Scientific Associate Name:

Assi.Prof.Mohamad Fadhil Neamha

Date:3/3/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 28-4-2025

Signature: Ali Neamah Hasan Fadhil

28-4-2025

Approval of the Dean

Introduction:

The Department of Civil Technology at the Karbala Technical Institute/Al-Furat Al-Awsat Technical University was established in 2011 to grant a diploma in civil technology. The department follows the annual system. During two academic years, 136 units must be achieved. According to the curriculum at the annual academic level, comprehensive curricula for technical diploma studies have been prepared to ensure that the graduate has the theoretical basics and applied aspects of civil technology.

The department seeks to attract highly qualified academic and administrative staff by ensuring continuous development of staff skills in relation to the department's achievements and encouraging scientific research work;

Giving priority to practical applied research.

The Civil Technologies Department provides the labor market with specialized personnel in inspecting building materials, laboratory soil testing, AutoCAD 2D and 3D skills, using surveying equipment for building projects, and preparing maps. It also provides the labor market with qualified technical personnel to carry out various civil works sections, conduct laboratory and field tests, implement maps and surveys, and calculate quantities and dimensions of civil works projects. They will have the ability to apply knowledge in estimating and calculating quantities and specifications of civil works projects. Moreover, the ability to maintain

laboratory equipment and solve problems of the construction industry to develop its production to obtain a sustainable environment. In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

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

Technical Institute – Karbala	1. **Educational Institution**
Civil Technologies	2. **Scientific Department**
building and construction	3. **Name of the academic or professional program**
Technical diploma	4. **Name of the final certificate:**
Annual	5. **Academic system**: **Annual / Courses / Other**
ABET	6. **Accredited Certification Program**
There is a close relationship with the labor market through communication with official, semi-official and unofficial departments, focusing on laboratory tests and civil works in force in those departments, as the school curricula are updated based on that.	7. **Other external influences:**
2025/2/18	8. **Date the description was prepared**

Course Description: This course description provides a concise summary of the main features of the course and the learning outcomes expected of the student, demonstrating whether the student has made the most of the learning opportunities available. It must be linked to the programmed description..

Program Vision: The Civil Engineering Department works to expand the base of technical education and its modern applications, build close relationships with various sectors of society, exchange scientific and practical expertise, and activate the role of scientific research in various development fields.

Program Mission:

: Striving to prepare distinguished personnel in the field of construction technology, contributing to the achievement of development plans and meeting labor market needs. It also seeks to promote scientific research by publishing solid research that supports the progress of science and education, in addition to providing technical services and contributing to solving problems related to the quality of building materials. It also seeks to disseminate scientific and technical knowledge in the field of civil technology sciences to graduate national cadres at the level of technical development, keeping pace with global developments, and fulfilling the following:

• Focusing on the use of computer, internet, digital, and artificial intelligence technologies and integrating them into the field of construction and building education and training.

• Opening up to the community in the field of the construction industry and activating the relationship with the private sector in the fields of engineering consulting, training, and technical qualification.

• Developing educational and training curricula in line with scientific developments, introducing modern methods in training and qualification, and graduating technical personnel to acquire high skills in the field of construction and building.

Commitment to stimulating joint scientific research between academics in the department and qualified and experienced industrial cadres to solve construction industry problems and develop its production using modern methods.

Program Objectives: 1. Graduating qualified technical personnel to implement various civil works projects, conduct laboratory and field tests, prepare maps and surveys, and calculate quantities and dimensions for civil works projects.

2. Conducting the largest possible number of applied scientific research projects in cooperation with relevant ministries and departments.

3. Ensuring ongoing cooperation between the department and development sectors in the engineering and consulting fields.

Curriculum Structure: All courses/study subjects included in the academic program are in accordance with the approved learning system (annual) according to the requirements of (the Ministry of Higher Education and Scientific Research) with the number of study units.

First academic year/annual system

Notes	Type of subject	Number of units	Number of hours			Subject	Number
			Sum	practical	Theoretical		
	Specialized	8	4	2	2	Construction materials	1
taught in English	Specialized	6	3	1	2	Engineering Mechanics	2
	Specialized	8	4	2	2	Surveying (1)	3
	Specialized	6	3	2	1	Concrete materials	4
taught in English	Specialized	6	3	-	3	Mathematics	5
	Specialized	6	3	2	1	Computer applications (1)	6
	Specialized	12	6	6	-	Engineering drawing	7
	Help	6	3	3	-	Parameters	8
	general	4	2	-	2	Human rights and democracy	9
	Help	4	2	-	2	English Language	10
	Help	4	2	-	2	Technical English	11

	Help	4	2	-	2	Arabic Language	12
		72	36	18	18	Total	

Second academic year/annual system

Notes	Type of subject	Number of units	Number of hours			Subject	Number
			Sum	practical	Theoretical		
	Specialized	8	4	2	2	Concrete technology	1
	Specialized	8	4	4	-	Construction techniques	2
	Specialized	8	4	2	2	Soil mechanics	3
taught in English	Specialized	12	6	5	1	Civil drawing	4
	Specialized	6	3	2	1	Surveying (2)	5
	Specialized	4	2	-	2	Construction machines	6
taught in English	Specialized	6	3	2	1	Calculator Apps (2)	7
	Specialized	6	3	2	1	Quantity surveying	8
	Specialized	4	2	-	2	Buildings and factory construction	9
	Help	4	2	-	2	Baath Party crimes in Iraq	
	Help	4	2	-	2	English Language	
	Specialized	4	2	2	-	The project	10
		70	37	21	12	the total	

Learning Outcomes: : A compatible set of knowledge, skills, and values that the student has acquired after successfully completing the academic program. The learning outcomes for each course must be determined in a way that achieves the program's objectives.

The Department of Civil Technologies is moving towards expanding the base of technical education and its modern applications and building a close relationship with various sectors of society in the field of exchanging scientific and practical

experiences and activating the role of scientific research in various areas of development.

A- Cognitive objectives

A1- The graduate has the ability to think critically on his own, solve problems, manage resources and time, describe the general specialization and its concepts in a scientific and engineering way, and make the appropriate changes for that.

A2- The ability to perform engineering analysis and scientific thinking by applying laws in mathematics and engineering and adhering to guidelines and instructions for any activity in the organizational and administrative framework in implementing a project or confronting an engineering problem, solving and evaluating it, submitting a proposal or plan, reformulating it, translating it, or interpreting it.

A3- The student must be able to speak and write in an effective scientific and engineering style in Arabic and English.

A4- Adherence to the ethics of practicing the profession and the ability to demonstrate high professional competence, in addition to commitment to personal appearance and behavior.

A5- To be familiar with international civil engineering standards, estimate market needs, apply quality management concepts in engineering work, and acquire skills in information technology.

A6- To be interested in protecting the environment from pollution from factory and industrial wastes and others.

B - The program's skill objectives

1 - The ability to apply civil engineering techniques while taking into account industrial and commercial constraints.

2 - Analyzing engineering problems, arriving at a solution, and being able to suggest appropriate alternatives.

3 - Scientific investigation and evaluation.

4 - Constructive engineering discussions and expressing opinions.

Teaching and learning strategies: Lectures, identifying and diagnosing problems through explanations, exercises, and classroom exercises, and practical applications make students aware of how to benefit from the specifications used and understand their application.

Evaluation methods:

1. Giving homework
2. Daily exams
3. Ask some questions

1. **Program Vision**
The Civil Technologies Department is moving towards expanding the base of technical education and its modern applications and building a close relationship with various sectors of society in the field of exchanging scientific and practical experiences and activating the role of scientific research in various areas of development.

2. **Program Mission**
The department adopts the dissemination of scientific and technical knowledge in the field of civil engineering sciences to graduate national cadres at a level of education that will be able to absorb modern technologies and support the process of scientific and technical development to keep pace with global developments and to fulfill the following: Using computer and Internet technologies in education and training. Opening up to society in the field of the construction industry and activating the relationship with the private sector in the field of engineering consultation, training and technical qualification.

Develop future plans to develop educational and training curricula and graduate technical cadres in the field of building and construction. Focus on scientific research between academics in the department and industrial staff to solve the problems of the construction industry and develop its production.

3. Program Objectives

Graduating qualified technical personnel to carry out various civil works sections, conduct laboratory and field tests, implement maps and surveys, and calculate quantities and dimensions of civil works projects.

Completing the largest number of applied scientific research in cooperation with relevant ministries and departments.

Ensuring continuous cooperation between the department and development sectors in the engineering and consulting fields.

4. Program Accreditation

Does the program have program accreditation? And from which agency? NO

5. Other external influences

Is there a sponsor for the program? NO

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				

College Requirements				
Department Requirements				
Summer Training				
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First	TC	Civil Technologies	**18**	**18**
			12	**21**

8. Expected learning outcomes of the program

Knowledge	
1. The graduate has the ability to think critically on his own 2. The ability to perform engineering analysis and scientific thinking by applying the laws of mathematics and engineering. 3. The student must be able to speak and write in an effective scientific and engineering style in Arabic and English. 4. Adherence to the ethics of practicing the profession and the ability to demonstrate high professional competence, in addition to commitment to	1. Solving problems, managing resources and time, describing the general specialty and its concepts in a scientific and engineering manner, and making appropriate changes for that. 2. Commitment to the guidelines and instructions for any activity in the regulatory and administrative framework in implementing a project or confronting an engineering problem, solving it, evaluating it, submitting a proposal or plan, reformulating it, translating it, or interpreting it. 3. The ability to demonstrate high professional competence in addition to commitment to personal appearance and behavior. 4. Estimating market needs, applying quality management concepts in engineering work, and acquiring skills in information technology. 5. To be interested in protecting the environment from pollution from factory and industrial wastes and others.

personal appearance and behavior. 5. To be familiar with international civil engineering standards	
Skills	
1. Ability to apply civil engineering techniques. 2. Analysis of engineering problems.	1. Ability to apply civil engineering techniques taking into account industrial and commercial constraints. 2. Analyzing engineering problems, arriving at a solution, and being able to suggest appropriate alternatives.
3. Scientific investigation and evaluation.	3. Constructive engineering discussions and expressing opinions.
1. Presenting the engineering or design problem and asking to think about possible solutions or developments. 2. Developing Internet research skills to expand the cognitive horizon.	1. Encouraging the development of students' engineering thinking in memorizing and guessing and motivating them towards critical thinking and thinking at the stage before remembering. 2. Developing Internet research skills to expand the cognitive horizon. 3. Bringing out the creative ideas of some gifted students.
3. Using brainstorming to bring out creative ideas for some gifted students.	

