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

Department of Civil Technologies

2024

Introduction:

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

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

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

In this regard, we can only emphasize the importance of writing 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.

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

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

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

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

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

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

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

Academic Program Description Form

University name: Al-Furat Al-Awsat Technical University

College/Institute: Technical Institute/Najaf

Scientific Department: Department of Civil Technologies

Name of the academic or professional program: Soil Mechanics, Concrete Materials

Name of final certificate: Technical diploma

Academic system: annual

Description preparation date: 19-3-2024

Date of filling the file: 26-3-2024

Signature:

Head of Department Name:.

Nabil Katfan Lotti

Date:

Signature:

Scientific Associate Name:

Dr. Salah Mahdi Al-Adly

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Dr. Muhammad Najeh Nehme

Date: 22.04.2024

Signature:

جامعة الفرات الاوسط التقنية
شعبة ضمان الجودة وتقويم الاداء
المعهد التقني / النجف

Approval of the Dean

Abrof. Dr. Haider Hassan Abdel Hussein

1. Program Vision

Distinction and modernity in qualifying technical cadres in the field of civil technologies scientifically and practically to meet the needs of the labor market.

2. Program Mission

Preparing scientifically and practically qualified human cadres in the field of civil engineering techniques capable of competing in the labor market in accordance with approved international quality standards and development in the field of construction and urbanization.

3. Program Objectives

1- Working to develop technical work through developing curricula, modernizing laboratories in accordance with internationally approved good laboratory standards, and involving department members in specialized qualification courses.

2- Contributing to community service by holding courses and workshops in various civil engineering applications and promoting construction and construction activities at a high level of quality.

3- Exchanging theoretical and practical technical expertise with technical institutes and colleges with corresponding specializations and the labor market in the private sector.

4-Providing a stimulating environment for learning and training.

5- Providing engineering and technical consultations to all departments and institutions of the state and the private sector.

4. Program Accreditation

ABET accredited certification program

5. Other external influences

Private and government sector work projects

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**2**			
College Requirements	**4**			
Department Requirements	**16**			
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	
The first stage	_	Concrete materials	**theoretical**	**practical**
The second stage	_	Soil mechanics	**theoretical**	**practical**

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1- Acquiring theoretical and practical knowledge in various scientific curricula in civil engineering specializations. 2- Reading various plans, drawings and designs in engineering specializations. 3- Conducting theoretical calculations for various issues in the field of specialization.	Learning Outcomes Statement 1

4- Conduct on-site soil investigation.	
Skills	
Learning Outcomes 1-Field and laboratory tests of soil. 2- Classification of soils based on their external appearance. 3-Physical soil calculations	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Lecture - laboratory - educational trips - summer methodological training - student projects.

10. Evaluation methods

1- Oral exams 2- Written exams 3- Semester exams 4- Final exams 5- Daily evaluation.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Hussein Ali Muhammad	Civil Engineering	Civil Engineering			✓	
Munqidh Sadiq Muhammad	Soil and foundation engineering	Soil and foundation engineering			✓	

Marwa Hamid Abdullah	Civil Engineering	Civil Engineering			✓	
Marwa Fouad Manhar	roads and bridges	roads and bridges			✓	
Zainab Ahmed Abdel	Water resources	Water resources			✓	
Raghad Mahdi Muslim	Urban planning	Sustainable city planning				a contract
Doaa Muhammad Abd Zaid	English	English			✓	

Professional Development

Mentoring new faculty members

Directing is done through direct meetings and meetings with the department head or direct manager

Professional development of faculty members

Academic and professional development for faculty members takes place through courses and workshops held inside and outside the department, conferences, and scientific research.

12. Acceptance Criterion

The central admission system is set by the Ministry and is subject to the institute's differentiation according to the secondary, vocational and preparatory school rates.

13. The most important sources of information about the program

1- Scientific curricula determined by the specialized sectoral committees of the Technical Education Authority.

2- Amendments proposed by subject teachers at a rate not exceeding 20% of the prescribed curriculum and according to the requirements of the labor market and the accredited scientific development taking place in the world currently.

3- ABET Academic Accreditation Program.

14. Program Development Plan
1- Working to develop technical education through developing curricula, modernizing laboratories in accordance with internationally approved good laboratory standards, and engaging the department's members in specialized qualifying courses. 2- Contributing to community service by holding courses and workshops in various civil engineering applications and advancing the construction and reconstruction movement at a high level of quality. 3- Exchanging theoretical and practical technical expertise with technical institutes and colleges with corresponding specialization and the labor market in the private sector. 4- Providing an appropriate stimulating environment for learning and training. 5- Providing engineering and technical consultations to all state departments and institutions and the private sector. The department aims to graduate technical personnel qualified to carry out implementation work related to the fields of civil engineering, such as drawing and implementing plans, monitoring road projects and construction projects, conducting laboratory and field tests, surveying, and calculating quantities and dimensions of civil works projects.

Program Skills Outline

Course Code	Course Name	Basic or optional	Required program Learning outcomes									
			Knowledge				Skills				Ethics	
			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2
Construction materials	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engineering mechanics	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Space (1)	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concrete materials	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
mathematics	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Calculator Apps (1)	help		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engineering drawing	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Factories	help		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Human rights and democracy	General		✓	✓	✓	✓	✓					✓
Technical English	help		✓	✓	✓	✓	✓					✓
Concrete technology	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Construction techniques	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soil mechanics	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Civil drawing	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Area (2)	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Construction machines	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Calculator Apps (2)	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quantity	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

surveying													
Buildings and factory construction	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The project	Basic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
English	help		✓	✓	✓	✓					✓	✓	✓

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

Notes	Material type	number of units	The number of hours			Subject	T
			M	A	n		
	Specialized	8	4	2	2	Construction materials	1
Taught in English	Specialized	6	3	1	2	Engineering mechanics	2
	Specialized	8	4	2	2	(Space (1	3
	Specialized	6	3	2	1	Concrete materials	4
Taught in English	Specialized	6	3	-	3	mathematics	5
	help	6	3	2	1	(Calculator Apps (1	6
	Specialized	12	6	6	-	Engineering drawing	7
	help	6	3	3	-	Factories	8
	General	4	2	-	2	Human rights and democracy	9
	help	2	1	-	1	Technical English	10
		64	32	18	14	the total	

First academic year
(Study plan suggested)

Course Description Form(1)

Course Name .1
The first stage - Concrete materials
Course Code .2
-
Semester/year .3
annual
Date this description was prepared .4
2024_2_19
Available attendance forms .5
practical – Theoretical
(Number of study hours (total)/number of units (total .6
6 / weekly 3
(is mentioned Name of the course administrator (if more than one name .7
:,Name: Raghad Mahdi Muslim email : raghad.muslim@atu.edu.com
objectives Course .8
Objectives of the study subject
• crete and mastering the Introducing the student to the materials that make up sical, mechanical and chemical properties of these materials and their effect on .concrete. The practical part includes the necessary tests for these materials • s it consists of, Introducing the student to the importance of concrete and the mate such as cement, aggregates, and additives • How to strengthen compressive strength using available devices • Conducting important laboratory tests for concrete
Teaching and learning strategies .9
• and examine them Take the forms from the site in the laboratories • Conducting theoretical and practical .calculations for various issues in the field of expertise • .site investigation of concrete-Conduct on- — he strategy

Course structure .10

Study plan (suggeste)
First academic year

valuation method	earning method	Name of the unit or topic	Required learning outcomes	ours	he week
+ral exams	ecture + practical	General principles about concrete its definition,)	General principles of concrete		he first

ditorial	examples + laboratory	composition, terminology, .(and properties			nd the second
		Portland cement, its manufacture, chemical composition, .and types	Port land cement		he third nd the fourth nd the fifth
		Other types of cement (natural ,cementexpanding cement aluminum , cement) and specifications of each .type	Typ es of cement		I
		Cement properties: smoothness, weight loss by combustion, cement stability, heat of .hydration	Ce ment properties		eventh nd the eighth
		Completion of cement properties: initial and final setting time, compressive .strength, tensile strength	Co the mplementing properties of cement		inth nd the tenth
		Aggregates: classification of aggregates, methods for taking models, shape of texture particles, surface of particles, durability of .aggregates	Agg regate		leventh
		Mechanical properties of aggregate: specific gravity, unit) weight of compacted and ,unconsolidated gradation, porosity, ability to absorb, abrasion, sand -corrosion .(swelling	Agg regate	5	welveth nd the thirteent h nd the fourteen th nd the fifteenth nd the sixteenth

		The proportion of salts, organic materials and clay materials in the aggregate, especially sand, interaction with .lsalkaline materia	Aggregate		eventeenth nd the eighteenth
		Light and heavy aggregate: Types of lightweight agg. Natural) and artificial), advantages and disadvantages of light aggregate compared to .ordinary aggregate	Aggregate		ineteenth nd the twenty
		Specifications of light aggregate used in structural concrete, specifications of light aggregate used in insulating concrete, and specifications of light aggregate used in the production of concrete .blocks	Aggregate		st1 -wenty second
		Uses of ,silicasilica fume, and fly ash in concrete production in terms of .specifications and effects	Aggregate		wenty third
		Water used in concrete production: mixing water, curing water, and specifications .of each type	Water used in concrete production		wenty fourth
		Fibers used in concrete (types, .(specifications	Fibers used in concrete		th5
		Admixtures for concrete : types and reasons for using each type (mixing water reducing admixtures, ,delay admixtures accelerating admixtures, operational improvement admixtures, refining freeze -admixtures, anti .admixtures	Additives for concrete		-wenty sixth he -twenty seventh
		Chemical composition of the additives, homogeneity of	Chemical composition of additives		-wenty eighth

		the substance, checking the specific gravity of the additives, examining the remaining residues by drying for liquid additives, examining the remaining residues by drying for solid additives, and the specifications for .that			he -twenty ninth
		Physical requirements for concrete admixtures according to standard specifications the permissible amount) to delay the setting time for delaying materials and the permissible time for acceleration for accelerating materials …… .(..	Phy sical requirements for concrete admixtures		hirty

evaluation Course .11

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

Learning and teaching resources .12

-Website of the Technical Institute Najaf	Required textbooks (methodolog (if any
of Laboratory Book -1 Tests for Concrete Technology (Haqqi (Zubaidi-Ismail Mohsen, Suad Abbas Al Concrete Book -2 (Khalaf-Muayad Nouri Al) Lectures given by -3 .the professor Related sources and -4 books in Arabic, English, and the .Internet	(Main references (sources
of Laboratory Tests for Book Concrete Technology (Haqqi Ismail Mohsen, (Zubaidi-Suad Abbas Al	Recommended supporting books and references (scientific journals, (....reports
Internet sites	Electronic references, Internet sites

Course Name .13
first stage - materials Construction
Course Code .14
-
Semester/year .15
annual
Date this description was prepared .16
2024_2_19
Available attendance forms .17
practical – Theoretical
(Number of study hours (total)/number of units (total .18
8 / weekly 4
(Name of the course administrator (if more than one name is mentioned .19
: Yamil Al Muhammad Munqidh Sadiq :Namedr.mohammed.isa@atu.edu.iq
objectives Course .20
subject Objectives of the study
• mastering the physical, construction materials Introducing the student to hanical and chemical properties of these materials and their effect on concrete. The practical part includes the necessary tests for these materials. • How to strengthen compressive strength using available devices. • Conduct important laboratory tests for these materials.
Teaching and learning strategies .21

The strategy	
the student to carry out standard tests to determine the Qualifying construction materials conform to specifications and extent to which determine the possibility of using them in construction, which ensures strength, safety and economy.	

