Academic Program Description Form

University name: Al-Furat Al-Awsat Technical University

College/Institute: Karbala Technical Institute

Scientific Department: Department of Civil Techniques

Name of the academic or professional program: Civil Techniques

Name of final certificate: Diploma in Civil Techniques

Academic system: annual system

Description preparation date: 29/9/2025

File Completion Date: 18/12/2025

جامعة الفرات الاوسط التقنية
قسم هندسة تقنيات البناء والانشاءات
كلية البوليتكنك - كربلاء

21/12/2025

Signature:

Scientific Associate Name:

Assi. Prof. Abdul Khider Aziz Mutasher

Date:

Signature: MH

Scientific Associate Name:

Assi. Prof. Dr. Mohamad Fadhil Neamha

Date: 21-12-2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assi. Prof. Ali Neamah Hasan Ali Neamah Hasan.

Date:

Signature:

Approval of the Dean

Fadhil M. Dahir

Academic Program Description Form

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College/Institute: **Karbala Technical Institute**

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Signature:

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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

2026

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:**
2025/10/1	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 computers, 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.

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	2	2	1	1	Computer Apps (2)	7
	Specialized	6	3	2	1	Quantity surveying	8
	Specialized	4	2	-	2	Buildings and factory construction	9

	General	**2**	**1**	-	**1**	English Language	**10**
	Help	**1**	**1**	**1**	**1**	Arabic Language	**11**
	Help	**2**	**2**	1	**1**	Computer2	**12**
	General	**2**	**1**	-	1	Baath Party crimes in Iraq	**13**
	Specialized	**4**	**2**	**2**	-	The project	**14**
		69	**37**	**21**	**16**	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 personal appearance and behavior. 5. To be familiar with international civil engineering standards	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.
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.	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.

2. Developing Internet research skills to expand the cognitive horizon.	
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				√	
Lecturer	1	1			√	
assistant lecturer	3	8			√	

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 2 applications	**TC27**	
✓	✓			✓	✓	✓		✓	✓			**Help**	English	**TC28**	
✓	✓			✓	✓	✓		✓	✓			**Help**	Baath Party crimes in Iraq	**TC29**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	construction techniques	**TC30**	
✓	✓			✓	✓	✓		✓	✓			**Specialized**	The project	**TC31**	

✓	✓			✓	✓	✓		✓	✓			**Help**	Arabic	**TC32**	
✓	✓			✓	✓	✓		✓	✓			**Help**	Computer 2	**TC33**	

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) 8	
120 hours / 4 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Abdullah Shaish Email: abdullahkadh@gmail.com	
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 survey 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 pour 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 locatic of sinks, bathtubs, toile etc.	discussion	Asking questions
twenty fourth	4	Discussic and criticism	Case study	Discussion and critic m	Case study
25th	4	Discussic 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 survey 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 - 6 Units
19.Course administrator's name (mention all, if more than one name)
Name:Dr. 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	To identify device theodolite	To identify device theodolite / pa uses, types, set the machine, re the horizontal a vertical trends different species	lecture	questions answers
2nd	3	Check and adj the Al-theodolite	Check and adj the Al-theodol device for all kir of vertical a horizontal te and then find fixed device	Discussion	Asking questio
3rd	3	Methods measuring horizontal ang Altheodoleight	Methods measuring horizontal ang Altheodoleight device	lecture	Listening asking questions
4th	3	Ribbing, types polygons,	Ribbing, types polygons, purpose, its uses	Dialogue a criticism	Case study
5th	3	Measuring inter horizontal angles	Measuring inter horizontal ang closed polyg and corrected	discussion	Case studies
6th	3	Methods measuring horizontal distan	Methods measuring horizontal distar to the sides of polygon.	Discussion and m lesson	Mini lesson
7th	3	Drawing clos and open polygo	Drawing clos and open polygo	Role playing	discussion
8th	3	Survey area a raise the truss monuments to Theodolite a tape	Survey area a raise the truss monuments to Theodolite a tape	discussion	Case study
9th	3	Practical Exerc of the horizon component a vertical	Practical Exerc of the horizon component a vertical	a lecture	Listening speaking