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in implementing the program in general.

There are many teaching and learning methods used in the building and construction branch, and the most important of these methods are: (theoretical and practical lecture, discussion and dialogue, field visits, seminars on specific

topics, theoretical and practical student research, and office activities), which helps students reach the following results: -

1- The engineering ability to distinguish between correct information and incorrect information.

2- Ease of scientific formulation and ease of correction.

3- The ability to memorize and guess.

4- The ability to link engineering concepts, principles and instructions.

5- The ability to recall, link, and interpret.

Evaluation methods

- Engineering projects and seminars (seminars).
- Scientific discussion, oral dialogue, and semester and final exams.
- Homework assignments.
- Practical activities and case studies.
- Writing and submitting reports and taking notes on the engineering experiences gained during field visits.

Achievement tests to determine the level of the learner's acquisition of information and skills in a previously learned subject, through his answers to questions and paragraphs that represent the content of the subject.

10. Evaluation methods

The branch has relied on clear, high-quality assessment methods and tools for student learning in order to maintain the quality of the graduate and the academic reputation of the branch and department. This is embodied in the university's regulations and the requirements for continuous evaluation of students, provided that there are several types of evaluation methods in order to ensure the quality The quality of the graduate, which constitutes the final

outcome of the educational process, and the most important methods of evaluation are:

A – Objective tests to measure knowledge of engineering facts, their comprehension, application of scientific knowledge in new situations, and measurement of memory through the following: –

- True and false questions.
- Multiple choice questions.
- Interview questions (matching items).
- Completion questions.

B–Engineering tests related to the following matters:–

- Remember facts and figures.
- Understanding scientific material and engineering principles.
- The ability to recall, link and interpret.
- Apply knowledge in a simple way to interpret data, diagnose and solve problems.

It is done through the following:–

- Communication test/open questions:–
- Questions that have a specific answer.
- Questions that do not have a specific answer. Which is based on motivating the student to:
- Having the ability to answer freely.
- Possessing the skill in organization.
- Possessing the skill in arranging ideas.

Avoid cheating and confront it.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	1	2			√	
Assistant Professor	1				√	
Teacher	1	3			√	
assistant teacher	3	3			√	

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

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

Central admission for preparatory studies, vocational schools, and parallel admission

13. The most important sources of information about the program

- The guide for student affairs procedures and admission controls and conditions
- Orders issued by the Ministry and the University
- Guide to administering university examinations for preliminary studies

14. Program Development Plan

The focus in the Department of Civil Technologies / Building and Construction Branch in general is on continuous development. The department always seeks to develop the scientific and administrative process and overcome all the difficulties and obstacles that hinder the educational program by developing human resources to develop personality.

The following procedures explain the steps implemented or in the process of implementation in this area:

1. Continuous development of faculty members through training programs and workshops inside and outside the department, university, and country.

2. Increasing extracurricular activities, such as holding conferences, scientific seminars, and personal and sports creativity, locally, regionally, and internationally.

3. Encouraging faculty members to obtain the highest academic and administrative ranks.

4. Providing modern scientific sources and books for the department's library to keep pace with the rapid progress in engineering sciences.

5. Providing specialized software in mechanical engineering and the necessary computers for this, along with Internet lines, for all teachers.

Program Skills Outline

Required program Learning outcomes														
Ethics				Skills				Knowledge				Basic or optional	Course Name	Course Code	Year/Level
C4	C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1				
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Construction materials	**TC1**	**First**
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Concrete materials	**TC2**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Surveying (1)	**TC3**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Engineering drawing	**TC4**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Engineering mechanics	**TC5**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	mathematics	**TC6**	
✓	✓			✓	✓	✓		✓	✓			**Help**	computer applications	**TC7**	
✓	✓			✓	✓	✓		✓	✓			**Help**	Technical English	**TC8**	
✓	✓			✓	✓	✓		✓	✓			**Help**	English	**TC9**	
✓	✓			✓	✓	✓		✓	✓			**General**	Human rights and democracy	**TC10**	
✓	✓			✓	✓	✓		✓	✓			**Help**	Factories	**TC11**	
												Help	Arabic	**TC12**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Concrete technology	**TC20**	**Second**
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Soil mechanics	**TC21**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Surveying (2)	**TC22**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Civil drawing	**TC23**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Quantity surveying	**TC24**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Buildings and factory construction	**TC25**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Construction machines	**TC26**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	Computer applications	**TC27**	
✓	✓			✓	✓	✓		✓	✓			**Help**	English	**TC28**	
✓	✓			✓	✓	✓		✓	✓			**Help**	Baath Party crimes in Iraq	**TC29**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	construction techniques	**TC30**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	The project	**TC31**	

✓	✓			✓	✓	✓		✓	✓			**Help**	Computer2 application	**TC32**	

Course Description Form

1. Course Name:
Construction techniques
2. Course Code:
TC30
3. Semester / Year:
year
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total) 4
120 hours / 4 Units
7. Course administrator's name (mention all, if more than one name)
Name: zaineb Jalal Ruda Email: zainab.ridha.ikr@atu.edu.iq
8. Course Objectives

Course Objectives	•Providing the student with manual skills.... •qualifying him to carry out construction works. And constructi works •to be qualified upon graduation to efficiently supervise work
Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the m important of these methods are:- (theoretical and practical lectu discussion and dialogue, field visits, discussion circles on speci topics, theoretical and practical student research, office activities)

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
the first	4	Cognitive outcomes	Foundation planni using surveyi equipment.	lecture	questions and answers

the second	4	Cognitive outcomes	Excavations, a supporting the sides the excavation.	Discussion	Asking questions
the third	4	Cognitive outcomes	Making a strengthening foundation for a wall support.	lecture	Listening and asking questions
the fourth	4	Cognitive and emotional outcomes	Showing a scientific fi about pile works, typ how they work, and machines used for that	Dialogue a critic m	Case study
Fifth	4	Cognitive and skills	Brick construction wo English bondi German bonding, otl types of bonding.	discussion	Case studies
sixth	4	Cognitive and skills	Block constructi (block, thermostone).	Discussion and mini lesso	Mini lesson
Seventh	4	My knowledge my skills	Wooden template wo training on making wooden template for column, bridge, sta and roofs.	Role playir	discussion
VIII	4	Rate me	Pouring regular a reinforced concrete a using manual mixing, well as training automatic mixing.	discussion	Case study
And the ninth	4	Cognitive	A scientific visit to site of making a wooc mold and pouri concrete.	a lecture	Listening and speaking
The tenth	4	My knowledge and skills	Reinforcing wor rebar, the correct way use it, maki reinforcement models a column, roof, a bridge.	discussion	Questions
eleventh	4	My knowledge and skills	Iron works, i structural sections a aluminum sections, a when they are	Lecture an critic m	Asking questions

			available, a scienti film is shown for that.		
twelve	4	My knowledge and skills	Application with cash and sticker.	Lecture an critic m	to listen
thirteenth	4	And sentimen	Moisture-preventing works, training on use of some moistu repellent materials a how to use th optimally, such asphalt felt, bitumin materials, according what is available.	Discuss an liste	Asking questions
fourteenth	4	My Skill	Showing a scientific fi about thermal insulati materials: their typ how to use them, a their benefits.	Dialogue a discu ion	Work groups
Fifteenth	4	Cognitiv	Whitewashing wor whitewashing of a w using plaster.	discussion	Work groups
sixteen	4	Cognitiv	Ficus and prose works	Discuss an liste	Mini lesson
And the seventeth	4	My knowledg and skills	1. Using cement morta	Lecture an critic m	Practical exercise
eighteen	4	My knowledg and skills	Using cement mortar Noura.	Discuss an liste	And work groups
nineteenth	4	Cognitiv	Packaging works with Furfouri Kashi.	discussion	Asking questions
The twentieth	4	My knowledg and skills	Wall covering wor wall covering usi solutions.	Discussion and critic m	Asking questions
And the twent first	4	Cognitiv and emotiona	Secondary ceilin (Moroccan), making model of a Moroc ceiling, training on h to install them.	Discussion and critic m	Case study
twenty two	4	Cognitiv	Dyeing work (training how to use it and how	discussion	Case study

			adapt each type to dyed surface).		
twenty third	4	Cognitiv	Sanitary works: Traini the student on how to sewage pipes, clear wa pipes, and the locatio of sinks, bathtubs, toile etc.	discussion	Asking questions
twenty fourth	4	Discussio and criticism	Case study	Discussion and critic m	Case study
25th	4	Discussio and criticism	Asking questions	Discussion and critic m	Asking questions
twenty-sixth	4	discussio	Asking questions	discussion	Asking questions
27th	4	Cognitiv outcomes	Foundation planni using surveyi equipment.	lecture	Asking questions
Twenty-eightl	4	Cognitiv outcomes	Excavations, a supporting the sides the excavation.	Discussion	Case study
Twenty nine a Thirty	4	Cognitiv outcomes	Making a strengthening foundation for a wall support.	lecture	Asking questions

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)	
Main references (sources)	Book of Plane Surveying and Topograp / Fouad Malallah Fandakli 2. The Book of Surveying / Labib Sallou
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

13.Course Name:

Surveying 2
14.Course Code:
TC22
15.Semester / Year:
Year
16.Description Preparation Date:
2025
17.Available Attendance Forms:
In-person
18.Number of Credit (Total) / Number of Units (Total)
90 Hours - 3 Units
19.Course administrator's name (mention all, if more than one name)
Name: Raeda K. Ali Email: raeda.k.ali@atu.edu.iq
20.Course Objectives

Course Objectives	• to prepare technician specialist that they can carry out the basic of planning and implementation of major engineering projects and small as they enter the large and small businesses. • The graduate person can survey the land to determine the topography and elevations in order to prepare the specific map for projects then conduct the soil cut and fill. • Identify ways trails of all kinds and to prepare profiles and maps thus use the software and modern application in their respective fields.