Course structure .22

(Study plan (suggested

First academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	A general description of the physical properties and standard specifications of building materials and their uses in buildings.	of Knowledge physical properties Standard for building materials and their uses	4	the first
=	=	Clay bricks and methods of making them.	Block industry	4	the second
=	=	Properties, uses and specifications of clay bricks.	Clay bricks	4	the third
=	=	Tests for clay bricks.	of tests Knowledge for clay bricks.	4	the fourth
=	=	Limestone bricks, glass bricks, properties and manufacturing methods.	Properties and of manufacture limestone bricks and glass bricks	4	Fifth
=	=	concrete blocks -Concrete blocks	Properties and	4	VI

		properties and manufacturing) method, explaining the difference .(between the two	Concrete making concrete -blocks blocks		
=	=	Thermostone, its properties, and .manufacturing methods of	Properties and making Thermostone	4	Seventh
=	=	Discussing the visit to the brick .factory	work Brick factory	4	The price
=	=	its classification -Building stone .and types	Classification and Building types stone	4	Ninth
=	=	stone according Uses of building .to its types	Uses of building stone	4	The tenth
=	=	Bonding materials and their .types	Types of bonding materials	4	atheistic ten
=	=	Materials that resist moisture -cement mortar, cement mortar) ,Noora), Noora, how to make it its properties	Materials that resist moisture	4	twelveth
=	=	Bonding materials that are not resistant to moisture (plaster), .properties and manufacture	Bonding materials that do not resist moisture	4	Thirteenth
=	=	their types -Gypsum products and properties, secondary ceiling .materials and their types	for They are gypsum products And properties Secondary roofing their materials and types	4	fourteenth
=	=	Application materials, tiles, tiles .and their types	Application materials, tiles, tiles and their types	4	Fifteenth
=	=	-Manufacturing methods .joints -application method	Manufacturing -methods application method .joints -	4	sixteen
=	=	preventing materials, -Moisture .reasons for use their types and	-Moisture preventing materials, their types and reasons .for use	4	seventeenth
=	=	Materials that prevent high humidity, their types, .manufacturing methods and uses	Materials that prevent high humidity, their types, manufacturing .methods and uses	4	eighteen
=	=	flexible and flexible -Semi repellent materials, -moisture their types, uses, manufacturing -remethods, and liquid moistu .repellent materials	flexible and -Semi -flexible moisture repellent materials, their types, uses, manufacturing	4	nineteenth

			methods, and liquid repellent -moisture .materials		
=	=	Epoxy, its definition, properties, types, and uses	Epoxy, its definition, properties, types, and uses	4	The twentiet h
=	=	and its origin, types used -Wood .methods of using it	its origin, -Wood types used and .methods of using it	4	Twenty first-
=	=	Wood drying methods and wood .defects	Wood drying methods and wood .defects	4	twenty tow
=	=	-Metals (ferrous and non and their (ferrous materials .uses in buildings	ferrous and) Metals ferrous -non materials) and their .uses in buildings	4	twenty third
=	=	Iron, methods of making it, its .types and uses	methods of , Iron making it, its types .and uses	4	twenty fourth
=	=	.Thermal insulation materials	Thermal insulation .materials	4	th25
=	=	.Dyes	.Dyes	4	th27
=	=	. the glass	. the glass	4	Twenty - eighth
=	=	Asphalt, properties of asphalt .materials	Asphalt, properties of asphalt .materials	4	XXIX
=	=	Types of asphalt and its uses in .construction works	Types of asphalt and its uses in .construction works	4	thirty

Course evaluation .23

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

Learning and teaching resources .24

(any Required textbooks (methodology, if	Najaf -Website of the Technical Institute
(Main references (sources	/ 1986 / Building Construction Book -1 University of Baghdad Levon and Zuhair Written by: Ertin Sako Building Construction and Factory -2 Construction 1991/Technical Education -Prepared by: Adnan Al - Authority .Nuaimi-Dahan and Sarmad Fakhri Al

Book project (Construction Materials), written by: Jalal Sarsam / Technical .Education Authority	Recommended supporting books and (....references (scientific journals, reports
Internet sites	references, Internet sites Electronic

Course Description Form(3)

Course Name .25
First Stage - Engineering Mechanics
Course Code .26
-
Semester/year .27
annual
Date this description was prepared .28
2024_2_19
Available attendance forms .29
theoretical
(Number of study hours (total)/number of units (total .30
6 / weekly 3
(Name of the course administrator (if more than one name is mentioned .31
: email The / Marwa Hamid Abdullah :Namemarwah934@atu.edu.iq
objectives Course .32
Objectives of the study subject
General objective of the course: To teach the student to analyze the forces and loads exerted on bodies and extract the stresses and strains resulting from these forces and their .relationship to the materials that make up these bodies
Teaching and learning strategies .33

Analyzing structures and finding the forces and stresses in their parts as a result of external loads and their relationship to the dimensions various parts in engineering facilities so that they can withstand of the .the stresses placed on them safely and economically	The strategy

Course structure .34

(Study plan (suggested

First academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Definition of mechanics, general review of physics topics related to the subject, trigonometric ratios vector -of angles, vector and non .quantities	A general review of physics topics related to the topic	3	the first
=	=	Analysis and synthesis of forces,	analyze and How to	6	the

		the law of the force triangle and the force polygon .	synthesize forces		second And the third
=	=	.Power torque	.to God be Glory	3	the fourth
=	=	.Doubles	.Doubles	3	Fifth
=	=	-The resultant of convergent, non .convergent, and parallel forces	Knowing the resultant of forces different	6	VI And the seventh
=	=	A .spread weights	the Scooping over .spread weights	3	VIII
=	=	Equilibrium, drawing a free body diagram, equilibrium equations, equilibrium in the case convergent, -of convergent, non .and parallel forces	and ,Balance force drawing diagrams	6	Ninth And the tenth
=	=	Types of tributaries, types of .sand, balance in tributaries	the Feeding on types of tributaries, supports, types of and balance in the .tributaries	3	eleventh
=	=	Gables, analysis of gables using .joints and sections	analyze How to gables using joints .and sections	6	twelveth The thirteenth
=	=	Friction, nature of friction, theory of friction, laws of friction, ,types of friction general .application	Theory of friction, laws of friction, types of friction, general applications .	6	fourteenth And the fifteenth
=	=	Centers of gravity of simple and complex geometric shapes and .their applications	gravity Centers of of simple and complex geometric shapes and their .applications	6	Sixteenth and seventeenth
=	=	Moment of inertia of simple and complex geometric shapes and .their applications	the Knowledge of moment of inertia of simple and complex shapes geometric and their .applications	6	eighteen And the nineteenth
=	=	Introduction to the resistance of materials, definition of stresses .types, safety factor and their	Resistance of and types materials of stresses	3	The twentieth
=	=	.Applications to stress	Applications to .stress	3	st21
=	=	Strain, Hooke's law, the .relationship of strain to stress	Strain, Hooke's law, the relationship of	3	twenty tow

			.strain to stress		
=	=	,Lateral strain Poisson's ratio, .applications to strain and stress	Lateral strain, Poisseau ratio , applications to .strain and stress	3	twenty third
=	=	Shear and bending moment diagrams for bridges, how to compose with shear and .bending moment changes	Shear and bending moment diagrams for bridges, how to form equations for changing shear and .ng momentsbendi	3	twenty fourth
=	=	Applications to drawing shear and bending moment equations for bridges	Applications to drawing shear and bending moment equations for bridges	3	th25
=	=	Bending stress of bridges and .their applications	Bending stress of bridges and their .applications	6	-twenty sixth The -twenty seventh
=	=	Shear stress of bridges and their .applications	Shear stress of bridges and their .applications	3	-Twenty eighth
=	=	Bridges made of two different .materials and their applications	bridges Identify made of two different materials and their .applications	6	XXIX And the thirty

Course evaluation .35

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

Learning and teaching resources .36

Najaf -Website of the Technical Institute	**(Required textbooks (methodology, if any**
Source: Civil Engineering and Engineering Mechanics, Part One / Prof. Mazen Taha, M. Muhammad Amin, M.M. Maher Omar	**(sources) Main references**
	Recommended supporting books and (....references (scientific journals, reports
sites Internet	**Electronic references, Internet sites**

Course Description Form(4)

Course Name .37
The first stage - (Space (1
Course Code .38
-
Semester/year .39
annual
Date this description was prepared .40
2024_2_19
Available attendance forms .41
practical - Theoretical
(Number of study hours (total)/number of units (total .42
8 / weekly 4
(Name of the course administrator (if more than one name is mentioned .43
:address email The Mohammed Munqidh Sadiq :Na dr.mohammed.isa@atu.edu.iq
objectives Course .44
Objectives of the study subject
General objective of the course: To teach the student the basics of surveying, its use for civil engineering purposes, and conducting calculations related to it
Teaching and learning strategies .45

Qualifying the student to use various surveying equipment for civil engineering work and implementing maps for projects and enabling him to .plan, supervise and implement these projects	strategy The