			component directions		
10th	3	Practical Exerc of the horizon and verti coordinates	Practical Exerc of the horizon and verti coordinates open polygon.	discussion	Questions
11th	3	Measure vertical angles	Measure vertical angles Theodolite different ways	Lecture a criticism	Asking questio s
12th	3	Exercise on findi height of buildin	Exercise finding height building cou reach the base	Lecture a criticism	to listen
13th	3	Exercise finding height building	Exercise finding height building is possible to rea the base	Discuss and listen	Asking questio s
14th	3	Exercise finding height building	Exercise finding height building measuring th angles high a low	Dialogue a discussion	Work groups
15th	3	How curv horizontal lay tape only	How curv horizontal lay tape only	discussion	Work groups
16th	3	Curves and kin	Curves / and kin	Discuss and listen	Mini lesson
17th	3	Horizontal curv (curved elemen	Horizontal curv (curved eleme of ring Simp and the equatic used in the desi of the curved ri simple	Lecture a criticism	Practical exerci e
18th	3	Determine h the horizon curves / tangen	Determine how horizontal curve tangent meth built on colum ways (Baker wa - built on colum tendon w	Discuss and listen	And work grou s

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

			devices and how use them measure horizontal a vertical distance		
28th	3	construction o road or draina channel with d needed complete project	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	Iterance to station device u overall stati device	Iterance to station device u overall stati device to meas lengths of trav and internal ang and coordinates	lecture	Asking questio s

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, if ar	
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 Irvine19 6
Recommended books and references (scientific journals, reports...)	مسح 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 - 12 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	Introduction to structural drawing	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	Drawing longitudinal and cross-sections	Drawing longitudinal and cross-sections, as well as detailed sections of the finishing layers for	Lecture method, by using the whiteboard and the projector, and then	Homework

			floors, ceilings, and surfacing.	practical application using computers.	
4	6	Introduction to sanitary drawing, structures, and furniture for water and sanitary installation	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	Drawing out the structural details of the inspection	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	Drawing the structural details of the house plan's	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	Introduction to concrete and construction principles	Introduction to concrete and construction principles, concrete bearing capacity	Lecture method, by using the whiteboard and the	Quiz

			with various loads, the necessary types of reinforcement steel, and drawing symbols used in plans and construction details.	projector, and then practical application using computers.	
8	6	Concrete slabs, their types	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	Drawing the structural details of two-way solid slabs	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	Drawing the structural details of one- and two-way polygonal slabs.	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	Types of concrete joists	Introduction/Types of concrete joists	Lecture method, by	Homework

		and drawing the structural details	and drawing the structural details of simply supported joists with sections.	using the whiteboard and the projector, and then practical application using computers.	
12	6	Drawing structural details for continuous joists	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	Drawing the structural details of the monofilament joists	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	An introduction with a drawing of prestressed precast	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	Drawing out a horizontal plan	Drawing out a horizontal plan	Lecture method, by	Homework

		(key) for the joists	(key) for the joists of a structural building and establishing tables and details of the joists.	using the whiteboard and the projector, and then practical application using computers.	
16	6	structural details of the different types of concrete columns,	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	structural details and vertical sections to illustrate the bonding of reinforcing steel	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	foundations, their types and principles of operation	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	structural details of	Drawing the structural details of	Lecture method, by	Homework

		continuous foundations	continuous foundations and mat foundations.	using the whiteboard and the projector, and then practical application using computers.	
20	6	structural details of the foundations	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	Identifying concrete stairs and their types	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	Drawing structural details of joints in buildings	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	Drawing the structural	Drawing the structural details of	Lecture method, by	Homework

		details of the reinforced walls	the reinforced walls of elevators and basement walls.	using the whiteboard and the projector, and then practical application using computers.	
24	6	manufactured and prefabricated construction	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	Introduction to steel structures, their sections	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	Drawing the structural details for the connection of steel parts	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	Bonding of steel	Bonding of steel foundations and	Lecture method, by	Homework

		foundations and bases	bases, bonding of steel columns, bonding of joists to each other.	using the whiteboard and the projector, and then practical application using computers.	
28	6	Details of the gable steel drawing	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	Using the computer and its applications in the structural drawing	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	

37.Course Name: Quantitative Surveying
38.Course Code: TC24
39.Semester / Year: year
40.Description Preparation Date: 2025
41.Available Attendance Forms: Presence
42.Number of Credit Hours (Total) / Number of Units (Total) 4
90 hours 6 u
43.Course administrator's name (mention all, if more than one name)
Name: Ali Makki Abboud Email: ameer.mohammed.ikr@atu.edu.iq
44.Course Objectives