21.Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most import of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	3	Cognitive outcomes	To identify device	lecture	questions a answers

			theodolite / pa uses, types, set the machine, re the horizontal a vertical trends different species		
2nd	3	Cognitive outcomes	Check and adj the Al-theodol device for all kir of vertical a horizontal te and then find fixed device	Discussion	Asking questions
3rd	3	Cognitive outcomes	Methods measuring horizontal ang Altheodoleight device	lecture	Listening a asking questions
4th	3	Cognitive a emotional outcomes	Ribbing, types polygons, purpose, its uses	Dialogue a criticism	Case study
5th	3	Cognitive a skills	Measuring inter horizontal ang closed polyg and corrected	discussion	Case studies
6th	3	Cognitive a skills	Methods measuring horizontal distar to the sides of polygon.	Discussion and m lesson	Mini lesson
7th	3	My knowled my skills	Drawing clos and open polygo	Role playing	discussion
8th	3	Cognitive a skills	Survey area a raise the truss monuments to Theodolite a tape	discussion	Case study
9th	3	Cognitive	Practical Exerc of the horizon component a vertical component directions	a lecture	Listening a speaking

10th	3	My knowled and skills	Practical Exerc of the horizon and verti coordinates open polygon.	discussion	Questions
11th	3	My knowled and skills	Measure vertical angles Theodolite different ways	Lecture a criticism	Asking questions
12th	3	My knowled and skills	Exercise finding height building cou reach the base	Lecture a criticism	to listen
13th	3	And sentimental	Exercise finding height building is possible to rea the base	Discuss and listen	Asking questions
14th	3	My Skills	Exercise finding height building measuring th angles high a low	Dialogue a discussion	Work groups
15th	3	Cognitive	How curv horizontal laye tape only	discussion	Work groups
16th	3	Cognitive	Curves / and kin	Discuss and listen	Mini lesson
17th	3	My knowled and skills	Horizontal curv (curved eleme of ring Simp and the equatio used in the desi of the curved ri simple	Lecture a criticism	Practical exercise
18th	3	My knowled and skills	Determine how horizontal curve tangent meth built on colum ways (Baker wa - built on colum tendon w (offsett) -	Discuss and listen	And work groups

			division of tendons		
19th	3	Cognitive	Determine how curves using t devices Theodol	discussion	Asking questions
20th	3	My knowled and skills	Chart of horizontal curve	Discussion a criticism	Asking questions
21st	3	Cognitive a emotional	All type of curve components calculate length of vertical curve	Discussion a criticism	Case study
22nd	3	Cognitive	Accounts rela to the verti curve	discussion	Case study
23rd+	3	Cognitive	Triangulation, purposes, u choose triangulation points, triangulation networks	discussion	Asking questions
24th	3	Discussion a criticism	Measuring baseline triangulation a the work of fortifications the measuring ta	Discussion a criticism	Case study
25th	3	Discussion a criticism	Measure horizontal ang of triangulation network and wo accounts a fortifications necessary.	Discussion a criticism	Asking questions
26th	3	discussion	Al-takeomitrah space, takeomitr types devices.	discussion	Asking questions
27th	3	Cognitive outcomes	Identification modern electro measurement devices and how	lecture	Asking questions

			use them measure horizontal a vertical distance		
28th	3	Cognitive outcomes	Year project on construction of road or draina channel with d needed complete project w horizontal a vertical curv account	Discussion	Case study
29th+30th	3	Cognitive outcomes	Iterance to station device u overall stati device to meas lengths of trav and internal ang and coordinates	lecture	Asking questions

23.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	
24.Learning and Teaching Resources	
Required textbooks (curricular books, any)	
Main references (sources)	1) Book of Plane Surveying and Topography/ Fouad Malallah Fandakli 2) Detailed Surveying and topography / Mahmoud Hosni Abdel Rahim 3) 2. The Book of Surveying / Labib Nasief Sallou,1985 4) Construction Survey/William Irvine1976
Recommended books and references (scientific journals, reports...)	المسح الهندسي والكادسترائي / زياد عبد الجبار البكر, 1989
Electronic References, Websites	https://civiltoday.com/surveying/13-definition-and-importance-of-surveying

Course Description Form

25.Course Name:	
Civil Drawing	
26.Course Code:	
TC23	
27.Semester / Year:	
Annual System	
28.Description Preparation Date:	
2025	
29.Available Attendance Forms:	
In-person	
30.Number of Credit Hours (Total) / Number of Units (Total)	
180 Hours - 6 Units	
31.Course administrator's name (mention all, if more than one name)	
Name: Ali Hadi Email: inkr.ali@atu.edu.iq	
32.Course Objectives	
Course Objectiv	Teaching students the construction details, as well as the details of all construction works, so that they are qualified to understand the executive plans and transfer their information to the construction site and the staff to implement them. Students also learn the principles used in preparing sets of executive plans.
33.Teaching and Learning Strategies	
Strategy	Lectures: identifying and diagnosing problems through explanations, exercises, classroom activities, and practical applications, so that students understand how to benefit from the processes used and understand their application. 1. Scientific lectures. 2. Discussions. 3. Creating engineering drawings. • Learn about engineering planning. • Learn how to read engineering plans. • Identify the architectural and construction terms used in plans. • Drawing construction details.

	• Engage in drawing steel structures.

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	Cognitive and skill-based outcomes	Introduction to structural drawing, architectural and terminological symbols, lines in plans, drawing models for building and construction materials, drawing scale, executive plans, and types of brick and block construction.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
2	6	Cognitive and skill-based outcomes	Drawing the horizontal plan of a residential house or small building, the plan of the first floor, and determining the longitudinal and cross-sections and the facades.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
3	6	Cognitive and skill-based outcomes	Drawing longitudinal and cross-sections, as well as detailed sections of the finishing layers for floors, ceilings, and surfacing.	Lecture method, by using the whiteboard and the projector, and then practical application	Homework

				using computers.	
4	6	Cognitive and skill-based outcomes	Introduction to sanitary drawing, structures, and furniture for water and sanitary installation, followed by creating the network of water and sanitary facilities based on the existing horizontal plans.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
5	6	Cognitive and skill-based outcomes	Drawing out the structural details of the inspection basins and connecting them to the sanitary facility network.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
6	6	Cognitive and skill-based outcomes	Drawing the structural details of the house plan's septic tanks and storage (drains).	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
7	6	Cognitive and skill-based outcomes	Introduction to concrete and construction principles, concrete bearing capacity with various loads, the necessary types of reinforcement steel, and drawing	Lecture method, by using the whiteboard and the projector, and then practical application	Quiz

			symbols used in plans and construction details.	using computers.	
8	6	Cognitive and skill-based outcomes	Concrete slabs, their types, the transmission of loads through them, and the necessary reinforcement, along with drawing the structural details of one-way solid slabs.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
9	6	Cognitive and skill-based outcomes	Drawing the structural details of two-way solid slabs.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
10	6	Cognitive and skill-based outcomes	Drawing the structural details of one- and two-way polygonal slabs.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
11	6	Cognitive and skill-based outcomes	Introduction/Types of concrete joists and drawing the structural details of simply supported joists with sections.	Lecture method, by using the whiteboard and the projector, and then practical	Homework

				application using computers.	
12	6	Cognitive and skill-based outcomes	Drawing structural details for continuous joists and sections.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
13	6	Cognitive and skill-based outcomes	Drawing the structural details of the monofilament joists along with their sections.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
14	6	Cognitive and skill-based outcomes	An introduction with a drawing of prestressed precast joists' structural details.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
15	6	Cognitive and skill-based outcomes	Drawing out a horizontal plan (key) for the joists of a structural building and establishing tables and details of the joists.	Lecture method, by using the whiteboard and the projector, and then practical	Homework

				application using computers.	
16	6	Cognitive and skill-based outcomes	Drawing the structural details of the different types of concrete columns, drawing the longitudinal and cross-sections, and showing the columns' reinforcement.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
17	6	Cognitive and skill-based outcomes	Drawing structural details and vertical sections to illustrate the bonding of reinforcing steel for columns of successive floors.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
18	6	Cognitive and skill-based outcomes	Introduction to foundations, their types and principles of operation, and drawing the structural details of the single foundation, combined foundation, and wall foundations.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
19	6	Cognitive and skill-based outcomes	Drawing the structural details of continuous foundations and mat foundations.	Lecture method, by using the whiteboard and the projector, and then practical	Homework

				application using computers.	
20	6	Cognitive and skill-based outcomes	Drawing the structural details of the foundations of the pillars and their types with the cap.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
21	6	Cognitive and skill-based outcomes	Identifying concrete stairs and their types: a straight staircase, a half-straight staircase, a spiral staircase, and drawing their structural details.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
22	6	Cognitive and skill-based outcomes	Drawing structural details of joints in buildings, expansion joints, structural joints.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
23	6	Cognitive and skill-based outcomes	Drawing the structural details of the reinforced walls of elevators and basement walls.	Lecture method, by using the whiteboard and the projector, and then practical	Homework

				application using computers.	
24	6	Cognitive and skill-based outcomes	Introduction to manufactured and prefabricated construction, as well as drawing the structural details for wall connections with prefabricated ceilings.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
25	6	Cognitive and skill-based outcomes	Introduction to steel structures, their sections, tables, and how to obtain section specifications and details.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework
26	6	Cognitive and skill-based outcomes	Drawing the structural details for the connection of steel parts according to their load bearing.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
27	6	Cognitive and skill-based outcomes	Bonding of steel foundations and bases, bonding of steel columns, bonding of joists to each other.	Lecture method, by using the whiteboard and the projector, and then practical	Homework

				application using computers.	
28	6	Cognitive and skill-based outcomes	Details of the gable steel drawing and its side connections.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Quiz
29 & 30	6	Cognitive and skill-based outcomes	Using the computer and its applications in the structural drawing of reinforced concrete structures.	Lecture method, by using the whiteboard and the projector, and then practical application using computers.	Homework

35.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.	
36.Learning and Teaching Resources	
Required textbooks (curricular books any)	Curricular source
Main references (sources)	Civil technology/structural drawing/general administration for curriculum design and implementation.
Recommended books and references (scientific journals, reports...)	Architectural technology book, working drawings 1
Electronic References, Websites	

Course Description Form

37.Course Name: Construction Equipment
38.Course Code: TC26
39.Semester / Year: year
40.Description Preparation Date: 2025
41.Available Attendance Forms: Presence
42.Number of Credit Hours (Total) / Number of Units (Total) 2
43.Course administrator's name (mention all, if more than one name)
Name: Mohammed Ali Azeez Email: mohammed.azeez.ikr20@atu.edu.iq
44.Course Objectives