Course evaluation .46	
according to the tasks assigned to the student, such as daily Distribution of the grade out of 100 .preparation, daily, oral, monthly, written exams, reports, etc	
Learning and teaching resources .47	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
Construction Surveying book -1 written by: William Irvin Engineering Survey, Ministry of -2 Higher Education and Scientific Research, Basra University, Basra College of Engineering	(references (sources Main
	Recommended supporting books and (....journals, reports references (scientific
Internet sites	Electronic references, Internet sites

Course Description Form(5)

Course Name .48
first stage - Mathematics
Course Code .49
-
Semester/year .50
annual
Date this description was prepared .51
2024_2_19
Available attendance forms .52
theoretical
(Number of study hours (total)/number of units (total .53
6 / weekly 3
(Name of the course administrator (if more than one name is mentioned .54
:Ami - Al Zainab Ahmed :Nameengi.zainab33@atu.edu.iq
objectives Course .55
Objectives of the study subject
Developing the student's ability to use mathematics in practical applications and benefit .from it in other engineering lessons
Teaching and learning strategies .56

different ways of representing equations, The student learned the mathematical laws, and various data by forming curves in a graph and using different types of diagrams that suit the purpose of .drawing them	The strategy

Course structure .57

(Study plan (suggested

First academic year

Evaluation method	Learning method	Name of a unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Matrices, determinants, and their .properties	Matrices	3	the first
=	=	Solving linear equations, Cramer's method, applications to determinants, solving force .analysis equations	Solve linear equations	3	the second
=	=	Vectors, vector analysis, vector and scalar quantities, vector	.Vector analysis	3	the third

		algebra, arithmetic operations for .in space vectors			
=	=	Unit of orthogonal vectors, vector scale, scalar and cross multiplication, applications of vectors, calculation of torque .applications, work	Orthogonal vector unit	3	the fourth
=	=	Function, trigonometric functions and trigonometric relationships, logarith function .	Trigonometric functions	6	Fifth
=	=	Exponential function, hyperbolic .functions, their applications	Exponential function	3	VI
=	=	Objectives, the objective of algebraic and trigonometric functions, applications to the .objective	The purpose of functions	3	Seventh
=	=	.Sequences	.Sequences	3	VIII
=	=	Differentiation, derivative, derivative of algebraic functions, .chain rule	differentiation	3	Ninth
=	=	Curvilinear functions, standard derivative function of higher .order	Curvilinear functions	6	The tenth
=	=	Derivative of trigonometric functions, derivative of .logarithmic functions	Derivative of trigonometric functions	3	eleventh
=	=	Derivative of exponential function, derivative of hyperbolic .functions	The erivative of the exponential function	3	twelveth
=	=	Applications of the derivative, the tangent and perpendicular equation, speed, acceleration, and .magnification	Derivative applications	3	Thirteenth
=	=	.Exponents and logarithms	Exponents and .logarithms	3	fourteenth
=	=	General physical and engineering .applications, drawing functions	General physical and engineering applications, drawing .functions	3	Fifteenth
=	=	Integration, indefinite integration, integration of algebraic and logarithmic .functions	integration	3	sixteen
=	=	Integration of exponential and .trigonometric functions	Integration of exponential and trigonometric .functions	3	seventeenth
=	=	Definite integration, applications of definite integration, area under the curve, area between	Definite integral	3	eighteen

		.two curves			
=	=	.Rotational volumes, arc length	Rotational volumes	3	nineteenth
=	=	Application of and physics engineering (work, torque, .(momentum, moment of inertia	Physical and engineering applications	3	and Ten n
=	=	General methods of integration, including substitution and .division	General methods of integration	6	-Twenty first and - twenty second
=	=	,Use partial exponential, and .logarithmic fractions	Use partial, exponential, and logarithmic .fractions	3	twenty third
=	=	thods in Numerical me integration, the trapezoid rule, the rule (calculating the volume of soil quantities and the area of .(longitudinal sections	Numerical methods in integration, the trapezoid rule, the rule (calculating the volume of soil quantities and the area of longitudinal .(sections	3	twenty fourth
=	=	Solving discrete, homogeneous, and linear differential equations with their various applications .within the field of specialization	Solving discrete, homogeneous, and linear differential equations with their various applications field of within the .specialization	3	th25
=	=	r lowest Finding the highest o .point of a vertical curve	Finding the highest or lowest point of a vertical .curve	3	-twenty sixth
=	=	Complex numbers, addition, subtraction, multiplication, .division	Complex numbers, addition, subtraction, multiplication, .division	3	th27
=	=	Polar formula, converting the polar formula to algebraic and vice versa, powers and roots, .representing roots graphically	Converting the polar formula to algebraic and vice versa	3	-Twenty eighth
=	=	Statistical operations, frequency distributions, histogram, curve, arithmetic frequency mean, range, standard deviation, .variance and proportion	Statistical operations	3	-Twenty nine thirtieth

Course evaluation .58	
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily .reports, etc ,preparation, daily, oral, monthly, written exams	
Learning and teaching resources .59	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
	(Main references (sources
methodological book and the booklet on The methodological issues	Recommended supporting books and (....references (scientific journals, reports
Internet sites	Electronic references, Internet sites

Course Description Form(6)

Course Name .60					
first stage - (Calculator applications (1					
Course Code .61					
-					
Semester/year .62					
annual					
Date this description was prepared .63					
2024_2_19					
Available attendance forms .64					
practical -Theoretical					
(Number of study hours (total)/number of units (total .65					
6 / weekly 3					
(is mentioned Name of the course administrator (if more than one name .66					
Name: :Marwa Hamid / Emailmarwah934@atu.edu.iq					
objectives Course .67					
Objectives of the study subject					
Introducing the student to the calculator with an idea about its prospects and use in various fields and the principles of programming and providing him with skill in using the calculator to implement programs previously prepared for application in his field of specialization.					
Teaching and learning strategies .68					
The strategy	Windows operating system , theAuto Cad drawing program , theMicros Word printing program , andExcel .				
Course structure .69					
(Study plan (suggested					
First academic year					
Evaluation method	Learning method	Name of the unit or topic	Required learning	hours	the week

			outcomes		
Oral +exams Editorial	Lecture + practical examples	Windows operating system : The concept of the Windows system, its advantages and basic requirements, operating the system, components of the maindesktop screen , the concept of theicon how to , deal with mouse activities, the importance and components of the TaskBar making use of , Start to enter programs, exiting the system and turning) .off the calculatorShut Down .(	Windows operating system	3	the first
=	=	The concept of the window for program and identifying any its main components, dealing) :with desktop icons such as My Documents ; My Computer; Recycle Bin .(Desktop the , main screen concept of theicon how to , deal with mouse activities, the importance and components of the TaskBar using ,Start to enter programs, exit the system and turn off the) calculatorShut Down .(	Window concept for any program	3	the second
=	=	) Getting to knowMy Computer in terms of disks, (folders and files, how to deal y disks with formatting flopp and copying folders and files, taking advantage of cutting and pasting and knowing the properties of disks, folders and files, dealing with the trash and how to delete and retrieve files through what the trash .can provides in this aspect	) IdentifyMy Computer in (,terms of disks	3	the third
=	=	Autocad program , getting to know the program, where its name comes from, the importance of the program and the contents of the program window, and how to .create a new file and store it	Autocad program	3	the fourth
=	=	How to select most AutoCAD commands	How to select most AutoCAD commands	3	Fifth

=	=	Toolbars in AutoCAD, how to hide and show them, and customize a special interface for the program	Toolbars in AutoCAD	3	VI
=	=	) Status barGrid, Ortho, Snap, ..., etc. (	) Status bar Grid, Ortho, Snap, ..., etc. (	6	Seventh and eighth
=	=	Auxiliary commands and) panel limitsLimits, Units, Zoom (	Auxiliary commands and) panel limits Limits, Units, Zoom (	6	The ninth and tenth
=	=	Basic drawing commands Draw menu	Basic drawing commands Draw menu	12	Eleventh - fifteenth
=	=	Modify menu commands	Modify menu commands	15	xx-xvi
=	=	Text commands with Dimension commands	Text commands withDimension commands	6	xxii-xxii
=	=	Microsoft Word printing program, how to run it and write with it, how to store it, change font types, modify the paper in terms of margins or flip the paper, use tables, and .print within them	Microsoft Word printing program	12	-Twenty -third -twenty sixth
=	=	Microsoft Excel program , how to run it, download numerical values in columns and store, add new columns or rows, and apply some functions such as addition and other mathematical .operations	Microsoft Excel program	12	-Twenty -seventh thirtieth

Course evaluation .70	
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	
Learning and teaching resources .71	
(Required textbooks (methodology, if any	Najaf -Website of the Technical Institute
(references (sources Main	by Nasser Hassan book3D AutoCAD -1 Ismail 3d max blue box -2020 revit model -2 design iteration turn the page based Lectures given by the professor -3 . on practical experience Scientific competition between students based on ,through drawings on AutoCAD .creativity and distinction
Recommended supporting books and	

	(....references (scientific journals, reports
Internet sites	Electronic references, Internet sites

Course Description Form(7)

Course Name .72
The first stage - Engineering drawing
Course Code .73
-
Semester/year .74
annual
Date this description was prepared .75
2024_2_19
Available attendance forms .76
practical
(study hours (total)/number of units (total Number of .77
12 / weekly 6
(Name of the course administrator (if more than one name is mentioned .78
: leans one The / Marwa Fouad Manhar : Name Marwa22312@atu.edu.iq
objectives Course .79
Objectives of the study subject
Teaching the student the basic principles of engineering drawing and computer drawing .programs in an efficient and rapid manner, to enable him to express his ideas through it
: Teaching and learning strategies .80

draw and read engineering maps with knowledge of the Qualifying the studen .architectural and construction terms used in maps	The strategy