Course Objectives	• How to calculate the quantities of constructi items involved in the execution of facilities a buildings and their estimated costs, as well conducting measurements with price and c calculations for the project. To graduate techni personnel who possess the required skills perform estimation operations for vari construction works in civil engineering
45.Teaching and Learning Strategies	
Strategy	Calculation of quantities for construction items, price analys and total estimated project cost. 1. Understand the concept (quantitative) surveying, types of estimation, and estima specifications. 2. Learn how to prepare bills of quantities (BO and interpret them to estimate project cost. 3. Calculate quantit and costs for construction items below the plinth level and abo the plinth level. 4. Calculate reinforcement steel quantities foundations, tie beams, columns in structural frames, and sla 5. Calculate construction items related to finishing works buildings. |

1. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
the first	2	Understand basic conce of estimation | Definitic of estimation, its purpo the principles on which is based, and the expec benefits of the estimati process	Definitions estimation, purpose, principles which it based.	Lecture discussion	questions, daily q answers
the second	2	Understand types estimation and sk for preparing bills quantities | bill quantities (BOQ)	Types estimation, measurement units used for construction items,).	Lecture discus n Listen g and	asking questions Asking questions
the third	2	Calculate earthwc volume (fill and cut) foundations for varic works; various problem mentioning the stand measurement gui specifications, and pr analysis	Calculation earthwork quantity building foundations (various foundation types), explanation its BOQ,).	lecture	Listening a asking questions
the fourth	2	foundation type explanation of its BC mentioning	Calculate earthwork volume (fill a cut) foundations various wor various problems Calculation earthwork quantity building foundations (various foundation types),	Dialogue a criticis	Case study

			explanation its BC mentioning		
Fifth	2	Engineering foundation	Calculate earthwork volume (fill a cut) foundations various wor various problems Calculation earthwork quantity building foundations (various foundation types), explanation its BC mentioning	discussion	Case studie
sixth	2	Supplement engineeri foundations engineering wo machines	Supplement engineering foundations engineering works machi (the impact the rise, Bulge a contraction the soil account sizes)	Discussion a mini lesson	Mini lesson
Seventh	2	Description of machine, types	Almqlah (do include: Description the machi types, productivity calculation) with presentation c scientific film	Role playing	Asking questions

VIII	2	productivity and expen Alhvl cycle wo coordination	Loading sho (Alhvl) inclu (types, including tear productivity a expense, All cycle wo coordination work) with presentation two fil scientists.	discussion	Listening a asking questions
ninth	2	different machines work sites	A visit to the scientific work sites that is available by different machines. IX	a lecture	Listening a speaking
The tenth	2	Drilling machines	Drilling machines, overall drilling rig w facial disp scientific film	discussion	Questions
eleventh	2	Shovel, Shovel Naaour Scoop shellfish)	Drilling machines (background Shovel, Sho Naaourah, Scoop shellfi with presentation c scientific film	Lecture a criticis	Asking questions
twelve	2	transport units, paved a non-paved roads trucks truck classification according to multiple factors, tippers	Machinery an transport unit paved and no paved roads trucks, truck classification according to	Lecture a criticis	to listen

			multiple factc tippers, productivity account with the presentati of a scientific film.		
thirteenth	2	lorries, tractors a trailers	Balancing number of du trucks with volume drilling machines, lorries, tract and traile trucks railway	discussion	Asking questions
fourteenth	2	benefits w productivity account)	Terraced include (typ and benef with productivity account) w the presentati of a scienti film.	Discuss a listen	Work group
Fifteenth	2	Cognitive types a productivity benefits	Skimmers typ and productiv benefits acco with presentation c scientific film	discussion	Work group
sixteen	2	Abrasive perfo productive	Abrasive perform productive u abrasive sche in productiv account.	Discuss a listen	Mini lesson
And the sever enth	2	A scientific visit to business sites	A scientific v to the busin sites with presentation c scientific film	Lecture a criticis	Practical exercise

eighteen	2	Soil compacti machines inclu important	Soil compacti machines include important typ where they used with presentation c scientific film	Discuss a listen	work group
nineteenth	2	Alhdl productivity a expense, onion theory	Supplement machines All productivity a expense, oni theory pressure for distribution weights	discussion	Asking questions
The twentie	2	vibratory machines	Supplement Alhdl Alhad vibratory machines, productivity account Alhadlat	Discussion a criticis	Asking questions
And the twent first	2	Transport and ref concrete compaction	Transport a refine concr compaction equipment.	Discussion a criticis	Case study
twenty two	2	Accounts related to vertical curve	Accounts related to vertical curve	discussion	Case study
twenty third	2	Asphalt types	Asphalt typ and specifications the producti plants.	discussion	Asking questions
twenty four	2	sphalt specifications mattresses	sphalt specifications for mattress Alvarchat speed, types butterflies w the presentati of a scienti film.	Discussion a criticis	Case study