Course Objectives	• to determine t productivity of the machi and how they operate a supervise the completion the work well
45.Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and t most important of these methods are:- (theoretical a practical lecture, discussion and dialogue, field vis discussion circles on specific topics, theoretical and practi student research, office activities)

46. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
the first	2	Cognitive outcomes	Construction equipment, t importance of t machines, a ways to get the and the pros a	lecture	questions a answe s

			cons own or r the machin with presentation o scientific film.		
the second	2	Cognitive outcomes	Cost and exper of owning machines (wr off cos investment maintenance a repairs).	Discussion	Asking ques ions
the third	2	Cognitive outcomes	Supplement cost and exper of owning machines, operating co (fuel costs, costs, expl Math questi about integrated account costs).	lecture	Listening a asking questi ns
the fourth	2	Cognitive a emotional outcomes	Special machines, standard machines, a the trade-o between th with presentation o scientific film.	Dialogue a criticism	Case study
Fifth	2	Cognitive a skills	Engineering foundations Engineering Works machi include (resistance movement a the effect inclination).	discussion	Case studies
sixth	2	Cognitive a skills	Supplement engineering	Discussion a mini lesso	Mini lesson

			foundations engineering works machi (the impact of rise, the Bu and contracti of the soil account sizes)		
Seventh	2	My knowled my skills	Almqlah (do include: Description the machi types, productivity calculation) w the presentati of a scienti film.	Role playing	Asking ques ions
VIII	2	Rate me	Loading sho (Alhvl) inclu (types, includi teams, productivity a expense, All cycle wo coordination work) with presentation two fil scientists.	discussion	Listening a asking questi ns
ninth	2	Cognitive	A visit to the scientific work sites that is available by different machines. IX	a lecture	Listening a speaki ng
The tenth	2	My knowled and skills	Drilling machines, overall drilling rig w facial disp scientific film.	discussion	Questions

eleventh	2	My knowled and skills	Drilling machines (background Shovel, Sho Naaourah, Sco shellfish) w the presentati of a scienti film.	Lecture a criticism	Asking ques ions
twelve	2	My knowled and skills	Machinery a transport un paved and no paved roa trucks, tru classification according multiple facto tippers, productivity account with presentation o scientific film.	Lecture a criticism	to listen
thirteenth	2	And sentimental	Balancing number of du trucks with volume drilling machines, lorri tractors a trailers, truc railway.	discussion	Asking ques ions
fourteenth	2	My Skills	Terraced inclu (types a benefits w productivity account) with presentation o scientific film.	Discuss and liste	Work groups
Fifteenth	2	Cognitive	Skimmers typ and productiv benefits acco with presentation o scientific film	discussion	Work groups

sixteen	2	Cognitive	Abrasive perfo productive u abrasive sche in productiv account.	Discuss and liste	Mini lesson
And the seventeent	2	My knowlec and skills	A scientific v to the busin sites with presentation o scientific film.	Lecture a criticism	Practical exe cise
eighteen	2	My knowlec and skills	Soil compacti machines inclu important typ where they used with presentation o scientific film.	Discuss and liste	work groups
nineteenth	2	Cognitive	Supplement machines All productivity a expense, oni theory pressure for distribution weights	discussion	Asking ques ions
The twentieth	2	My knowlec and skills	Supplement Alhdl Alhad vibratory machines, productivity account Alhad	Discussion a criticism	Asking ques ions
And the twenty-firs	2	Cognitive a emotional	Transport a refine concr compaction equipment.	Discussion a criticism	Case study
twenty two	2	Cognitive	Accounts rela to the verti curve	discussion	Case study
twenty third	2	Cognitive	Asphalt types a specifications the producti plants.	discussion	Asking ques ions
twenty fourth	2	Discussion a criticism	sphalt specifications	Discussion a criticism	Case study

			mattresses, Alvarchat spe types butterflies w the presentati of a scienti film.		
25th	2	Discussion a criticism	Scientific visit the asph production pla	Discussion a criticism	Asking ques ions
twenty-sixth	2	discussion	Almkhandqat types, producti rates acco with presentation o scientific film.	discussion	Asking ques ions
27th	2	Cognitive outcomes	Tunnels importance, types with presentation o scientific film.	lecture	Asking ques ions
Twenty-eighth	2	Cognitive outcomes	Mechanical r incision tunne ventilation tunnels with presentation o scientific film.	Discussion	Case study
Twenty nine	2	Cognitive outcomes	Conveyer be calculate the c of transport be conveyor be parts	lecture	Asking ques ions
Thirty	2	Cognitive outcomes	Conveyer be calculate the c of transport be conveyor be parts	lecture	Asking ques ions

47.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as d ily preparation, daily oral, monthly, or written exams, reports .... etc	
48.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

49.Course Name: **Concrete Technology**
50.Course Code: TC21
51.Semester / Year: Year
52.Description Preparation Date:2025
53.Available Attendance Forms: Presence
54.Number of Credit Hours (Total) / Number of Units (Total) 4
55.Course administrator's name (mention all, if more than one name)
Name: Saif Mazin Aziz Email: saif.aziz.ikr@atu.edu.iq
56.Course Objectives

Course Objectives	The aim is mainly on how to understand concr performance in ordinary construction practice. T understanding is based on knowledge of constituents, and their physical and chemi interactions in different environments.

57.Teaching and Learning Strategies

Strategy	There are many teaching and learning methods used, and the most import of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	4	Cognitive outcomes	General principles for concrete (definition, composition, its own terminology, characteristics) Normal, reinforced, cast place, pre-ca pre-mixed, p tensioned	lecture	questions a answers
2nd	4	Cognitive outcomes	Concrete mixing production, mixing typ mixing time	Discussion	Asking questions
3rd	4	Cognitive outcomes	Fresh concrete, workability, consistency, fresh concrete tests, Flowability, penetration, slump, compaction factor test, VB test, fact affecting concr workability	lecture	Listening a asking questions
4th	4	Cognitive a emotional outcomes	Fresh concrete properties Bleeding, segregation, plastic shrinka fresh unit weigh	Dialogue a criticism	Case study
5th	4	Cognitive a skills	Air voids (effect measurement), unit weight, yie cement content fresh concre	discussion	Case studies

			density + absol volume formula		
6th	4	Cognitive a skills	General principles for concrete (definition, composition, its own terminology, characteristics) Normal, reinforced, cast place, pre-ca pre-mixed, p tensioned	Discussion and m lesson	Mini lesson
7th	4	My knowled my skills	Concrete mixing production, mixing typ mixing time	Role playing	discussion
8th	4	Rate	Fresh concrete, workability, consistency, fresh concrete tests, Flowability, penetration, slump, compaction factor test, VB test, fact affecting concr workability	discussion	Case study
9th	4	Cognitive	Normal Concr casting, transporting, compaction	a lecture	Listening a speaking
10th	4	My knowlec and skills	Normal Concrete curing, hot weather concreting, Cold weat concreting	discussion	Questions

11th	4	My knowlec and skills	Concrete pumping, pumped concrete properties, Pumping tools	Lecture a criticism	Asking questions
12th	4	My knowlec and skills	Pre-mixed concrete, advantages, production, mixing trucks	Lecture a criticism	to listen
13th	4	And sentimental	Hardened concr strength, natu types	Discuss and listen	Asking questions
14th	4	My Skills	Hardened concr tests, compressi splitting, flexura	Dialogue a discussion	Work groups
15th	4	Cognitive	Factors influenced concrete strength, Factors influenc concrete streng results	discussion	Work groups
16th	4	Cognitive	Concrete shrinkage, (dryi deferential, carbonation)	Discuss and listen	Mini lesson
17th	4	My knowlec and skills	Concrete additives, (advantages, uses, constituents, Precautions)	Lecture a criticism	Practical exercise
18th	4	My knowlec and skills	Types of Concrete additives (retarders, accelerators, air entraining, silica fume, Water proofi weight loosing	Discuss and listen	And work groups

19th	4	Cognitive	Concrete mix design ACI method	discussion	Asking questions
20th	4	My knowled and skills	Concrete mix design BS method	Discussion a criticism	Asking questions
21st	4	Cognitive a emotional	Concrete mix design examples	Discussion a criticism	Case study
22nd	4	Cognitive	Mix design Examples Concrete associated w additives	discussion	Case study
23rd+	4	Cognitive	Nondestructive testing, (radiation, hardness, pulse waves, Resonance frequency)	discussion	Asking questions
24th	4	Discussion a criticism	Using fibers in concrete, Plastic, glass, ste wood	Discussion a criticism	Case study
25th	4	Discussion a criticism	Using polymers in concrete, Polymer concret	Discussion a criticism	Asking questions
26th	4	discussion	Special types of concrete, (light weight, heavy weight, under water concreting, Pre-cast concret	discussion	Asking questions
27th	4	Cognitive outcomes	Special types of concrete, (high performance, high strength, self-compacting,	lecture	Asking questions

			Reactive powd concrete, roll compacted concrete		
28th	4	Cognitive outcomes	Concrete repairing & rehabilitation, Using epo carbon fiber	Discussion	Case study
29th+30th	4	Cognitive outcomes	Concrete mix design ACI method	lecture	Asking questions

59.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	
60.Learning and Teaching Resources	
Required textbooks (curricular books, any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

1. Course Name**: Technology Of Construction**

2. Course Code: TC20
3. Semester / Year: Year
4. Description Preparation Date:
5. Available Attendance Forms: Presence
6. Number of Credit Hours (Total) / Number of Units (Total) 4
7. Course administrator's name (mention all, if more than one name)
Name: dr. Isam Mohamad Ali Email: inkr.asm@atu.edu.iq
8. Course Objectives