Course structure .81

(Study plan (suggested

First academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
+Oral exams Editorial	Lecture + applied examples	basics Engineering drawing, tools Used, installing the board, types of fonts, writing in geometric calligraphy	basics Engineering drawing	6	the first
=	=	Geometric operations, bisecting a line segment, bisecting an angle, connecting a straight line with a circle with an arc,	Engineering operations	6	the second

		connecting two straight lines with an arc, drawing an equal triangle Polygon, pentagon, hexagon, straight line tangent to two inside and outside, circles arc tangent to two circles inside and outside			
=	=	Ellipse, drawing application Shapes Engineering using basic engineering processes	Ellipse	6	the third
=	=	principles Projection, placement method Dimensions On drawing, exercises on projection	principles Projection	6	the fourth
=	=	Isometric perspective drawing	Perspective drawing	*6*	Fifth
=	=	finding The missing projection with isometric perspective drawing	finding The missing projection with isometric perspective drawing	6	VI
=	=	Clips	Clips	6	Seventh
=	=	AutoCAD applications, redefining the relationship between the AutoCAD program and its use in dimensional -creating two) drawings2D) .and ( ) dimensional-three3D (and open a new page in the program, specify the) drawing areaLimits ,(draw a panel frame and a data table, while applying writing inside the data table)Text(	AutoCAD applications	6	VIII
=	=	Recognition Species Fonts and method Obtain it and use it in a program autocad from By placing it in multiple layersand colors Different and different thickness(Line weight)	Recognition Species lines	6	Ninth
=	=	fee Shapes Engineering Fundamental, triangle, pentagon, hexagon and	fee Shapes Engineering the basic	6	The tenth

		general, polygons in ellipse, connecting two lines with a circle sector, connecting two circles with an arc by CircleTtr directs a straight line to a circle with an arc in the same way			
=	=	fee shapes Engineering vehicles and mechanical parts (applications to (engineering processes	fee shapes Composite engineering	12	Eleventh and twelfth
=	=	fee Falls For shapes Stereoscopic and placement Dimensions on it using multiple layers.	fee Falls For shapes Stereoscopic	12	Thirteenth And the fourteenth
=	=	fee Falls For shapes Stereoscopic using colors Different lines and different thicknesses by changing the properties.	fee Falls For shapes Stereoscopic using colors Different fonts	3	Fifteenth
=	=	Find the missing projection and continue drawing the projections	Finding the lost location	6	sixteen
=	=	situation Extras On) graphicsHatch & gradient and how to add ,(additional patterns to the program from external sources	situation Extras On fees	6	seventeenth
=	=	Drawing a solid shape usingthe Isometric snap method	Drawing a solid shape usingthe Isometric snap method	12	eighteen And the nineteenth
=	=	Draw sections in the same way(Isometric snap)	Draw sections in the same way (Isometric snap)	6	The twentieth
=	=	How to duplicate shapes) using the command Polar array &array Rectangular (	How to repeat shapes	6	twenty one
=	=	How to makea block to repeat geometric shapes and how to store and recall them	Block method	6	twenty tow
=	=	Draw an integrated panel containing Species The drawings are(2D) and (3D) and contain a data table and an explanation	Drawing an integrated panel	12	-Twenty third and -twenty fourth

		of the drawings.			
=	=	View method Shapes Different scenes on one screen using view ports command	View method Shapes	6	th25
=	=	How to transfer graphics between files and how to open more than one file using thewindow command)(	How to transfer graphics between files	6	-twenty sixth
=	=	Individualizing geometric prism, ,shapes (cube (pyramid	Individualizing geometric shapes	6	th27
=	=	Individualizing geometric shapes (truncated (pyramid, cone	Individualizing geometric shapes	6	-Twenty eighth
=	=	Dealing with the drawing scale and printing method using theplot command (	Dealing with scale drawing	6	XXIX
=	=	How to export drawings fromdwg format to (pdf) As well as(psd) to create virtual printers	How to export drawings	6	thirty

Course evaluation .82	
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily .daily, oral, monthly, written exams, reports, etc ,preparation	
Learning and teaching resources .83	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
	(Main references (sources
Systematic engineering drawing book	Recommended supporting books and (....journals, reports references (scientific
Internet sites	Electronic references, Internet sites

Course Description Form(8)

Course Name .84
first stage - Laboratories
Course Code .85
-
Semester/year .86
annual
Date this description was prepared .87
2024_2_19
Available attendance forms .88
practical
(Number of study hours (total)/number of units (total .89

6 / weekly 3
(Name of the course administrator (if more than one name is mentioned .90
:Asaad Abdel Zahra / Email : Namewww.eng.asaad65@gmail.com
objectives Course .91
Objectives of the study subject
Acquiring the manual skill in using hand tools, measuring tools, and operating machines necessa .building and construction specialization to prepare the student as a technician in the
Teaching and learning strategies .92

Acquiring the manual skill in using hand tools, measuring tools, and operati machines necessary to prepare the student as a technician in the building a .construction specialization	The strategy

Course structure .93

(Study plan (suggested

First academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples	safety: general Industrial rules for accident prevention, health care equipment and methods of .using them	Industrial Safety	6	the first And the second
=	=	Carpentry: The basic principles of carpentry the use of hand models and off saw, jigsaw, -tools (cut .(hammer, planer, drill, file	Carpentry	6	the third And the fourth And the fifth
=	=	Use of band saw machines, disc machines, planers, and .press machines	Using a saw machine	3	VI
=	=	Filing: Training students and using on filing work measuring tools, files, automatic sawing devices , .hooks, and drills	The filings	6	Seventh And the eighth
=	=	Lathe: Using different lathes, lathe operations plane, internal draw,) .(different tooth work	Lathing	*6*	Ninth And the tenth
=	=	safety Plumbing: industrial in casting, molds, mold formation, and plumbing .work steps	Plumbing	3	eleventh
=	=	Welding: A. Occupational safety and security .precautions B. Used tools and	Welding	15	twelveth And the thirteenth

		safety industrial .equipment C. Types of welding (gas, ultrasonic, pressure welding, electric arc .(welding			And the fourteenth And the fifteenth And the sixteenth
=	=	Metal cutting and bending: used Devices and machines in cutting and bending metal sheets and .reinforcing steel bars	Devices and machines used in cutting and bending metal .sheets and rebar	6	seventeenth And the eighteenth
=	=	Plumbing: Training the student on the rolling mill machine and the process of .planning on plates	Plumbing	6	nineteenth And the twenty
=	=	Measurement processes and tools used (tape, .(vernier, micrometer	Measurement operations	6	st21 -Twenty second
=	=	Practical applications for carpentry works for civil :constructions, including	Practical applications for woodworking	3	twenty third
=	=	Work: Wooden doors press doors, packing) .(doors	wooden a job doors	3	twenty fourth
=	=	.Work: wooden molds	Work: wooden molds	3	th25
=	=	Applications on reinforcing steel, making roof, bridge and column reinforcement cutting iron, bending iron) .(and welding pieces	Applications to reinforcing steel	6	-twenty sixth The -twenty seventh
=	=	Exercises on cutting and joining structural steel using rivets, screws, and .welding	Exercises on cutting and joining steel	6	-Twenty eighth The -twenty ninth
=	=	plastering Stone and works: cutting, sawing, .smoothing, perforation	Stone and stone works	3	thirty
Course evaluation .94					
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					
and teaching resources Learning .95					
Najaf -Website of the Technical Institute			(Required textbooks (methodology, if any		
/ 1986 / Building Construction Book -1 University of Baghdad Levon and Zuhair Written by: Ertin Sako			(Main references (sources		

Building Construction and Factory -2 Construction 1991/Technical Education -Prepared by: Adnan Al - Authority .Nuaimi-Dahan and Sarmad Fakhri Al	
	Recommended supporting books and (....references (scientific journals, reports
Internet sites	sites Electronic references, Internet

Course Description Form(9)

Course Name .96	
first stage - Technical English	
Course Code .97	
-	
Semester/year .98	
annual	
Date this description was prepared .99	
2024_2_19	
Available attendance forms .100	
theoretical	
(Number of study hours (total)/number of units (total .101	
2 / weekly 2	
(Name of the course administrator (if more than one name is mentioned .102	
: NameDoaa Doaa.zaid@atu.edu.iq : Email / Muhammad Abd Zaid	
objectives Course .103	
study subject Objectives of the	
The student reviews the basic, simplified rules of the English language that he had previously studied in the previous stages, but at length, as well as gradually introducing the student to the civil specialization in its various branches atmosphere of technical terminology related to.	
Teaching and learning strategies .104	
a . The theoretical part represents40% of the total allocated hours, equivalent to 12 .weeks B: The practical part represents60% of the total hours allocated, which is equivalent to8 .weeks	The strategy

Week	Sylibus
First	A/ pronunciation: voiceiess consonants B/ elements of sentence structure C/ patterns of sentences
Second	A/pronunciation : voiceless consonants (ii) B/ the part of speech:

	1.nouns 2.verbs 3. Adjectives 4. Adverbs
Third	A/ pronunciation : voiced consonants (I) B/ the parts of speech : 1. articles 2. Demonstratives 3. Pronouns 4. Prepositions 5. Conjunctions 6. Interjunctions
Forth	A/ pronunciation: voiced consonants (ii) B/ ciassification of verbs
Fifth	A/ pronunciation : pure vowels B/ pronouns (I)
Sixth	A/pronunciation :diphthongs B/pronounce (II)
Seventh	A/ types of questions B/genitives
Eghteth	A/ the present simple tense B/the present continuous tense C/ the present perfect tense
Nineth	A/ the past simple tense B/ the past perfect tense C/ future
Tenth	A/ active and passive voice B/ the number system in English
Eleventh	A/punctuation
Twelveth	A/business letters B/tenders
Thirteenth-Thirty	Comprehensive paragraphs about the branches of civil engineering
	Interpretation of the above mentioned paragraphs
	Extracting the technical terms
	Making an independent sentences by using the terms.
	Writing a composition using the terms related to the subject under discussion

Course evaluation .105	
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	
resources Learning and teaching .106	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
Headway English course for intermediate 2and beginners 1	(Main references (sources
	Recommended supporting books and (....reports ,references (scientific journals

Internet sites	Electronic references, Internet sites

(10) Course Description Form

Course Name .107	
The first stage - Human rights and democracy	
Course Code .108	
-	
Semester/year .109	
annual	
prepared Date this description was .110	
2024_2_19	
Available attendance forms .111	
theoretical	
(Number of study hours (total)/number of units (total .112	
4 / weekly 2	
(Name of the course administrator (if more than one name is mentioned .113	
: Amil- Al / Rida-Muhammad Abd Al :Name	
objectives Course .114	
Objectives of the study subject	
development in various eras, and the and Introducing the student to human rights, their goals role of international organizations and public opinion in respecting and protecting human .rights	
and learning strategies Teaching .115	
development in various eras, and the role of international organizations and public opinion in respecting and protecting human rights. and Introducing the student to human rights, their goals	The strategy
Course structure .116	
(plan (suggested Study First academic year	