25th	2	Alvarchat speed, types	Scientific v to the asph production plants	Discussion a criticis	Asking questions
twenty-sixt	2	Almkhandqat types	Almkhandqat types, production ra account with presentation c scientific film	discussion	Asking questions
27th	2	Tunnels importance	Tunnels importance, types with presentation c scientific film	lecture	Asking questions
Twenty-eight	2	Project scheduling: wo progress schedule, arr network diagrams, a critical path	Detailed explanation work progr schedule, arr diagram, a critical path in engineering project | |	Constructive critical dialog	Listening, daily quiz.
Twenty nin	2	Conveyer belts, calcul the cost of transport	Conveyer be calculate cost of transp belts convey belts parts	lecture	Asking questions
Thirty	2	Some applications calculating constructi item quantities using computer	Applied examples using Ex software calculate quantities and costs constructio items	Lecture discussion	Asking questions, da quiz |Ask questions
2. Course Evaluation					
According to tasks assigned to the student, such as daily preparation, daily quizzes, oral exams, monthly exams, written exams, reports, etc.					
3. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			**equired Textbook: "Quantitative Surveying" M.M. Salama Sadiq Jassim and M.M. Sal**		

	Farhan Najm / Ministry of Higher Educat and Scientific Research, Technical Institu Foundation: **• Main Sources:** **1. Estimation and Specificati (Medhat Fadil Abdullah), Revi Fourth Edition, 1985** **2. Resident Engineer's Guide Construction Projects, Republic of Ir Ministry of Housing and Constructi Revised Second Edition, 2015**
Main references (sources)	**1. The book "Engineering Estimation a Specifications" by Ahmed Ali Amin** **Websites and YouTube channels specializing estimation and quantity surveying -**
Recommended books and references (scientific journals, reports...)	**Engineering Estimation a Specifications by Ahmed Ali Amin.**
Electronic References, Websites	Specialized websites

Course Description Form

4. Course Name: Construction Equipment
5. Course Code: TC26
6. Semester / Year: year
7. Description Preparation Date: 2025
8. Available Attendance Forms: Presence
9. Number of Credit Hours (Total) / Number of Units (Total) 4
10.Course administrator's name (mention all, if more than one name)
Name: Amir Zuhair Muhammad Ali Email: ameer.mohammed.ikr@atu.edu.iq

11.Course Objectives	
Course Objectives	• to determine productivity of the machi and how they operate a supervise the completion the work well

12.Teaching and Learning Strategies	
Strategy	There are many teaching and learning methods used, and 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)

13. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
the first	2	Construction equipment, importance of machines	Construction equipment, importance of machines, a	lecture	questions answers

			ways to get the and the pros a cons own or r the machin with presentation o scientific film.		
the second	2	Cost and exper of owning machines	Cost and exper of owning machines (wr off cos investment maintenance a repairs).	Discussion	Asking qu stion
the third	2	Supplement cost and exper of owning machines	Supplement cost and exper of owning machines, operating co (fuel costs, costs, expl Math questi about integrated account costs).	lecture	Listening asking ques tions
the fourth	2	Special machin standard machin	Special machines, standard machines, a the trade-o between th with presentation o scientific film.	Dialogue a criticism	Case study
Fifth	2	Engineering foundations	Engineering foundations Engineering Works machin include (resistance movement a the effect inclination).	discussion	Case studi s

sixth	2	Supplement engineering foundations engineering wo machines	Supplement engineering foundations engineering works machi (the impact of rise, the Bu and contracti of the soil account sizes)	Discussion a mini lesso	Mini lesso
Seventh	2	Description of machine, types	Almqlah (do include: Description the machi types, productivity calculation) w the presentati of a scienti film.	Role playing	Asking qu stio
VIII	2	productivity a expense, All cycle wo coordination	Loading sho (Alhvl) inclu (types, includi teams, productivity a expense, All cycle wo coordination work) with presentation two fil scientists.	discussion	Listening aski g ques tions
ninth	2	different machi at work sites	A visit to the scientific work sites that is available by different machines. IX	a lecture	Listening spea king
The tenth	2	Drilling machin	Drilling machines, overall drilling rig w	discussion	Question