Course Objectives	The aim is mainly on how to understand concr performance in ordinary construction practice. T understanding is based on knowledge of constituents, and their physical and chemi interactions in different environments.
9. Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most import of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	4	Cognitive outcomes	Foundations planning, usi surveying equipment.	lecture	questions a answers
2nd	4	Cognitive outcomes	Excavations, Supported Excavation side	Discussion	Asking questions
3rd	4	Cognitive outcomes	Reinforcing wo of the foundati	lecture	Listening a asking questions

			of a wall or a pi Making and		
4th	4	Cognitive a emotional outcomes	Showing scientific mo for the piles wor types and how th work and machines used f	Dialogue a criticism	Case study
5th	4	Cognitive a skills	Brick wo English Bo Flemish Bond other types Bonds.	discussion	Case studies
6th	4	Cognitive a skills	Building w blocks (bloc thermostone).	Discussion and m lesson	Mini lesson
7th	4	My knowled my skills	Shuttering Wor training on work of Shutteri for column , be , Stairs a ceilings.	Role playing	discussion
8th & 9th	4	Rate	Foundations planning, usi surveying equipment.	discussion	Case study
10th	4	My knowled and skills	Casting of norr and reinforc concrete using hand mixing , well as training mechanical mixture.	discussion	Questions
11th	4	My knowled and skills	Scientific visit the work s Shuttering a casting concrete	Lecture a criticism	Asking questions
12th & 13th	4	My knowled and skills	Reinforcement work, st reinforcement , correct way to u it, the work reinforcement the column a	Lecture a criticism	Practical exercise

			ceiling and be models.		
14th	4	My Skills	Hardened concr tests, compressi splitting, flexura	Dialogue a discussion	Work groups
15th	4	Cognitive	Factors influenced concrete strength, Factors influenc concrete streng results	discussion	Work groups
16th	4	Cognitive	Concrete shrinkage, (dryi deferential, carbonation)	Discuss and listen	Mini lesson
17th	4	My knowledge and skills	Concrete additives, (advantages, uses, constituents, Precautions)	Lecture a criticism	Practical exercise
18th	4	My knowledge and skills	Types of Concrete additives (retarders, accelerators, air entraining, silica fume, Water proofi weight loosing	Discuss and listen	work groups
19th	4	Cognitive	Concrete mix design ACI method	discussion	Asking questions
20th	4	My knowledge and skills	Concrete mix design BS method	Discussion a criticism	Asking questions
21st	4	Cognitive a emotional	Concrete mix design	Discussion a criticism	Case study

			examples		
22nd	4	Cognitive	Mix design Examples Concrete associated w additives	discussion	Case study
23rd+	4	Cognitive	Nondestructive testing, (radiation, hardness, pulse waves, Resonance frequency)	discussion	Asking questions
24th	4	Discussion and criticisr	Using fibers in concrete, Plastic, glass, ste wood	Discussion a criticism	Case study
25th	4	Discussion and criticisr	Using polymers in concrete, Polymer concret	Discussion a criticism	Asking questions
26th	4	discussion	Special types of concrete, (light weight, heavy weight, under water concreting, Pre-cast concret	discussion	Asking questions
27th	4	Cognitive outcomes	Special types of concrete, (high performance, high strength, self-compacting, Reactive pow concrete, roll compacted concrete	lecture	Asking questions
28th	4	Cognitive outcomes	Concrete repairing & rehabilitation, Using epo carbon fiber	Discussion	Case study

29th+30th	4	Cognitive outcomes	Concrete mix design ACI method	lecture	Asking questions

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, any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

1. Course Name:
Engineering Mechanics
2. Course Code:
TC5
3. Semester / Year:
Year
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours/ 3units
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Ali Azeez Email: mohammed.azeez.ikr20@atu.edu.iq
8. Course Objectives

Course Objectives	**General objective**: teaching students analyze the forces and loads hanging over bodies and extract the stresses and strain as a result of these forces and their relationship to the constituent materials of these bodies. **Specific objective**: analysis of structures and find the forces and stresses in its parts as a result of external loads and its relation to the dimensions of the various parts in engineering structures to withstand the stresses inflicted by safely and economy
9. Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most important of these methods are:- (theoretical and practical lecture, discussion and dialogue, field visits, discussion circles on specific topics, theoretical and practical student research, office activities)

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1st	3	Cognitive outcomes	Definition Mechanics General revi for Physi Fundamentals Trigonometry Scalar and Vec quantities.	lecture	questions a answers
2nd	3	Cognitive outcomes	Resolution a Composition Forces , Trian forces low a Forces Polygon	Discussion	Asking questions
3rd	3	Cognitive outcomes	Moment of Forc	lecture	Listening a asking questions
4th	3	Cognitive a emotional outcomes	Couples. The	Dialogue a criticism	Case study
5th	3	Cognitive a skills	Resultant of Concurrent and non-Concurrent Coplanar fo system.	discussion	Case studies
6th	3	Cognitive a skills	Distributed Loa	Discussion and m lesson	Mini lesson
7th	3	My knowled my skills	Equilibrium , F Body Diagr (F.B.D) Equilibrium Equations Equilibrium concurrent force non –concurr forces a parallel forces.	Role playing	discussion
8th & 9th	3	Rate	Definition Mechanics General revi for Physi Fundamentals Trigonometry	discussion	Case study

			Scalar and Vec quantities.		
10th	3	My knowledg and skills	Resolution a Composition Forces , Trian forces low a Forces Polygon	discussion	Questions
11th	3	My knowlec and skills	Types of Bea and Supports Equilibrium Beams	Lecture a criticism	Asking questions
12th & 13th	3	My knowlec and skills	Trusses , Analy of Trusses : Joi and Sectic Methods	Lecture a criticism	Practical exercise
14th	3	My Skills	Friction , T nature of frictio Theory of fricti , friction lov Types of frictio Applications.	Dialogue a discussion	Work groups
15th	3	Cognitive	Center of grav and centroids simple a Composite area Applications.	discussion	Work groups
16th	3	Cognitive	Applications. Moments Inertia (Simp Composite area	Discuss and listen	Mini lesson
17th	3	My knowledge and skills	Strength Materials Fundamental concept Definition Stress , Types Stress , Factor Safety.	Lecture a criticism	Practical exercise

18th	3	My knowledge and skills	Applications Stress Subject.	Discuss and listen	work groups
19th	3	Cognitive	Strain , Hoo Low, Stre Strain relationship stress-strain diagram .	discussion	Asking questions
20th	3	My knowledge and skills	Lateral Strain Poisson's Ratio Applications Strain and stress	Discussion a criticism	Asking questions
21st	3	Cognitive a emotional	Shear fo Diagram (S.F. and Bendi Moment Diagr (B.M.D) beams , She force and Bendi Moments Equations .	Discussion a criticism	Case study
22nd	3	Cognitive	Types of Bea and Supports Equilibrium Beams	discussion	Case study
23rd+	3	Cognitive	Trusses , Analy of Trusses : Joi and Sectio Methods	discussion	Asking questions
24th	3	Discussion and criticism	Friction , T nature of frictio Theory of fricti , friction lov Types of frictio Applications.	Discussion a criticism	Case study
25th	3	Discussion and criticism	Applications draw the she force and bendi moment equatio .	Discussion a criticism	Asking questions
26th	3	discussion	Bending Stress Beams a Applications.	discussion	Asking questions

27th	3	Cognitive outcomes	Shear Stress Beam a Applications.	lecture	Asking questions
28th	3	Cognitive outcomes	Two-material Composite Beams.	Discussion	Case study
29th+30th	3	Cognitive outcomes	Applications draw the sh force and bendi moment equatic .	lecture	Asking questions

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, any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

1. Course Name: Computer1
2. Course Code: TC7
3. Semester / Year: year
Annual System
4. Description Preparation Date:2025
5. Available Attendance Forms:
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
45h / u
7. Course administrator's name (mention all, if more than one name)
Was an mubdir khilkhal **wasan.khilkhal.ikr15@atu.edu.iq**
8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies

Strategy	Theoretical Lecture Practical lecture Discussion Student research quiz

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1		Introduction To Computer	Concepts of hardware and software with their components, concept of computing, data and information	Lecture and discussion	Quiz
2-3		Computer components	Computer portions hardware parts i/o units, memory types CPU and personal computer	Lecture and discussion	quiz
4-5		Operation system and graphical user interface	Operation system ,basic of common operation system , use of common icons , status bar ,using menu ,open and closing different	Lecture and practical application	Quiz

			windows creating short cut		
6-7		Word Processing	Basic feature ,opening and closing document ,text creation using templates, creat tables utilizing styles and themes spell check and grammar tools	Lecture and practical application	Application
8-9		Spread sheet	Introduction , creating and formatting work sheet ,sorting and filtering data using Formulas and functions creating chart and graphs	Lecture and practical application	Application
10-11		Presentation software	Introduction ,overview of popular tools .creating a new presentation using them and templates , inserting and formatting text,using speaker	Lecture and discussion	Quiz

			notes and timers using advance feature		
12-13		Introduction to internet and web browsers	Computer net work basic :LAN,WAN concept of internet and its application www,web browsing softwares ,url,domain name ,IP address	Lecture and discussion	quiz
14		Communications and emails	Basics of electronic mail ,getting an email account sending and receiving emails	Lecture and Application	Quiz
15		Introduction to cloud commuting and service	Definition and concept of cloud based office suites ,Google Docs,Google sheets ,google drive, google meet	Lecture and discussion	Application or quiz

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 a	
Main references (sources)	

Recommended books and references (scientific journals, reports...)	1-Graham Brown,David Watson Cambridge IGCSE Information and ommunication Technolog”3 edition 2020 2-Al an Evans,Kendall Martian ,Mary Anne Poatsy”Technology In Action Complete”16 edition 2020 3-Ahmed Banafa”Introduction to artificial Intalegence(AI) first addition 2025 4-Microsoft office 2019 step by step 1st edition by Curtis Fry and Joan Lambert 5- " اساسيات الحاسوب"لخضر علي الخضر 2016
Electronic References, Websites	Electronic web

Course Description Form

1. Course Name**:**
Engineering Drawing
2. Course Code: TC4
TC2
3. Semester / Year:
Year
4. Description Preparation Date:
2025
5. Available Attendance Forms: Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
180 Hours / 6 Units
7. Course administrator's name (mention all, if more than one name)

Name: Mohammed Ali Azeez
Email: mohammed.azeez.ikr20@atu.edu.iq

8. Course Objectives

Course Objectives	Subject goal: teach students the principles of the preliminary engineering drawing and computer drawing programs efficiently and rapidly to enable him to express his thoughts through him. The goal of Subject: the rehabilitation of the student to draw and read engineering maps with knowledge of architectural and structural terms that are used in the maps.