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples	Human rights, their definition, and goals	General information about human rights	2	the first
=	=	The roots of human rights and their development in human history: human rights in ancient	Its development	2	the second

		and medieval times			
=	=	ancient Human rights in civilizations, especially the Mesopotamian civilization	Knowledge of human rights in ancient civilizations	2	the third
=	=	Human rights in divine laws, with a focus on human rights in . Islam	Knowledge of human rights in divine laws	2	the fourth
=	=	rights in the Middle Human Ages: Human rights in doctrines, schools, and political theories. Human rights in companies and their declarations, revolutions, and constitutions (English documents: the American the French -Revolution the Russian -Revolution .(tionRevolu	Knowledge of human rights in the Middle Ages	*2*	Fifth
=	=	rights in contemporary and international : modern history recognition of human rights since World War I and the .League/United Nations	rights in Human contemporary history	2	VI
=	=	Regional recognition of human rights: European Convention on Human Rights1950 American , Convention on Human Rights 1969 African Charter on , Human Rights1981 Arab , Charter on Human Rights1994 .	Regional recognition of human rights	2	Seventh
=	=	NGOs and human rights International Committee of the) Red Cross, Amnesty International, Human Rights (Watch	-Non governmental organizations and rights human	2	VIII
=	=	National human rights organizations	National human rights organizations	2	Ninth
=	=	Human rights in Iraqi constitutions between theory .and reality	Human rights in Iraqi constitutions between theory .and reality	2	The tenth
=	=	The relationship between human rights and public freedoms In the Universal -1 Declaration of Human Rights	The relationship between human rights and public freedoms	4	Eleventh and twelfth

		In regional charters and : national constitutions			
=	=	Necessary human rights and collective human rights	Essential human rights	2	Thirteenth
=	=	cultural Economic, social and human rights, civil human .rights and politics	Economic, social and cultural human rights	2	fourteenth
=	=	Modern human rights: facts in development, the right to a clean environment, the right to solidarity, the right to religion	Modern human rights	2	Fifteenth
=	=	Exercises on cutting and connecting structural steel, guarantees in constitutional oversight, guarantees in freedom of the press and public -non opinion, the role of governmental organizations in and protecting respecting .human rights	Exercises on cutting and linking guarantees in constitutional oversight	2	sixteen
=	=	Guarantees of respect and protection of human rights at the national level, guarantees in the constitution and laws, guarantees in the principle of .rule of law the	Guarantees of respect and protection of human rights	2	seventeenth
=	=	Guarantees, respect and protection of human rights at :the international level The role of the United Nations - and its specialized agencies in providing guarantees	Guarantees, respect and protection of human rights	2	eighteen
=	=	The role of regional organizations (the Arab League, the European Union, the African Union, the Organization of American States, the (ASEAN Organization The role of international, governmental-regional, non organizations and public opinion in respecting and protecting human rights	The role of regional associations	2	nineteenth
=	=	The general theory of freedoms: the origin of rights and freedoms, the project's position on declared rights and freedoms, the use of the term	The general theory of freedoms	2	The twentieth

		.general freedoms			
=	=	the The functional nature of concept of public freedoms: philosophical considerations of the functional right, structural considerations of the positive right, economic considerations .and public freedoms	The functional nature of the concept of public freedoms	2	st21
=	=	The legal rule of the state of law	the legal Identify of basis of the rule law	4	twenty tow And the twenty third-
=	=	Regulation of public freedoms by public authorities	Regulation of public freedoms by public authorities	2	twenty fourth
=	=	judicial -non Litigation or injustice	The concept of -litigation or non judicial injustice	2	th25
=	=	Judicial appeal, determining the state's responsibility for its legitimate actions	Judicial appeal	2	twenty sixth-
=	=	The impact of double judiciary on public freedoms Public freedoms under administrative jurisprudence	The impact – of double judiciary on public freedoms	2	th27
=	=	Equality: the historical development of the administrative concept	Historical development of the administrative concept	2	Twent -y eighth
=	=	modern development of the The idea of equality	The modern development of the idea of equality	2	XXIX
=	=	gender equality Equality between individuals according to their beliefs and race	Equality between and genders individuals	2	thirty

Course evaluation .117
the tasks assigned to the student, such as daily Distribution of the grade out of 100 according to .preparation, daily, oral, monthly, written exams, reports, etc
Learning and teaching resources .118

Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
There are no prescribed books, binding are used to study the subject	(sources) Main references
Suggested sources . Human Rights Book Dr. Hamid Hanoun -1 Book on Human Rights, Democracy and -2 Public Liberties, Dr. Maher Sabry . Kazem	Recommended supporting books and (....references (scientific journals, reports
Internet sites	Electronic references, Internet sites

(Study plan (suggested

second : Academic year

Notes	Material type	number of units	The number of hours			Subject	T
			M	A	n		
	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	(Area (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
	Specialized	4	2	2	-	The project	10
	help	2	1	-	1	English	11
		9 6	5 3	2 2	4 1	the total	

Course Description Form(1)

Course Name	.119
The second phase - Concrete techniques	
Course Code	.120
-	

Semester/year	.121
annual	
Date this description was prepared	.122
2024_2_19	
Available attendance forms	.123
practical -Theoretical	
(Number of study hours (total)/number of units (total	.124
8 / weekly 4	
(Name of the course administrator (if more than one name is mentioned	.125
:Aymil - Al /Marwa Fouad : Name Marwa22312@atu.edu.iq	
objectives Course	.126
the study subject Objectives of	
Teaching the student the basic principles of concrete components and their composition, the different methods of pouring and producing concrete on construction sites, the types of modern .rksconcrete, and the practical details of concrete wo	
Teaching and learning strategies	.127
Teaching the student the basic principles of concrete components and th composition, the different methods of pouring and producing concrete the practical details of concrete construction sites, the types of modern concrete, a .works	The strategy

Course structure .128

(Study plan (suggested

academic year Second

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral exams + Editorial	Lecture + practical + examples laboratory	general review of materials A used in concrete. Definitions: Regular concrete, reinforced place concrete, -in-concrete, cast premixed concrete, precast .concrete, prestressed concrete	Materials used in concrete	2	the first
=	=	Production and mixing of concrete, types of mixing, types of .mixers, mixing time	Concrete production and mixing	2	the second
=	=	Properties of fresh concrete: .workability and consistency Tests for fresh concrete: fluidity test, penetration test, precipitation test, compaction factor test, reshaping test with vibration and reciprocating vibration, and study of factors . .affecting workability	Soft concrete	4	the third the And fourth
=	=	Properties of fresh concrete: bleeding, separation, plastic	Properties of fresh concrete	4	Fifth the And

		shrinkage, and unit weight in .fresh concrete			sixth
=	=	The effect of air voids and ,methods of measuring them calculating unit weight, yield, cement agent in fresh concrete, density equation and absolute volume equation to calculate .concrete components	The effect of air voids and methods for measuring them	*4*	Seventh and VIII
=	=	Transporting, pouring and .concrete placing regular	Transporting, pouring and placing regular concrete	2	Ninth
=	=	Curing (curing) concrete, .pouring in hot and cold climates	Casting in hot and .cold climates	2	The tenth
=	=	Pumping concrete, properties of concrete in pumping, devices .used in pumping	Properties of concrete in pumping	2	elevent h
=	=	mixed concrete: its -Ready definition, benefits and mixer ,production methods . trucks and vibrating trucks	Ready mixed concrete	2	twelvet h
=	=	Resistance of hardened concrete, ,nature of concrete resistance .types of resistance	Resistance of hardened concrete	2	Thirtee nth
=	=	Concrete strength tests: compressive strength test, tensile strength test, (bending tensile test .(and splitting tensile test	Concrete resistance tests		fourtee nth
=	=	Factors affecting the strength of .hardened concrete Factors affecting the results of strength tests of hardened .concrete	Factors affecting the strength of concrete hardened	2	Fifteent h
=	=	Concrete shrinkage: drying shrinkage, differential shrinkage, .carbonation shrinkage	Concrete shrinkage	2	sixteen
=	=	Concrete additives: their definition, their benefits and uses, the main materials used in their composition, and the notes that .must be taken when using them	Additives for concrete	2	seventee nth
=	=	accelerators, : Types of additives retarders, plasticizers, air vacuum makers, silica dust,	Types of additives	2	eightee n

		bubblers, moisture preventers, .weight reducers...etc			
=	=	The -Design of concrete mixes: A .American method	Design of concrete mixes	2	ninetee nth
=	=	The -Design of concrete mixes: B .British method	concrete Design of mixes	2	The twentiet h
=	=	Applied issues for designing ordinary mixtures	Applied issues for designing ordinary mixtures	2	st21
=	=	issues for designing Applied .mixtures containing additives	Applied issues for designing mixtures containing .additives		twenty tow
=	=	destructive tests for -Non concrete: radiation methods, hardness methods, pulse methods .and resonance methods	destructive -Non tests for concrete	2	twenty third
=	=	Use offiberssuch as , In concrete .(fibers (plastic, glass, iron, wood	Use offibers	2	twenty fourth
=	=	The use of polymersin concrete, . polymeric concrete	Use ofpolymers	2	th25
=	=	block, :Special types of concrete heavy concrete, ,lightweight placed -pre , underwater concrete) aggregate concretePAC .(	Special types of concrete	2	-twenty sixth
=	=	Special types of concrete: High) Performance ConcreteHPC ,( ) High Strength ConcreteHSC ,( ) Self Compacting ConcreteSCC) Reactive Powder Concrete ,(RPC) Reinforced Concrete ,(RCC .(	Special types of concrete	4	th27 Twenty eighth-
=	=	Repairing, maintaining and treating concrete in buildings using some modern materials .fibres such as epoxy and carbon	Using some modern materials such as epoxy and carbon fibres	4	XXIX thirty

Course evaluation .129	
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	

Resources of learning and teaching-12 .130	
Najaf -Website of the Technical Institute	(methodology, if any) Required textbo
Jalal Bashir -Source: Concrete Technology -1 The Internet and related books in Arabic and -2 English	(Main references (sources
	Recommended supporting books and journals, references (scientific (....reports
Internet sites	Electronic references, Internet sites

Course Description Form(2)