			facial disp scientific film.		
eleventh	2	Shovel, Sho Naaourah, Scc shellfish)	Drilling machines (background Shovel, Sho Naaourah, Scc shellfish) w the presentati of a scienti film.	Lecture a criticism	Asking qu stion
twelve	2	transport units, paved and non-paved roads trucks, truck classification according to multiple factors, tippers	Machinery and transport units, paved and non paved roads trucks, truck classification according to multiple factor tippers, productivity account with th presentation of scientific film.	Lecture a criticism	to listen
thirteenth	2	lorries, tract and trailers	Balancing number of du trucks with volume drilling machines, lorri tractors a trailers, truc railway.	discussion	Asking qu stion
fourteenth	2	benefits w productivity account)	Terraced inclu (types a benefits w productivity account) with presentation o scientific film.	Discuss and liste	Work grou ps
Fifteenth	2	Cognitive typ and productiv benefits	Skimmers typ and productiv benefits accou with	discussion	Work grou ps

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

twenty fourth	2	sphalt specifications mattresses	sphalt specifications mattresses, Alvarchat spe types butterflies w the presentati of a scienti film.	Discussion a criticism	Case study
25th	2	Alvarchat spe types	Scientific visit the asph production pla	Discussion a criticism	Asking qu stion
twenty-sixth	2	Almkhandqat types	Almkhandqat types, producti rates acco with presentation o scientific film.	discussion	Asking qu stion
27th	2	Tunnels importance	Tunnels importance, types with presentation o scientific film.	lecture	Asking qu stion
Twenty-eighth	2	Mechanical r incision tunne ventilation tunnels	Mechanical r incision tunne ventilation tunnels with presentation o scientific film.	Discussion	Case study
Twenty nine	2	Conveyer be calculate the c of transport	Conveyer be calculate the c of transport be conveyor be parts	lecture	Asking qu stion
Thirty	2	Conveyer be calculate the c of transport be conveyor	Conveyer be calculate the c of transport be conveyor be parts	lecture	Asking qu stion
14.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					
15.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

16.Course Name: **Concrete Technology**	
17.Course Code: TC20	
18.Semester / Year: Year	
19.Description Preparation Date:2025	
20.Available Attendance Forms: Presence	
21.Number of Credit Hours (Total) / Number of Units (Total) 8	
22.Course administrator's name (mention all, if more than one name)	
Name: Saif Mazin Aziz Email: saif.aziz.ikr@atu.edu.iq	
23.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.
24.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)

25. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	4	General princip for concr (definition, composition	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	Concrete mixing production	Concrete mixing production, mixing typ mixing time	Discussion	Asking questi ns
3rd	4	Fresh concre workability	Fresh concrete, workability, consistency, fresh concrete tests, Flowability, penetration, slump, compaction factor test, VB test, fact affecting concr workability	lecture	Listening a asking questio s
4th	4	Bleeding, segregation	Fresh concrete properties Bleeding, segregation, plastic shrinka fresh unit weigh	Dialogue a criticism	Case study
5th	4	unit weight, yie cement content fresh concre	Air voids (effect measurement), unit weight, yie cement content	discussion	Case studies

		density + absol volume formula	fresh concre density + absol volume formula		
6th	4	reinforced, cast place, pre-cast, p mixed	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	mixing typ mixing time	Concrete mixing production, mixing typ mixing time	Role playing	discussion
8th	4	Flowability, penetration, slump	Fresh concrete, workability, consistency, fresh concrete tests, Flowability, penetration, slump, compaction factor test, VB test, fact affecting concr workability	discussion	Case study
9th	4	transporting, compaction	Normal Concr casting, transporting, compaction	a lecture	Listening a speakin
10th	4	Normal Concr curing, hot weath concreting	Normal Concrete curing, hot weather concreting, Cold weath concreting	discussion	Questions

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

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

			Reactive powe concrete, roll compacted concrete		
28th	4	Concrete repair & rehabilitation	Concrete repairing & rehabilitation, Using epo carbon fiber	Discussion	Case study
29th+30th	4	Concrete mix design ACI method	Concrete mix design ACI method	lecture	Asking questi ns

26.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as dai y preparation, daily oral, monthly, or written exams, reports .... etc	
27.Learning and Teaching Resources	
Required textbooks (curricular books, if an	
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: TC30

3. Semester / Year: Year

4. Description Preparation Date:

5. Available Attendance Forms: Presence

6. Number of Credit Hours (Total) / Number of Units (Total) 8

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

Name: Abdullah Shaish
Email abdullahkadh@gmail.com

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	Foundations planning	Foundations planning, usi surveying equipment.	lecture	questions a answers
2nd	4	Excavations, Supported Excavation sides	Excavations, Supported Excavation side	Discussion	Asking questi ns