9. Teaching and Learning Strategies

Strategy	There are many teaching and learning methods used, and the most import of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	6	Cognitive outcomes	the basics engineering drawing, the to used, to install t painting, types lines, writing t line engineerin	lecture	questions a answers
2nd	6	Cognitive outcomes	engineering operations, halving t straight pie halving the ang linking strai with a circle a linking strai arc, draw equilateral triangle, fi hexagonal,	Discussion	Asking questions

			straight tangent two circles ins and out, tangent of t circles from ho and abroad		
3rd	6	Cognitive outcomes	ellipse, application drawing geomet shapes using ba engineering operations	lecture	Listening a asking questions
4th	6	Cognitive a emotional outcomes	projection principles, how develop dimensional drawing, projection exercises	Dialogue a criticism	Case study
5th	6	Cognitive a skills	draw perspect Alaizumtra	discussion	Case studies
6th	6	Cognitive a skills	projected l perspective drawing Alaizumtra	Discussion and m lesson	Mini lesson
7th	6	My knowled my skills	Seventh section	Role playing	discussion
8th & 9th	6	Rate	AutoCAD applications, definition of relationship between AutoCAD program and use in completion two-dimensiona drawings (2D) a three-dimension (3D) and open new page in program, determine the a of the drawi	discussion	Case study

			(Limits), drawi plate frame a table data, with application writi within spreadsheet Text)		
10th	6	My knowledg and skills	identify the typ of lines and method of acc to and use AutoCAD software putting them multiple lay (Layers) a different col and differ thickness (L weight	discussion	Questions
11th	6	My knowlec and skills	drawing projections three-dimension forms a dimensions them by usi multiple lay (Layers)	Lecture a criticism	Asking questions
12th & 13th	6	My knowlec and skills	drawing projections three-dimension forms a dimensions them by usi multiple lay (Layers)	Lecture a criticism	Practical exercise
14th	6	My Skills	drawing projections three-dimension forms usi different colors different thickn of lines and changing	Dialogue a discussion	Work groups

			characteristics (properties		
15th	6	Cognitive	projected find missing a continue to dr projections	discussion	Work groups
16th	6	Cognitive	put additions fees (Hatch a gradient), and method of addi additional inscriptions on program fr external sources	Discuss and listen	Mini lesson
17th	6	My knowlec and skills	draw the sha holographic manner (Isomet snap)	Lecture a criticism	Practical exercise
18th	6	My knowlec and skills	drawing sectic in the sa manner (Isomet snap)	Discuss and listen	work groups
19th	6	Cognitive	drawing projections three-dimension forms a dimensions them by usi multiple lay (Layers)	discussion	Asking questions
20th	6	My knowlec and skills	drawing projections three-dimension forms a dimensions them by usi multiple lay (Layers)	Discussion a criticism	Asking questions
21st	6	Cognitive a emotional	method repeating sha using command (Po array & ar Rectangular)	Discussion a criticism	Case study

22nd 23rd	6	Cognitive	modus operar (Block) to rep the geomet shapes and method of stora and recall	discussion	Case study and Asking questions
24th	6	Discussion a criticism	drawing an integrated plate containing the types of fees (2D) and (3D) and containing a spreadsheet and explain the fees.	Discussion a criticism	Case study
25th	6	Discussion a criticism	presentation formats w different scenes a single scre using command (vi ports)	Discussion a criticism	Asking questions
26th	6	discussion	method transmission f between files a how to open m than one through window it)	discussion	Asking questions
27th	6	Cognitive outcomes	singled geomet shapes (Cu prism, pyramid)	lecture	Asking questions
28th	6	Cognitive outcomes	single geomet shapes (pyran lump, Cone)	Discussion	Case study
29th	6	Cognitive outcomes	scale and meth of printing usi the plot	lecture	Asking questions
30th			export fees formula (dwg) (pdf) as well	lecture	Asking questions

			(psd) creates virtual printers		

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 any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

1. Course Name**:**
Human Rights and Democracy
2. Course Code:
TC11
3. Semester / Year:
Year
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total) 2
60 hours/2 units
7. Course administrator's name (mention all, if more than one name)
Name: Mustafa Mohamad abd Al-sahb Email:
8. Course Objectives

Course Objectives	Subject goal: teach students the principles of the preliminary engineering drawing and computer drawing programs efficiently and rapidly to enable him to express his thoughts through him. The goal of Subject: the rehabilitation of the student to draw and read engineering maps with knowledge of architectural and structural terms that are used in the maps.

9. Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most importa of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2	Cognitive outcomes	Human Rig definition, goa human rights ancient civilizations, especially civilization Mesopotamia	lecture	questions a answers
2nd	2	Cognitive outcomes	Human Rights the heaver religions with emphasis Human Rights Islam	Discussion	Asking questions
3rd	2	Cognitive outcomes	Human rights in contemporary a modern history: international recognition human rights sir World War I, United Nations a the League	lecture	Listening a asking questions
4th	2	Cognitive a emotional outcomes	Regional recognition human rights: European Convention Human Rig 1950, the Americ Convention Human Rig	lecture	Case study

			1969, the Afric Charter on Hum Rights in 1981, Arab Charter Human Rights 1994		
5th	2	Cognitive a skills	Non-governmen human rig organizations (International Committee of Red Cro Amnesty International, Human Rig Watch (HRW), national hum rights organizations	discussion	Case studies
6th	2	Cognitive a skills	Human Rights the Ir constitutions between theory a reality	Discussion a mini lesso	Mini lesson
7th	2	My knowled my skills	The relationship between human rights and freedoms 1. In the Universal Declaration of Human Rights Covenants in regional a national constitutions	lecture	discussion
8th & 9th	2	Rate	Rights a economic, soc and cultural rig and the rights civil and politi rights	discussion	Case study

10th	2	My knowledg and skills	Modern hum rights: the facts the developm and the right to clean environme the right solidarity, the ri to religion	discussion	Questions
11th	2	My knowled and skills	Guarantees the respect and protection of human rights at the international level.The United Nations and its specialized agencies in the provision of guarantees Local Organizations - role of the Arab League, European Union, African Union, Organization America States, Organization of ASEAN The regional n governmental organizations a public opinion respect for a protection human rights	Lecture a criticism	Asking questions

12th & 13th	2	My knowlec and skills	General Theory Freedom: T origin of the rig and freedoms, position of project's sta rights a freedoms, to u the term pub freedoms	Lecture a criticism	Practical exercise
14th	2	My Skills	Legal basis for rule of law	lecture	Work groups
15th	2	Cognitive	Organization public freedoms public authoritie	discussion	Work groups
16th	2	Cognitive	Equality: the modern evolution of the concept of equality The modern evolution of the idea of equality gender equality Equality betwe individuals according to th beliefs and th race	lecture	Mini lesson
17th	2	My knowlec and skills	Democracy, definition, types	Lecture a criticism	Practical exercise
18th	2	My knowlec and skills	The concepts democracy	lecture	work groups
19th	2	Cognitive	Democracy in Third World	discussion	Asking questions
20th	2	My knowlec and skills	Democratic systems in world	lecture	Asking questions
21st	2	Cognitive a emotional	Basic freedor intellectual freedoms, economic a social freedoms	lecture	Case study

22nd 23rd	2	Cognitive	Freedom and a sense of security reassured Freedom of comi and going	lecture	Case study and Asking questions
24th	2	Discussion a criticism	Freedom of learning Freedom of the press Freedom assembly	lecture	Case study
25th	2	Discussion a criticism	Freedom of Association Freedom of actic	lecture	Asking questions
26th	2	discussion	Right to o property	lecture	Asking questions
27th	2	Cognitive outcomes	Freedom of tra and industry	lecture	Asking questions
28th	2	Cognitive outcomes	Women's Freedo	lecture	Case study
29th	2	Cognitive outcomes	Political parties a public freedoms	lecture	Asking questions
30th	2	Discussion a criticism	Scientific a technical progr and pub freedoms	lecture	Asking questions

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, any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description

Course Name: Arabic Language
Course Code: TC12
Term/Year: Annual 2025/2025
Date of Preparation: 4/3/2025
Available Attendance Format: In-Person
Total Study Hours per Year / Total Units: (30) Theoretical / 1 hour per week
Course Coordinator: Name: Lecturer Athmar Hamza Turki Email: athmar.turki.4@atu.edu.iq

Course Coordinator:

Course Objectives

By the end of the course, students should be able to:

- Differentiate between the tied "tā'" and the open "tā'".
- Identify words that end with a tied "tā'".
- Distinguish between long and short "alif".
- Differentiate between lunar and solar "lām".
- Identify differences between the letters "ḍād" and "ẓā'".
- Define the cutting hamza.
- Define the connecting hamza.
- Identify positions of the cutting hamza in nouns.
- Identify positions of the connecting hamza in verbs.
- Recognize rules for writing medial hamza.
- Recognize rules for writing final hamza.
- Explain why the medial hamza is written on "alif".
- Use punctuation marks correctly.
- Understand word classification.
- Identify noun markers.
- Identify verb markers.

- Differentiate between nouns, verbs, and particles.
- Extract objects from sentences.
- Explain types of the absolute object.
- Define the direct object.
- Recognize number types.
- Understand number distinction.
- Identify the importance of administrative language.
- Understand the meanings of prepositions.
- Identify cases where "differentiating alif" is used.
- Differentiate between "nūn" and "tanwīn".
- Recognize nominal sentences.
- Differentiate between the subject and predicate.
- Understand how to write administrative formats.

Teaching and Learning Strategies

- Lecture method.
- Discussion method.
- Error identification method.
- Allocating grades for daily assignments and tests.