Course Name .1		
second stage -Soil mechanics		
Course Code .2		
-		
Semester/year .3		
annual		
Date this description was prepared .4		
2024_2_19		
attendance forms Available .5		
practical -Theoretical		
(Number of study hours (total)/number of units (total .6		
8/4		
(Name of the course administrator (if more than one name is mentioned .7		
:Amiel - Hussein Ali Muhammad Al .Name: A.Minj.hus@atu.edu.iq		
objectives Course .8		
The general and specific objective of the course: teaching the student the basic principles of concr components and their composition, the different methods of pouring and producing concrete .the types of modern concrete, and the practical details of concrete works ,construction sites		
Teaching and learning strategies .9		
Reading various plans, drawings and designs in engineering specializations .1	The strategy	
the field of Conducting theoretical calculations for various issues in expertise .2		
.site soil investigation-Conduct on- .3		
Course structure .10		
(Study plan (suggested		
Second academic year		

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	A general introduction to soil and rock geology	Definition of soil and how it is formed	4	the first
=	=	Soil components, soil granular ,physical properties analysis	Soil types and their physical properties	8	The second and third
=	=	Plasticity properties of soil	Utterbrac k borders	8	Fourth and fifth
=	=	Soil classification, using the unified classification method)UCS (	Soil classificati on	8	Sixth and seventh
=	=	Permeability in soft and coarse soil and methods for measuring it in the field and .laboratory	Permeabili ty in soil	8	Eighth and ninth
=	=	Types of stresses in the soil, total stress, effective stress, .lateral pressure	Stresses in the soil	8	The tenth and eleventh
=	=	Improving soil properties, .mechanical method	Improving soil properties		twelveth
=	=	Types of laboratory and field soil tests	Soil tests	8	thirteenth and fourteenth
=	=	Using traditional methods to stabilize the soil and improve .its properties	Soil stabilizatio n	4	Fifteenth
=	=	Using modern methods to stabilize the soil and improve its properties (soil reinforcement and types of .(materials used	Soil stabilizatio n	4	sixteen And seventeenth
=	=	California endurance ratio) for road worksCBR .(	Soil bearing for road works	8	And the eighteenth
=	=	Attachment to the soil and its relationship to subsidence	Soil subsidence	4	nineteenth And The twentieth
=	=	The phenomenon of swelling and collapse	Problems related to changing soil volume	4	st21
=	=	Defining the shear resistance of the soil, calculating the	Shear resistance	4	twenty tow

		amount of bearing resistance .of the piping press	of soil		
=	=	Unconfined shear examination	Find shear resistance	4	twenty third
=	=	Direct shear examination	Find shear resistance		twenty fourth
=	=			4	
=	=	Triaxial shear examination	Find shear resistance	4	th25 sixth-twenty
=	=	Field shear tests	Find field shear resistance	4	th27
=	=	Types of foundations and relationship to soil their tolerance	Types of foundations	4	eighth-Twenty
=	=	Types of shallow and deep .foundations and piles	Shallow and deep foundations	4	XXIX
=	=	Introduction to soil investigation work, types of models, methods of taking and them, and preparing depth of test pits that must be carried out in the .laboratory	Soil investigation work	4	thirty
Oral +exams Editorial	Lecture + practical examples + laboratory	A general introduction to soil and rock geology	Definition of soil and how it is formed	4	the first
=	=	Soil components, soil physical properties, granular analysis	Soil types and their physical properties	8	The second and third
=	=	Plastic properties of soil	Utterbrack borders	8	Fourth and fifth
=	=	Soil classification, using the unified classification method)UCS (	Soil classification	8	Sixth and seventh
=	=	Permeability in soft and coarse soil and methods for measuring it in the field and .laboratory	Permeability in soil	8	Eighth and ninth
=	=	Types of stresses in the soil, total stress, effective stress, .lateral pressure	Stresses in soil the	8	The tenth and eleventh
=	=	Improving soil properties, .mechanical method	Improving soil properties		twelveth
=	=	Types of laboratory and field tests soil	Soil tests	8	thirteenth and fourteenth

=	=	Using traditional methods to stabilize the soil and improve .its properties	Soil stabilization	4	Fifteenth
=	=	Using modern methods to stabilize the soil and improve its properties (soil reinforcement and types of .(materials used	Soil stabilization	4	sixteen And seventeenth
=	=	California endurance ratio) for road worksCBR .(	Soil bearing for road works	8	And the eighteenth
=	=	Attachment to the soil and subsidence its relationship to	Soil subsidence	4	nineteenth And The twentieth
=	=	The phenomenon of swelling and collapse	Problems related to changing soil volume	4	st21
=	=	Defining the shear resistance of the soil, calculating the amount of bearing resistance .of the piping press	Shear resistance of soil	4	twenty tow
=	=	Unconfined shear examination	Find shear resistance	4	twenty third
=	=	Direct shear examination	Find shear resistance	4	twenty fourth
=	=	Triaxial shear examination	Find shear resistance	4	th25 sixth-twenty
=	=	Field shear tests	Find field shear resistance	4	th27
=	=	Types of foundations and their relationship to soil tolerance	Types of foundations	4	eighth-Twenty
=	=	Types of shallow and deep .foundations and piles	Shallow and deep foundations	4	XXIX
=	=	Introduction to soil investigation work, types of models, methods of taking them, and preparing and depth of test pits that must be carried out in the .laboratory	Soil investigation work	4	thirty
Course evaluation-11 .11					
assigned to the student, such as daily Distribution of the grade out of 100 according to the tasks .preparation, daily, oral, monthly, written exams, reports, etc					

	Resources of learning and teaching-12 .12
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
bookASTM Manual -3 -Soil Mechanics Book / Dr. Hamid Al -4 Saidi The Internet and related books in -5 Arabic and English	(Main references (sources
	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(3)

	Course Name .13
second stage – Construction techniques	
	Course Code .14
-	
	Semester/year .15
annual	
	Date this description was prepared .16
2024_2_19	
	Available attendance forms .17
practical	
	(total) Number of study hours (total)/number of units .18
8 / 4	
	(Name of the course administrator (if more than one name is mentioned .19
- Ali Adel Al :NameZuhairi aliadelalzuhairi@atu.edu.iq /	
	objectives Course .20
out construction and Providing the student with manual skills and qualifying him to carry .building works so that he will be qualified upon graduation to efficiently supervise the work	
	Teaching and learning strategies .21
Providing the student with manual skills and qualifying him to carry out building works so that he will be qualified upon construction and .graduation to efficiently supervise the work	The strategy
	Course structure .22
(Study plan (suggested Second academic year	

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Foundation planning, using surveying equipment	Foundation planning	4	the first
=	=	Excavations, and supporting .the sides of the excavation	Excavations	8	the second
=	=	Making and strengthening a foundation for a wall or support	Making and strengthening a foundation for a wall or support	8	third the
=	=	How it works and the machines used for that. A scientific film .types ,for pile works	And how it works pillars The	8	the fourth
=	=	Brick construction work, English bonding, German bonding, other types of .bonding	Brick building works	8	sixth and Fifth
=	=	Block construction (block, . .(thermostone	With blocks block,) thermosto . .(ne	8	Seventh
=	=	Wooden template work, training on making a wooden template for a column, bridge, .stairs and roofs	Wooden mold work		Eighth and ninth
=	=	Pouring regular and reinforced concrete and using manual training on mixing, as well as .automatic mixing	Formwork of ordinary and reinforced concrete	8	The tenth
=	=	A scientific visit to the site of making a wooden mold and .pouring concrete	A scientific visit to a wooden block making site	4	And the eleventh

=	=	rebar, the ,Reinforcing works correct way to use it, making reinforcement models for a .column, roof, and bridge	Reinforcing works	4	and The twelfth thirteenth
=	=	Iron works, iron structural sections and aluminum sections, and when they are not available, a scientific film is .that shown for	Iron works	8	And the fourteenth
=	=	Application with cashier and .sticker	Application with cashier and sticker	4	Fifteenth
=	=	preventing works, -Moisture training on the use of some repellent materials -moisture them optimally, and how to use such as asphalt felt, bituminous materials, according to what is .available	Moisture proofing works	4	sixteen And seventeenth
=	=	Showing a scientific film about thermal insulation materials: how to use them, ,their types .and their benefits	Showing a scientific film about thermal insulation materials	4	And the eighteenth
=	=	Whitewashing works, whitewashing of a wall using .plaster	Whiteness works	4	nineteenth
=	=	:Ficus and prose works .Using cement mortar .1 - Using cement mortar .2 .Noura	Ficus and prose works		Twenty and first- twenty
=	=	-Packaging works with Al .Furfouri Kashi	Cashier packaging works	4	twenty tow
=	=	Wall covering works, wall .covering using solutions	Wall covering works	4	twenty third
=	=	,(Secondary ceilings (Moroccan making a model of a Moroccan ceiling, training on how to .install them	Secondary ceilings	4	twenty fourth
=	=	Dyeing work (training on how	Painting	4	th25

		to use it and how to adapt each .(type to the dyed surface	works		
=	=	Sanitary works: Training the student on how to lay sewage pipes, clear water pipes, and the locations of sinks, bathtubs , .toilets, etc	Health : business	4	sixth-twenty
=	=	Electrical works: Training the student on making the rails and the correct finishing around some them and how to install electric lamps (establishing a .(light point and blocks	Electrical Works	4	th27
=	=	Mechanical works: making ventilation ducts (i.e. making a duct .(for a refrigerator	Mechanical works	4	eighth-Twenty
=	=	works: Foundation work Road and under the foundation for a .(road (as a model	Road works are foundation work	8	nine-Twenty nine-thirty and

Course evaluation-11 .23

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

Resources of learning and teaching-12 .24

(Required textbooks (methodology, if any	Najaf -Website of the Technical Institute
(Main references (sources	Building construction book by _ Martin Levon and Zuhair Sacco Internet, Videos available on the_ such as YouTube, which explain the stages of work as a reality if the material is practical and does not .have a theoretical aspect For example, specialized videos are selected that explain the practical steps and common mistakes during ording to the lecture, such as work, acc flattening, interior plastering, application of caulk, making wooden and iron molds, electrical and ....mechanical works, insulation, etc In addition to lectures presented by the subject professor and specialized assistant technicians, based on

.practical experience	
	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(4)