3rd	4	Reinforcing wo of the foundation	Reinforcing wo of the foundati of a wall or a pi Making and	lecture	Listening a asking questio s
4th	4	Showing a scienti movie for the pile	Showing scientific mo for the piles wor types and how th work and machines used f	Dialogue a criticism	Case study
5th	4	Brick work, Engl Bond, Flemish Bo	Brick wo English Bo Flemish Bond other types Bonds.	discussion	Case studies
6th	4	Building w blocks	Building w blocks (bloc thermostone).	Discussion and m lesson	Mini lesson
7th	4	Shuttering Wor training on the wo of Shuttering	Shuttering Wor training on work of Shutteri for column , be , Stairs a ceilings.	Role playing	discussion
8th & 9th	4	Foundations planning	Foundations planning, usi surveying equipment.	discussion	Case study
10th	4	Casting of norr and reinforc concrete using hand mixing	Casting of norr and reinforc concrete using hand mixing , well as training mechanical mixture.	discussion	Questions
11th	4	training mechanical mixtu	Scientific visit the work s Shuttering a casting concrete	Lecture a criticism	Asking questi ns

12th & 13th	4	Reinforcement work, st reinforcement , correct way to use	Reinforcement work, st reinforcement , correct way to u it, the work reinforcement the column a ceiling and be models.	Lecture a criticism	Practical exer ise
14th	4	Hardened concr tests	Hardened concr tests, compressi splitting, flexura	Dialogue a discussion	Work groups
15th	4	Factors influenc concrete streng results	Factors influenced concrete strength, Factors influenc concrete streng results	discussion	Work groups
16th	4	Concrete shrinkage	Concrete shrinkage, (dryi deferential, carbonation)	Discuss and listen	Mini lesson
17th	4	Concrete additiv	Concrete additives, (advantages, uses, constituents, Precautions)	Lecture a criticism	Practical exer ise
18th	4	Types of Concrete additives	Types of Concrete additives (retarders, accelerators, air entraining, silica fume, Water proofi weight loosing	Discuss and listen	work groups
19th	4	Concrete mix design	Concrete mix design ACI method	discussion	Asking questi ns
20th	4	Concrete mix design	Concrete mix design BS method	Discussion a criticism	Asking questi ns

21st	4	Concrete mix design	Concrete mix design examples	Discussion a criticism	Case study
22nd	4	Mix design Examples Concrete associated w additives	Mix design Examples Concrete associated w additives	discussion	Case study
23rd+	4	Nondestructive testing	Nondestructive testing, (radiation, hardness, pulse waves, Resonance frequency)	discussion	Asking questi ns
24th	4	Using fibers in concrete, Plastic, glass, ste wood	Using fibers in concrete, Plastic, glass, ste wood	Discussion a criticism	Case study
25th	4	Using polymers concrete	Using polymers in concrete, Polymer concret	Discussion a criticism	Asking questi ns
26th	4	Special types concrete	Special types of concrete, (light weight, heavy weight, under water concreting, Pre-cast concret	discussion	Asking questi ns
27th	4	Special types of concrete, (high performan	Special types of concrete, (high performance, high strength, self-compacting, Reactive pow concrete, rol compacted concrete	lecture	Asking questi ns
28th	4	Concrete repair & rehabilitation	Concrete repairing & rehabilitation,	Discussion	Case study

			Using epo carbon fiber		
29th+30th	4	Concrete mix design	Concrete mix design ACI method	lecture	Asking questi ns

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

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

Course Description Form

28.Course Name:
English 2
29.Course Code: TC28
30.Semester / Year:
Annual System
31.Description Preparation Date:
6/9/2023
32.Available Attendance Forms:
In-person
33.Number of Credit Hours (Total) / Number of Units (Total)
30 h / 2 u
34.Course administrator's name (mention all, if more than one name)
Name: Jaafar Haasan Jasim Email: Jaafar.ejam@atu.edu.iq
35.Course Objectives

Course Objectives	1. Conduct modern research and studies to keep up with the vocabulary of the new language. 2. Providing students with scientific skills in the language that will enable them later to write a CV and conduct interviews with companies.

	3. Giving students an idea of how to translate from Arabic to English and vice versa.

36.Teaching and Learning Strategies

Strategy	Cognitive Strategies: • Improving the student's skills in writing, reading, listening and speaking. • Enhancing the student's ability to understand the language without the need to refer to its meaning in Arabic. Methods: • Lecture. • Discussion with students and making groups. • Visual aids.

37. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Students understand the topic	Getting to know you	Lecture and discussion	Quiz
2-3	2	Students understand the topic	WB unit 1 / The way we live	Lecture and discussion	Open-book exercise
4-5	2	Students understand the topic	WB unit 2 / It all went wrong	Lecture and discussion	Quiz
6-7-8	3	Students understand the topic	WB unit 3/Let's go shopping/WB unit 4	Lecture and discussion	Open-book exercise
9	1	Students understand the topic	What do you want to do?	Lecture and discussion	Quiz
10	1	Students understand the topic	WB unit 5	Lecture and discussion	Open-book exercise
11-12	2	Students understand the topic	Tell me what's it like? / WB unit 6	Lecture and discussion	Quiz

13	1	Students understand the topic	Famous couples	Lecture and discussion	Open-book exercise
14	1	Students understand the topic	WB unit 7	Lecture and discussion	Quiz
15-16	2	Students understand the topic	Do's and don'ts / WB unit 8	Lecture and discussion	Open-book exercise
17-18	2	Students understand the topic	Going places / WB unit 9	Lecture and discussion	Quiz
19-20	2	Students understand the topic	Search to death / WB unit 10	Lecture and discussion	Open-book exercise
21	1	Students understand the topic	Things that change the world	Lecture and discussion	Quiz
22	1	Students understand the topic	WB unit 11	Lecture and discussion	Open-book exercise
23-24	2	Students understand the topic	Dreams & reality/ WB unit 12	Lecture and discussion	Quiz
25-26	2	Students understand the topic	Earnings a living/ WB unit 13	Lecture and discussion	Open-book exercise
27-28	2	Students understand the topic	Love you and leave you / WB unit 14	Lecture and discussion	Quiz
29-30	2	Students understand the topic	Review	Lecture and discussion	Open-book exercise

38.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.

39.Learning and Teaching Resources

Required textbooks (curricular books, any)	New Headway – Pre intermediate
Main references (sources)	Headway Series
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Google Books

Course Name: Arabic Language
Course Code: TC33
Term/Year: Annual 2025/2025
Date of Preparation: 4/9/2025
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	Linguistic errors, open	Linguistic errors, open & tied "tā’"	Theoretical Lecture	Daily quizzes, oral questions
3	1	Differences between "ḍād" and "ẓā’	Differences between "ḍād" and "ẓā’"	Theoretical Lecture	Daily quizzes, oral questions
4	1	Long & short "alif"	Long & short "alif"	Theoretical Lecture	Daily quizzes, oral questions
5	2	Lunar and solar "lām"	Lunar and solar "lām"	Theoretical Lecture	Daily quizzes, oral questions

Week(s)	Hours	Learning Outcomes	Topic	Teaching Method	Assessment Method
6-8	3	Medial & final hamza	Medial & final hamza	Theoretical Lecture	Daily quizzes, oral questions
9	1	Punctuation marks	Punctuation marks	Theoretical Lecture	Daily quizzes, oral questions
10-11	2	Nouns, verbs, and their differences	Nouns, verbs, and their differences	Theoretical Lecture	Daily quizzes, oral questions
12-13	2	Verbs: structure & inflection	Verbs: structure & inflection	Theoretical Lecture	Daily quizzes, oral questions
14-15	2	Objects: absolute & direct objects	Objects: absolute & direct objects	Theoretical Lecture	Daily quizzes, oral questions
16-17	2	Causal & locative objects	Causal & locative objects	Theoretical Lecture	Daily quizzes, oral questions
18	2	Numbers and their distinction	Numbers and their distinction	Theoretical Lecture	Daily quizzes, oral questions
19	2	Common linguistic errors applications	Common linguistic errors applications	Theoretical Lecture	Daily quizzes, oral questions
20	1	Meanings of prepositions	Meanings of prepositions	Theoretical Lecture	Daily quizzes, oral questions
21-22	2	Differentiating "alif", "nūn",	Differentiating "alif", "nūn",	Theoretical Lecture	Daily quizzes,

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

1. Course Name:
Soil Mechanics
2. Course Code:
TC21
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 - 8 Units
7. Course administrator's name (mention all, if more than one name)
Name: Marwaa hanee mohsen Email: marwaa.mohsen@atu.edu.iq
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	introduction geological rc types, how to rocks	Soil definiti introduction geological rc types, how to rocks from the s	lecture	questions answers