Course Structure

Week(s)	Hours	Learning Outcomes	Topic	Teaching Method	Assessment Method
1-2	2	Cognitive Understanding	Linguistic errors, open & tied "tā’"	Theoretical Lecture	Daily quizzes, oral questions
3	1	Cognitive Understanding	Differences between "ḍād" and "ẓā’"	Theoretical Lecture	Daily quizzes, oral questions
4	1	Cognitive Understanding	Long & short "alif"	Theoretical Lecture	Daily quizzes, oral questions
5	2	Cognitive Understanding	Lunar and solar "lām"	Theoretical Lecture	Daily quizzes, oral questions
6-8	3	Cognitive Understanding	Medial & final hamza	Theoretical Lecture	Daily quizzes,

Week(s)	Hours	Learning Outcomes	Topic	Teaching Method	Assessment Method
					oral questions
9	1	Cognitive Understanding	Punctuation marks	Theoretical Lecture	Daily quizzes, oral questions
10-11	2	Cognitive Understanding	Nouns, verbs, and their differences	Theoretical Lecture	Daily quizzes, oral questions
12-13	2	Cognitive Understanding	Verbs: structure & inflection	Theoretical Lecture	Daily quizzes, oral questions
14-15	2	Cognitive Understanding	Objects: absolute & direct objects	Theoretical Lecture	Daily quizzes, oral questions
16-17	2	Cognitive Understanding	Causal & locative objects	Theoretical Lecture	Daily quizzes, oral questions
18	2	Cognitive Understanding	Numbers and their distinction	Theoretical Lecture	Daily quizzes, oral questions
19	2	Cognitive Understanding	Common linguistic errors applications	Theoretical Lecture	Daily quizzes, oral questions
20	1	Cognitive Understanding	Meanings of prepositions	Theoretical Lecture	Daily quizzes, oral questions
21-22	2	Cognitive Understanding	Differentiating "alif", "nūn", and "tanwīn" rules	Theoretical Lecture	Daily quizzes, oral questions

Week(s)	Hours	Learning Outcomes	Topic	Teaching Method	Assessment Method
23-24	2	Cognitive Understanding	Subject and predicate	Theoretical Lecture	Daily quizzes, oral questions
25-26	2	Cognitive Understanding	Administrative language	Theoretical Lecture	Daily quizzes, oral questions
27-28	2	Cognitive Understanding	Formal aspects of administrative discourse	Theoretical Lecture	Daily quizzes, oral questions

Course Assessment

Grades are distributed out of 100 based on tasks assigned to students, including daily preparation, oral and written quizzes, reports, etc.

Learning and Teaching Resources

Required Textbooks (If available)

- Standard Curriculum

Main References (Sources)

- *Applied Grammar*, Khaled Abdulaziz, 2018-2019.
- *Clear Orthography*, Abdul Majeed Al-Nuaimi, Baghdad, 6th ed., 1987.
- *Arabic Language for Second Intermediate Level*, Fatima Nazem, 2018.
- *From the Spirit of Arabic Literature*, Haval Mohammed, Al-Saadoun Press, Baghdad.

Recommended Supplementary Books and References

- Scientific journals, reports, etc.

Electronic References and Websites

- Specialized websites

Course Description Form

13.Course Name**:**	
Surveying 1	
14.Course Code:	
TC22	
15.Semester / Year:	
Year	
16.Description Preparation Date:	
2025	
17.Available Attendance Forms:	
Presence	
18.Number of Credit Hours (Total) / Number of Units (Total)	
120 Hours - 4 Units	
19.Course administrator's name (mention all, if more than one name)	
Name: Doaa Falah Rasool Email: doaa.rasool.ikr16@atu.edu.iq	
20.Course Objectives	
Course Objectives	**General subject goal:** teach students the basics of space and use it for the purposes of civil engineering and calculations related **The goal of the subject:** the rehabilitation of the student use the different surveying equipment for ci construction and implementation of maps for projects a enable it to planning, supervision and implementation these projects
21.Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most import of these methods are: - (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	4	Cognitive outcomes	Definition of spa fields uses its divisic and units measurement.	lecture	questions a answers
2nd	4	Cognitive outcomes	Measure the horizon distances on flat la (guidance) horizon distance measurem process on the land irregular gradient.	Discussion	Asking questions
3rd	4	Cognitive outcomes	Horizontal distar measurement sloping land (regu gradient) (if aware height differen Azaalmt degree slo of the land, if the la has learned downl angle).	lecture	Listening a asking questions
4th	4	Cognitive a emotional outcomes	To set up and dr columns (Accommodations ways and methods projection), overcoming obstac (inhibitions) encountered measuring horizon distances.	Dialogue and criticis	Case study
5th	4	Cognitive a skills	The survey ta (Overstuffing ca when lifting)	discussion	Case studies
6th	4	Cognitive a skills	Flat panel flat pa lifting parts ways (mode.	Discussion a mini lesson	Mini lesson
7th	4	My knowled my skills	Lifting the fr intersection meth the rotation meth (keying error and h	Role playing	discussion

			to correct it) flat pa survey advantages a disadvantages.		
8th	4	Cognitive a skills	Definitions settlem related purposes	discussion	Case study
9th	4	Cognitive	How to calculate levels of the points i way the surface of balance and solvi examples	a lecture	Listening a speaking
10th	4	My knowlec and skills	How to calculate points levels rise a fall in a way a solving examples	discussion	Questions
11th	4	My knowlec and skills	Dual settlem spherical Earth and effect of light on work of the fractu settlement.	Lecture and criticis	Asking questions
12th	4	My knowlec and skills	Settlement inver mutual settlem (reverse) with soluti examples	Lecture and criticis	to listen
13th	4	And sentimental	Sources of errors in work of the settlem degree of precision amount of allowa error.	Discuss and listen	Asking questions
14th	4	My Skills	Longitudinal sections drawing longitudinal section solution examples	Dialogue and discuss n	Work groups
15th	4	Cognitive	Cross-sections to fi the levels of cro section of the cro section drawing poir	discussion	Work groups
16th	4	Cognitive	Creation line accou Creation mile line find the levels Creation line points aware of the tender	Discuss and listen	Mini lesson

			(to draw a line to proposed project).		
17th	4	My knowled and skills	Calculate the amou of land the occasio use Altersemeh roa laws and coordina sports sections.	Lecture and criticis	Practical exercis
18th	4	My knowled and skills	Calculate the volun of dirt quantities drilling and filling.	Discuss and listen	And work group
19th	4	Cognitive	Check and adjust budget comprom settlement lines dev (budget settlement	discussion	Asking question
20th	4	My knowled and skills	contour lines propert period contour fact upon which the peri set contour Gla contour contour li (direct method).	Discussion a criticis	Asking question
21st	4	Cognitive a emotional	Methods determination of contour lines (indir methods), and method of sectio method of cont points squares meth (retina settlement).	Discussion a criticis	Case study
22nd	4	Cognitive	Drawing contour li (calculation meth and the method of s the difference).	discussion	Case study
23rd+	4	Cognitive	Downgrades volun account for tar (tank) drawing sectio of the contour lines.	discussion	Asking question
24th	4	Discussion a criticism	Area calculations usi Plan miter device.	Discussion a criticis	Case study
25th	4	Discussion a criticism	Deviations deviati ring Manual lo attractions.	Discussion a criticis	Asking question
26th	4	discussion	Survey (lifting) usin compass and practi	discussion	Asking question

			exercises on how survey the comp accounts.		
27th	4	Cognitive outcomes	curves horizon curves kinds (circu gradient) elements the curved ring sim and draw each ty Twenty	lecture	Asking questions
28th	4	Cognitive outcomes	Ring simple curved design (equations so) free simple curved ring.	Discussion	Case study
29th+30th	4	Cognitive outcomes	Vertical design curv vertical curves.	lecture	Asking questions

23.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	
24.Learning and Teaching Resources	
Required textbooks (curricular books, any)	
Main references (sources)	5) Book of Plane Surveying and Topography/ Fouad Malallah Fandakli 6) Detailed Surveying and topography / Mahmoud Hosni Abdel Rahim 7) 2. The Book of Surveying / Labib Nasief Sallou,1985 Construction Survey/William Irvine1976 ,
Recommended books and references (scientific journals, reports...)	ح الهندسي والكادسترائي / زياد عبد الجبار البكر, 1989
Electronic References, Websites	https://civiltoday.com/surveying/13-definition-and-importance-of-surveying

Course Description Form

1. Course Name:
Soil Mechanics
2. Course Code:
TC22
3. Semester / Year:

Year
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
120 Hours - 4 Units
7. Course administrator's name (mention all, if more than one name)
Name: Diaay Hussen Abs Email: dheyaa. abs. ims
8. Course Objectives

Course Objectives	**Main objective :** Known the student about the mechanical properties of the soil in which they can estimate the impact of the selected foundation and the construction that arias on different types of the soil . **Secondary objective**: Rehabilitation the student and improves their skill needed in the soil classification and conduct the necessary tests (laboratory or field) and the relationship of construct that arias on it .
9. Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most import of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	4	Cognitive outcomes	Soil definiti introduction geological ro types, how to rocks from the s	lecture	questions a answers
2nd	4	Cognitive outcomes	Soil componer physical propert of the s (moisture conte	Discussion	Asking questions

			porosity, air voi wet and d density, satura and submerg density a specific gravity).		
3rd & 4th	4	Cognitive outcomes	Granular analy of soil (sieving a hydrometer).	lecture	Listening a asking questions
5th	4	Cognitive a emotional outcomes	Plasticity characteristics the soil (liquid limit, plastic limit and shrinka limit).	Dialogue a criticism	Case study
6th&7th	4	Cognitive a skills	Soil classificati using standardized classification method (Unif Classification System).	discussion	Case studies
8th&9th	4	Cognitive a skills	Soil permeabili coarse s permeability, f soil permeabil and methods measurement in field a laboratory.	Discussion and m lesson	Mini lesson
10th	4	My knowled my skills	Types of stresses the soil, the to stress and effect stress.	Role playing	discussion
11th	4	Cognitive a skills	Lateral Ea Pressure of the s with an explanati of the types filters.	discussion	Case study
12th	4	Cognitive	Soil Stabilizati mechanical meth (Compaction).	a lecture	Listening a speaking

13th	4	My knowled and skills	Types of laborat and fi compaction tests	discussion	Questions
14th&15th	4	My knowled and skills	Other methods Stabilized s properties, Stabilization w (cement, asph and limesto dust).	Lecture a criticism	Asking questions
16th&17th	4	My knowled and skills	Modern methods soil stabilizatio types and meth of materials us (Reinforced Eart	Lecture a criticism	to listen
18th	4	And sentimental	Californian Bearing Ra (CBR) and importance in implementation the highway.	Discuss and listen	Asking questions
19th&20th	4	My Skills	Consolidation the soil and relationship to occurrence Settlement.	Dialogue a discussion	Work groups
21st	4	Cognitive	Swelling a Collapse.	discussion	Work groups
22nd	4	Cognitive	Definition of soil shear stren and its importa in the calculation the amount of s Bearing Capacity	Discuss and listen	Mini lesson
23rd	4	My knowled and skills	Unconfined Compression Te	Lecture a criticism	Practical exercise
24th	4	My knowled and skills	Direct Shear Tes	Discuss and listen	And work groups
25th&26th	4	Cognitive	Triaxial Compression Te	discussion	Asking questions
27th	4	My knowled and skills	In Situe Shear Te	Discussion a criticism	Asking questions