Course Name .25
second stage - Civil drawing
Course Code .26
-
Semester/year .27
annual
Date this description was prepared .28
2024_2_19
Available attendance forms .29
practical - Theoretical
(total)/number of units (total) Number of study hours .30
12 / 6
(Name of the course administrator (if more than one name is mentioned .31
Name rusul.hussein.inj@atu.edu.iq : AL /Rusul Hussein :
objectives Course .32
details and the details of all construction works so that he is Teaching the student the construct qualified to understand the executive maps and transfer their information to the work site and t xecutive workers to implement them. The student also learns the principles used in preparing sets o .maps
Teaching and learning strategies .33

Teaching the student the construction details and the details of all construction works so that he is qualified to understand the executive and the workers maps and transfer their information to the work site to implement them. The student also learns the principles used in .preparing sets of executive maps	The strategy

Course structure .34

(Study plan (suggested

Second academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week

Oral +exams Editorial	Lecture + practical examples + laboratory	Introduction to structural drawing, architectural and terminological symbols, lines in maps, drawing models for building and construction materials, drawing scale, executive maps, and types of .brick and block construction	introduction	6	the first
=	=	Drawing the horizontal plan of a residential house or small building, the plan of the first floor, and determining the sections -longitudinal and cross .and the facades	Draw the horizontal chart	6	the second
=	=	Drawing longitudinal and sections and detailed -cross sections of the finishing layers for floors, ceilings, and .surfacing	Draw longitudinal and cross sections	6	the third
=	=	Introduction to sanitary drawing and structures for water and sanitary establishments and sanitary furniture, and then drawing the network of water and sanitary establishments for the previous .horizontal plans	Introducti to on health drawing	6	the fourth
=	=	Drawing the structural details of the inspection basins and linking them to the health .facilities network	Drawing the structural details of the inspection basins	6	Fifth
=	=	Drawing the structural details the septic tanks and storage of drains) attached to the house) .plan	Drawing the structural details of septic tanks and storage	6	VI
=	=	Introduction to concrete and construction principles, concrete bearing stresses and the necessary types of teel, and reinforcement s drawing symbols used in maps	Introduction to concrete and construction principles	6	Seventh

		.and construction details			
=	=	Concrete slabs, their types, the transmission of loads through them and the necessary reinforcement for them, along with drawing the structural unidirectional ,details of solid .slabs	Concrete slabs	6	VIII
=	=	Drawing the structural details .way slabs-of solid two	Drawing the structural details of -solid two .way slabs	6	Ninth
=	=	details Drawing the structural way polygonal -and two -of one .slabs	Drawing the structural details of and -one way -two polygonal .slabs	6	The tenth
=	=	Introduction/Types of concrete joists and drawing the structural details of simple .support joists with sections	Introducti to on tributaries	6	eleventh
=	=	Drawing structural details for .continuous joists and sections	Drawing the structural details of the joists	6	twelveth
=	=	Drawing the structural details of the monolithic tributaries .along with their sections	Drawing the structural details of the joists	6	Thirteenth
=	=	Introduction with a drawing of the structural details of precast .prestressed joists	Introducti on with a drawing of the structural details of precast prestresse .d joists	6	fourteenth
=	=	Drawing (key) for the joists of a building, a horizontal structural plan, and fixing	Horizontal chart	6	Fifteenth

		.tables and details of the joists			
=	=	Drawing the structural details of the types of concrete columns, drawing the sections, -longitudinal and cross and showing the reinforcement .of the columns	Drawing the structural details of types of concrete columns	6	xvi twentieth
=	=	Drawing structural details and vertical sections to illustrate the reinforcing steel for bonding of .columns of successive floors	Drawing structural details and vertical sections	6	seventeenth
=	=	Introduction to foundations/their types and principles of operation, and drawing the structural details of the single foundation, combined foundation, and wall .foundations	Introduction to foundations	6	eighteen
=	=	Drawing the structural details of continuous foundations and .mat foundations	Drawing the structural details of continuous foundations and mat foundation .s	6	nineteenth
=	=	Drawing the structural details of the pile foundations and their types with the hat	Drawing the structural details of the foundations of the pillars	6	The twentieth
=	=	Identifying concrete stairs and their types: a straight staircase, straight staircase, a-a half spiral staircase, and drawing .their structural details	Getting to know concrete stairs	6	st21
=	=	Drawing structural details of joints in buildings, expansion	Drawing the structural	6	XXII

		.joints, structural joints	details of joints in buildings		
=	=	Drawing the structural details of the reinforced walls of .elevators and basement walls	Drawing the structural details of the reinforced walls	6	twenty third
=	=	Introduction to manufactured construction and prefabricated and drawing the structural details for connecting walls .with prefabricated ceilings	Introduction to prefabricated and manufactured construction	6	twenty fourth
=	=	Introduction to steel structures, their sections, tables, and how to obtain specifications and .sections details of their	Introduction to steel structures	6	th25
=	=	Drawing the structural details for the connection of steel parts .according to their load bearing	Drawing the structural details of the connection of steel parts	6	sixth-twenty
=	=	of steel foundations Bonding and bases, bonding of steel columns, bonding of joists to .each other	Bonding of steel foundations and foundations	6	th27
=	=	Details of the steel gable drawing and the connection of .its ribs	Steel gable drawing details	6	eighth-Twenty
=	=	Using the computer and its applications in structural drawing of reinforced concrete .structures	Using the computer and its applications in	12	nine-Twenty nine-thirty and

			constructi on drawing		

Course evaluation-11 .35
assigned to the student, such as daily Distribution of the grade out of 100 according to the tasks .preparation, daily, oral, monthly, written exams, reports, etc
Resources of learning and teaching-12 .36

Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
RANGWALA, 2017: Civil -1 Engineering Drawing Edition rd3 -2 Including Computer aided building) -3 .: 938503930X (drawing	(Main references (sources
ISBN-13: 978-9385039300 ISBN-10.	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Internet sites ,Electronic references

Course Description Form(5)

Course Name .37
The second phase - Buildings and factory construction
Course Code .38
-
Semester/year .39
annual
Date this description was prepared .40
2024_2_19
Available attendance forms .41
theoretical
(Number of study hours (total)/number of units (total .42
4 / 2
(Name of the course administrator (if more than one name is mentioned .43
Name nabeelkl@atu.edu.iq : AL /Nabil Kaftan :
objectives Course .44
information about the stages of implementation of Providing the student with the necessary traditional and manufactured buildings, the works that fall within each stage, and the .appropriate construction machines for each work
Teaching and learning strategies .45

to organize the site, direct the works, and supervise their implementation, and teach the student the basic .principles and supervision of factory construction	Enabling the student The strategy

Course structure .46

(Study plan (suggested

Second academic year

Evaluation method	Learning method	Name of the unit or topic	learning Required outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Introduction to the methods of implementing construction projects and the relevant parties and the tasks of each construction member of the project team, especially the .technicians	Implementing construction projects	6	the first
=	=	Organizing and planning the work site and the factors that preparing a affect it, along with plan for the work site for a specific project	Organizing and planning the work site	6	the second
=	=	Earthen excavations, methods of supporting the sides of excavations, excavation of basements	Earth excavations	6	the third
=	=	used to withdraw Techniques groundwater during construction	Techniques used to withdraw groundwater	6	the fourth
=	=	Dictations of dirt and the correct methods for making them, layers of roads and methods of implementing them	Earth dictates	6	Fifth
=	=	preventing layers for-Moisture both basements and walls, flatness	Moisture repellent layers	6	VI
=	=	Construction of walls with bricks, types of bricks, methods of joining, seams	Building walls with bricks	6	Seventh
=	=	Building walls with stone (types of stone preparation, types of (connection, joints	Building walls with stone	6	VIII
=	=	Building walls with	Building walls with	6	Ninth

		construction blocks (types of .(blocks and their specifications	construction blocks		
=	=	All types of interior wall .techniques finishing	Interior wall finishing techniques	6	The tenth
=	=	Techniques for finishing .external walls of all kinds	Techniques for finishing walls from the outside	6	eleventh
=	=	Methods of finishing floors for the ground floor, other floors .and ceilings	Methods of finishing floors	6	twelveth
=	=	Thermal insulation techniques	Thermal insulation techniques	6	Thirteenth
=	=	Concrete formwork (types, (requirements, components	Concrete molds	6	fourteenth
=	=	Lifting molds, causes of mold collapse, sliding molds and related techniques	Uploading templates	6	Fifteenth
=	=	Scaffolding (types, components, (safety factors	Scaffolding	6	sixteen
=	=	Secondary ceilings (types and methods of installing them) and installing air ducts	Secondary ceilings	6	seventeenth
=	=	Sanitary installations (pure water, sewage), types of pipes used for each, and methods of .connection and installation	Health establishments	6	eighteen
=	=	Doors and windows (types, (requirements, components	Doors and windows	6	nineteenth
=	=	in buildings (structural Joints joints, expansion joints), details of each type and methods of implementation	Joints in buildings	6	The twentieth
=	=	cost construction and -Low ways to rationalize costs (goals, requirements, construction .(methods	Horizontal curves	6	-Twenty and first -twenty second
=	=	Factory construction (properties, supplies)	Construction is low cost	6	twenty third

=	=	The different types of factory construction and the characteristics of each type	Different types of factory construction	6	twenty fourth
=	=	Components of the factory construction plant and production method	the Components of factory construction plant and production method	6	th25
=	=	Details of structural members manufactured construction in and methods of installing them	Details of structural members in factory construction	6	-Twenty sixth and -twenty seventh
=	=	Joints in manufactured construction (types, components and methods of (implementation	Joints in factory construction	6	-Twenty eighth
=	=	of transportation in Methods buildings, stairs, elevators types, components,) (construction methods	Methods of transportation in buildings	6	XXIX
=	=	Fire resistance of buildings and .fire control systems	Fire resistance of buildings	6	thirty

Course evaluation-11 .47	
according to the tasks assigned to the student, such as daily Distribution of the grade out of 100 .preparation, daily, oral, monthly, written exams, reports, etc	
Resources of learning and teaching-12 .48	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
Zuhair -book Building construction -1 Sako -Book Construction Equipment -2 Ayoub Sabry Prefabricated construction brochure -3	(references (sources Main
.Lectures given by the professor	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(6)