2nd	4	Soil componer physical properties of soil (moist content	Soil componer physical propert of the s (moisture conte porosity, air voi wet and d density, satura and submerg density a specific gravity).	Discussion	Asking question
3rd & 4th	4	Granular analy of soil	Granular analy of soil (sieving a hydrometer).	lecture	Listening asking questions
5th	4	Plasticity characteristics the soil	Plasticity characteristics the soil (liquid limit, plastic limit and shrinka limit).	Dialogue a criticism	Case study
6th&7th	4	Soil classificati using standardized classification	Soil classificati using standardized classification method (Unif Classification System).	discussion	Case studies
8th&9th	4	Soil permeabili coarse s permeability	Soil permeabili coarse s permeability, f soil permeabil and methods measurement in field a laboratory.	Discussion and m lesson	Mini lesson
10th	4	Types of stres in the soil	Types of stresses the soil, the to stress and effect stress.	Role playing	discussion
11th	4	Lateral Ea Pressure of soil with explanation of types of filters.	Lateral Ea Pressure of the s with an explanat of the types filters.	discussion	Case study

12th	4	Soil Stabilizati mechanical method	Soil Stabilizati mechanical meth (Compaction).	a lecture	Listening speaking
13th	4	Types laboratory a field compacti tests	Types of laborat and fi compaction tests	discussion	Questions
14th&15th	4	Stabilization w (cement, asph and limesto dust).	Other methods Stabilized s properties, Stabilization w (cement, asph and limesto dust).	Lecture a criticism	Asking question
16th&17th	4	Modern metho of s stabilization types and meth of materials	Modern methods soil stabilizatio types and meth of materials us (Reinforced Eart	Lecture a criticism	to listen
18th	4	Californian Bearing Ra (CBR)	Californian Bearing Ra (CBR) and importance in implementation the highway.	Discuss and listen	Asking question
19th&20th	4	relationship the occurre of Settlement	Consolidation the soil and relationship to occurrence Settlement.	Dialogue a discussion	Work groups
21st	4	Swelling a Collapse	Swelling a Collapse.	discussion	Work groups
22nd	4	Definition of soil sh strength and importance	Definition of soil shear stren and its importa in the calculation the amount of s Bearing Capacity	Discuss and listen	Mini lesson
23rd	4	Unconfined Compression Test	Unconfined Compression Te	Lecture a criticism	Practical exercis
24th	4	Direct Sh Test	Direct Shear Tes	Discuss and listen	And work group

25th&26th	4	Triaxial Compression Test	Triaxial Compression Te	discussion	Asking questions
27th	4	In Situe Sh Test	In Situe Shear Te	Discussion a criticism	Asking questions
28th	4	Types foundations	Types foundations a their relationship the amount bearing soil.	Discussion a criticism	Case study
29th	4	Shallow Foundation a Deep Foundation Piles	Shallow Foundation a Deep Foundat as Piles .	discussion	Case study
30th	4	and the types models and method preparation a take them de experiential drilling	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 / Fo Malallah Fandakli 2. The Book of Surveying / Labib Salloum
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Specialized websites

Course Description Form

1. Course Name:	
PROJECT	
2. Course Code:	
TC31	
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 / 4 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 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)

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 /2 u	
7. Course administrator's name (mention all, if more than one name)	
Wasan mubdir khilkhal Batool Alaa Mousa Nour Abbas Najm wasan.khilkhal.ikr15@atu.edu.iq batool.mousa.ikr17@atu.edu.iq noor.najm.ikr@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

16+17	2	Artificial intelligence applications and tools	Artificial Intelligence Applications and Tools	Lecture and discussion	Quiz
18-20	2	Artificial intelligence tools in transportation, marketing, and advertising	Overview of AI Applications in Various Fields	Lecture and discussion	discussion
21-24	4	Artificial intelligence tools in finance and robotics	AI Applications and Tools in Transportation, Marketing, and Advertising	Lecture and discussion	discussion
25	1	Intelligence in society	AI Applications and Tools in Finance, Robotics, and Automation	Lecture and discussion	discussion
26	1	Ethical challenges of intelligence	AI Applications in Society: How it Impacts Society, its Role in Global Relations, and its Effect on the Future of Humanity	Lecture and discussion	Quiz
27+28	2	The future of intelligence	The Future of Artificial Intelligence	Lecture and discussion	discussion
29-30	2	Latest trends in artificial intelligence	Latest AI Trends and Research	Lecture and discussion	discussion
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 ar	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	**1-Graham Brown,David Watson "Cambridge IGCSE Information and Communication 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- " ضر علي الخضر"اساسيات الحاسوب 2016**
Electronic References, Websites	Electronic web