28th	4	Cognitive a emotional	Types foundations a their relationship the amount bearing soil.	Discussion a criticism	Case study
29th	4	Cognitive	Shallow Foundation a Deep Foundati as Piles .	discussion	Case study
30th	4	Cognitive	A sim introduction to work of s investigations (S Exploration) a the types of mod and the method preparation a take them de experiential drilling to carried out on sit	discussion	Asking questions

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, any)	
Main references (sources)	Book of Plane Surveying and Topography / Fou Malallah Fandakli 2. The Book of Surveying / Labib Salloum
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course description form

25.Course name

Human rights and democracy
26.Course Code
27. Semester/ year
year
28. The date this description was prepared
2025
29.A. Attendance forms available for the first stage
30. / Number of study hours (total)2 Number of units (total) 2
60 hours / 2 Units
31.Name of the course administrator (if more than one name is mentioned)
:Yamil - Name: Hussain Ali Muhammad Alhussain.muhammed@atu.edu.iq
32.objectives Course

1- The student learns about the principles and values of human rights **2- Defining and educating generations on democracy Respect it and stick to it** **Learn about public freedoms and -3 what these freedoms are Its details** **.**	**Objectives of the study subject**

33.Teaching and learning strategies

The student learns about continuous awareness of human rights and the .fundamental freedoms associated with them And to fight everything that aims to ignore it, harm it, or undermine its sanctity, and to recognize .The concept of democracy and its relationship to public freedoms	**The strateg**

34. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
oral test	a lecture	rights Human Definition and objectives	knowledge And meaning And what it is human rights And her relationship With	2	1

			others from Threads in meaning Human rights / concept The concept of human rights throw lecture And a question Students on the topic knowledge And inquiry on to understand Students For the topic		
oral test	a lecture	Human rights in ancient civilizations, especially the Mesopotamian civilization	knowledge And meaning And what it is Human rights in civilizations And her relationship With others from Threads human rights As A field Independently throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic	2	2
oral test	a lecture	Human rights in heavenly laws	knowledge Rights according	2	3

			to divine laws And all what Regard with it With rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students		4
A written test	discussion	Human rights in Islam		2	5
oral test	a lecture	Non-governmental organizations and human rights International) Committee of the Red Cross - Amnesty - International	knowledge Human rights committees And all what Regard with it And everything related to human rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And	2	6

			inquiries on the topic with to request Preparation from Students		
oral test	a lecture	Human Rights Watch - Arab Human Rights .Organizations	knowledge Human rights organizations throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	7
oral test	a lecture	Human rights in Iraqi constitutions between theory and reality. - The Iraqi Constitution	knowledge Iraqi constitutions throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	8

oral test	a lecture	The relationship between human rights and public .freedoms	knowledge The relationship between human rights and public freedoms throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	9
oral test	a lecture	Universal Declaration of Human Rights	knowledge Universal Declaration of Human Rights and Public Freedoms throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to	2	10

			request Preparation from Students		
A written test	discussion	Regional charters and national .constitutions	Identify on factors Influential in National charters and constitutions throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	11
oral test	a lecture	Modern human rights	Identify on factors Influential in economic, social and cultural human rights and civil and political (human rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract	2	12

			questions And inquiries on the topic with to request Preparation from Students		
oral test	discussion	Economic, social and cultural human rights and civil and political (human rights	Identify on Guarantees for the protection of human rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	13
oral test	a lecture	Guarantees of respect and protection of human rights at the national and international .levels	Identify on Theories of human achievement throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the	2	14

			topic with to request Preparation from Students		
oral test	a lecture	The general theory of freedoms: the origin of rights and freedoms - the project's position on declared rights .and freedoms	Identify Non-governmental organizations throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	15
oral test	a lecture	The role of non-governmental organizations in respecting and protecting human .rights	knowledge And meaning And what it is Democracy and its relationship With others from Threads in meaning Democracy / concept, types and characteristics Democracy throw lecture And a question Students on the topic knowledge And inquiry on to	2	16

			understand Students For the topic		
A written test	discussion	The historical development of the concept of equality. The modern development of the idea of equality	knowledge And meaning And what it is human rights And her relationship With others from Threads in meaning Human rights / concept The concept of human rights throw lecture And a question Students on the topic knowledge And inquiry on to understand Students For the topic	2	17
oral test	a lecture	Gender equality - equality between individuals according to their beliefs and race	knowledge And meaning And what it is Human rights in civilizations And her relationship With others from Threads human rights As A field Independently throw lecture And a question Students on the topic Subtract questions on Students and	2	18

			give the time For students To subtract questions And inquiries on the topic		
oral test	discussion	Equality in society	knowledge Rights according to divine laws And all what Regard with it With rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	19
oral test	a lecture	Democracy definition and types		2	20
oral test	a lecture	Democratic systems in the world	knowledge Human rights committees And all what Regard with it And everything related to human rights throw lecture And a question Students on the topic	2	21

			Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students		
oral test	a lecture	The crime of genocide	knowledge Human rights organizations throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	22
A written test	discussion	Non-governmental organizations and human rights International) Committee of the Red Cross - Amnesty - International	knowledge Iraqi constitutions throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To	2	23

			subtract questions And inquiries on the topic with to request Preparation from Students		
oral test	a lecture	Human Rights Watch - Arab Human Rights .Organizations	knowledge The relationship between human rights and public freedoms throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	24
oral test	discussion	Human rights in Iraqi constitutions between theory and reality. - The Iraqi Constitution	knowledge Human rights in Iraqi constitutions between theory and reality. - The Iraqi Constitution throw lecture And a question Students on the topic Subtract questions on Students and	2	25

			give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students		
oral test	a lecture	The relationship between human rights and public .freedoms	Identify on factors Influential in For human rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	26
oral test	a lecture	Universal Declaration of Human Rights	Learn about the Universal Declaration of Human Rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To	2	27

			subtract questions And inquiries on the topic with to request Preparation from Students		
oral test	a lecture	Regional charters and national .constitutions	Identify Human rights conventions throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	28
oral test	discussion	Modern human rights	Identify on Theories of human achievement throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to	2	29

			request Preparation from Students		
A written test	a lecture	Economic, social and cultural human rights and civil and political (human rights	Identify Human economic, social and cultural rights lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	2	30
oral test	a lecture	Guarantees of respect and protection of human rights at the national and international .levels	Knowledge of guarantees of respect and protection of human rights at the national and international .levels throw lecture And a question Students on the topic knowledge And inquiry on to understand Students For the topic	2	30
35.Course evaluation					
Distribution of the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports, etc					

marks monthly exam 40 marks for daily and oral preparation and report writing 10 final exam score 50	
36.Learning and teaching resources	
Human rights and democracy	Required textbooks (methodology, if any)
Public opinion and human rights / Dr. Amer Hassan Fayyad	Main references (sources)
Scientific journals, periodicals and resear And specialty	Recommended supporting books and references (scientific journals, (....reports
Internet sites (YouTube and Google) and other media Communication in the specialty	Electronic references, Internet sites

Course Description Form

1. Course Name:	
PROJECT	
2. Course Code:	
TC22	
3. Semester / Year:	
Year	
4. Description Preparation Date:	
2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total) 2	
60 Hours / 2 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Email:	
8. Course Objectives	
Course Objectives	**Objectives of the course: Teaching the student how to conduct research and practical and applied projects in various fields of work.**

	Teaching the student how to search scientific sources and how to conduct research and projects with the help of specialized professors in the department, and to utilize the laboratories and equipment of the department and institute, as well as equipment in state departments, according to the available capabilities and in a manner commensurate with the nature of the project.
9. Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and the most importa of these methods are:- (theoretical and practical lecture, discussion a dialogue, field visits, discussion circles on specific topics, theoretical a practical student research, office activities)

Course Description Form

1. Course Name: Computer2	
2. Course Code:	
TC32	
3. Semester / Year: year	
Annual System	
4. Description Preparation Date: 2025	
5. Available Attendance Forms:	
In-person	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45h / u	
7. Course administrator's name (mention all, if more than one name)	
Wasan mubdir khilkhal **wasan.khilkhal.ikr15@atu.edu.iq**	
8. Course Objectives	
Course Objectives	
9. Teaching and Learning Strategies	
Strategy	Theoretical Lecture Practical lecture Discussion Student research quiz

10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Security and Network	What is network ,types of networks, basic network components	Lecture and discussion	Quiz
2-3	3	Security and Network	Network security basics ,understanding network threats	Lecture and discussion	Question and discussion
4-5	3	Computer troubleshooting	Identifying and solving common hardware and software problems that computer users encounter	Lecture and discussion	Quiz
6-7	3	Introduction to Ai	Definition of AI ,History and technique of AI	Lecture and discussion	Quiz
8-9	3	The role of AI in modern smart phones	AI-DRIVEN MOBILE TECHNOLOGE ,virtual assistants	Lecture and discussion	Quiz
10-11-12	3	Application of AI and its tools	Transporting ,marketing and automation Technologies.	Lecture and discussion	discussion
13	3	AI in society	How AI affects social AI and international relation and future of humanity	Lecture and discussion	Quiz
14	3	Ethical challenges in AI	ETHIC ,Privacy	Lecture and discussion	discussion

15	3	The future of AI	Future trend in AI, research and emerging technologies	Lecture and discussion	Quiz

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, any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	**1-Graham Brown,David Watson 'ambridge IGCSE Information and ommunication Technolog"3 edition 2020** **2-Al an Evans,Kendall Martian ,Mary Anne Poatsy"Technology In Action Complete"16 edition 2020** **3-Ahmed Banafa"Introduction to artificial Intalegence(AI) first addition 2025** **4-Microsoft office 2019 step by step 1st edition by Curtis Fry and Joan Lambert** **ضر علي الخضر"اساسيات الحاسوب " 2016 -5**
Electronic References, Websites	Electronic web