Course Name .49
second stage - (2) Computer applications
Course Code .50
-

Semester/year .51
annual
Date this description was prepared .52
2024_2_19
Available attendance forms .53
practical -Theoretical
(Number of study hours (total)/number of units (total .54
6 / 3
(Name of the course administrator (if more than one name is mentioned .55
:AMIL - AL / Raghad Mahdi Muslim : the nameraghad.muslim@atu.edu.com
objectives Course .56
made systems and their applications in -Teaching the student how to use ready .completing civil drawings
strategies Teaching and learning .57

made systems and their -use ready will be able to The student .applications to complete civil fees	The strategy

Course structure .58

(Study plan (suggested

Second academic year

Evaluation method	Learning method	topic Name of the unit or	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	A general review of AutoCAD	A general review of AutoCAD	3	the first
=	=	Return menu applicationsDraw , Modify ,Osnap .	applications-Re	3	the second
=	=	Complete dimensions, writing, and summaryviewing .	Complementary dimensions	3	the third
=	=	Principles of drawing in three .dimensions List of cortical trigramsSurface .	Principles of drawing in three dimensions	3	the fourth
=	=	List ofsolids .	triangular List of drawing	3	Fifth
=	=	Applications on commands	Applications on	3	VI

		Extrad ,Revolve_Slice .	commands Extrad , Revolve_Slice .		
=	=	Solidediting . drawing revisions	Drawing revisions	3	Seventh
=	=	Applications about ordersUnion ,Subtruct .	Applications about orders Union ,Subtruct .	3	VIII
=	=	CompleteSolid editing commands .	CompleteSolid editing commands	3	Ninth
=	=	Create a simple building in three .dimensions	Create a simple building in three .dimensions	3	The tenth
=	=	Completion of the previous .building	Complete the previous building	3	eleventh
=	=	Making a model of a horizontal section in a building (residential .house) and furnishing it	Make a model of a horizontal section	3	twelveth
=	=	.Complete the previous form	the Complete .previous form	3	Thirteen th
=	=	Making a longitudinal sectional model in a building (residential .house) with furnishing	Make a model	3	fourteen th
=	=	Rendering . design principles	Design principles	3	Fifteent h
=	=	.Add lighting to the scene	lighting to Add the scene	3	sixteen
=	=	.Adding materials to surfaces	Adding materials to surfaces	3	seventee nth
=	=	Manufacture of display .materials	Manufacture of display materials	3	eighteen
=	=	the scene: night Other effects in .lighting, backgrounds	Influences	3	nineteen th
=	=	A project to create a model of a storey building with the -multi addition of other accessories: ...trees, cars, people A simple introduction to the parallel programs for AutoCAD)3DMax .(	project	3	The twentiet h
=	=	Using additional processors for AutoCAD -the completed image	Using processors for the completed	30	-Twenty ..... one

		using thePhoto Shop program .	image		thirty

Course evaluation-11 .59
assigned to the student, such as daily Distribution of the grade out of 100 according to the tasks .preparation, daily, oral, monthly, written exams, reports, etc
Resources of learning and teaching-12 .60

Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
by Nasser book3D AutoCAD -4 Hassan Ismail 3d max blue box -2020 revit model -5 design iteration turn the page Lectures given by the professor -6 . based on practical experience Scientific competition between -7 ,3D graphics students through .distinction based on creativity and	(Main references (sources
) Other design engineering programs3d max, revit, lumion, sketchup)	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(7)

Name Course .61
second stage - Quantity surveying
Course Code .62
-
Semester/year .63
annual
Date this description was prepared .64
2024_2_19
Available attendance forms .65
practical-Theoretical
(Number of study hours (total)/number of units (total .66
6 / 3
(the course administrator (if more than one name is mentioned Name of .67
: Email / Sabah Nouri : Namesabah.saaid.inj@atu.edu.iq
objectives Course .68
. Calculating quantities and analyzing prices and dimensions for construction works
strategies Teaching and learning .69

Introducing the student to how to calculate the quantity of construction items involved in the implementation of facilities and	The strategy

buildings, as well as beams, and analyzing those quantities into their principles of calculating prices and costs, primary resources with the as well as contracting work, specifications, and engineering project .management	

Course structure .70

(Study plan (suggested

Second academic year

Evaluation method	Learning method	topic Name of the unit or	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical example + s laboratory	Definitions of estimation, its purpose, the foundations on which estimation is based, and the benefits expected from the .estimation process	Definitions of guesswork	6	the first
=	=	Types of estimation, units of measurement used for all construction paragraphs, table .of quantities	Types of estimation	6	the second
=	=	Calculating the quantity of earthworks for the foundations of facilities (buildings) (various types of foundations) and explaining its schedule of quantities, mentioning the unified standard guide for these works, their specifications, and .analysis price	Calculating the amount of earthworks for the foundations of facilities	6	The third and fourth
=	=	Calculating the quantity of structural sections under the moisture barrier (squares, foundation concrete, cubes), mentioning the unified guide for these works, standard their specifications, and their .schedule of quantities	Calculating the amount of structural sections under the moisture barrier	6	Fifth and sixth
=	=	Calculating the quantity of structural parts above the moisture barrier (badlo), including moisture barrier	Calculating the amount of structural sections above the moisture barrier	6	Seventh and eighth

		concrete, building above the moisture barrier (bricks and concrete blocks), and mentioning the unified standard guide for its height, and its table of ,specifications .quantities			
=	=	Calculating the quantity of concrete, rebar, and wooden formwork for foundations structural buildings with wall) foundations and pillar foundations), and mentioning the unified standard guide for .their height and specifications	Calculate the amount of concrete	6	The ninth and tenth
=	=	Calculating the quantity of concrete, reinforcing steel , and wooden molds for connecting bridges in structural buildings below the level of the basement and bridges above the openings, analyzing the prices, and mentioning the unified standard guide for the scope of .these works	Calculate the amount of concrete	12	eleventh And the twelfth
=	=	Calculating the quantity of and wooden ,concrete, rebar molds for columns of all types, analyzing their prices and mentioning the unified standard guide and .specifications	Calculate the amount of concrete	6	Thirteen th
=	=	Calculating the quantity of concrete, rebar, and wooden concrete molds for various works in special shapes, such as .domes and arches	Calculate the amount of concrete	6	fourteen th
=	=	Calculating the quantity of concrete, rebar, and wooden molds for various concrete works in special shapes, such as .arches domes and	Calculate the amount of concrete	6	Fifteent h the And sixteent h
=	=	Calculating the quantity of concrete, wooden molds, and	Calculate the amount of concrete	6	seventee nth

		reinforcing steel for all types of stairs, analyzing prices, and mentioning the unified standard guide for their height .and specifications			
=	=	Calculating the quantity of secondary roofing works of all kinds, and flattening works for all its sections (gear, paddocks, and stayers), and mentioning standard guide for the unified .their height and specifications	Calculating the quantity of secondary roofing ,works of all types	6	eighteen
=	=	Calculating the quantity of finishing works (finished, whitewashing, spreading, and dyeing) and the furfural casing, the prices, and analyzing mentioning the unified standard guide for their type, specifications, and the table of .quantities	Calculating the amount of finishing work	12	nineteen th the And twenty
=	=	Calculating the quantity of flooring work, casing, casing work, and covering the facades with alabaster and plaster, and mentioning the unified standard guide, its specifications, and the table of .quantities	Calculating the amount of flooring work	6	st21
=	=	Calculating the quantity of electrical and mechanical foundation works and mentioning the unified standard guide for its scope, specifications, and schedule of .quantities	Calculating the amount of electrical and mechanical installation work	6	XXII

=	=	Calculating the quantity of foundation water and sanitary works, analyzing and mentioning the unified standard guide for its scope, specifications, and schedule of .quantities	Calculating the amount of water and sanitary installation works	6	twenty third
		Calculating the quantity of sanitary foundation water and works (walls and ceilings) and explaining their specifications, the schedule of quantities, and the unified standard guide for .that	Calculating the amount of water and sanitary installation works	6	twenty fourth
=	=	Calculating the quantity of works and some items of steel structures and analyzing their prices, dimensions and schedule of quantities	Calculating the amount of work and some items of steel structures	6	th25
=	=	Contracts, contracting and contract organization, books, tender form application and instructions for contractors, maintenance period and advances and how .to calculate them	Contracts, contracting and contract organization, submission books	6	-twenty sixth
		Definitions of management, relations, interpersonal organization, cadre responsibilities, organization in projects, site planning and control, and engineering .management of projects	Definitions in management and relationships between individuals	6	the And -twenty seventh
=	=	Project scheduling: work progress schedule, arrow wire .diagrams, and critical path	Project scheduling	12	-Twenty eighth and -twenty ninth
=	=	Some applications for calculating the quantities of construction paragraphs using the computer	Some applications for calculating the quantities of construction paragraphs using the computer	6	thirty
evaluation Course-11 .71					

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	
Resources of learning and teaching-12 .72	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
Lectures given by the professor -1 according to the methodological (book (Quantity Surveying Book Related sources and books in -2 .Arabic, English, and the Internet	Book of systematic quantitative surveying
	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(8)

Course Name .73	
second phase – Project	
Course Code .74	
-	
Semester/year .75	
annual	
description was prepared Date this .76	
2024_2_19	
Available attendance forms .77	
practical	
(Number of study hours (total)/number of units (total .78	
4 / 2	
(Name of the course administrator (if more than one name is mentioned .79	
: name / Name	
objectives Course .80	
Teaching students how to conduct research and practical and applied projects in various .fields of work	
Teaching and learning strategies .81	
Teaching the student how to search scientific sources and how to help of specialized professors conduct research and projects with the 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 .of the project with the nature	The strategy

Course Description Form(9)

Course Name .82
second stage - Construction machines
Course Code .83
-
Semester/year .84

annual
Date this description was prepared .85
2024_2_19
Available attendance forms .86
theoretical
(total)/number of units (total) Number of study hours .87
4 / 2
(Name of the course administrator (if more than one name is mentioned .88
: Email / Maha Aboudi : Namemaha.subi@yahoo.com
objectives Course .89
Determine the productivity of machines and their operating costs and supervise their prop . .completion of work
Teaching and learning strategies .90

Determine the productivity of machines and their operating costs and .completion of work supervise their proper	The strategy

Course structure .91

(Study plan (suggested

Second academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Construction equipment, the importance of machines, ways to obtain them, and the advantages and disadvantages of owning or renting machines, .with a scientific film shown	Construction equipment, the importance of machines	2	the first
=	=	Calculating the costs of owning machines (costs of obsolescence, investment, maintenance and .(repair	Calculating the costs and ownership of machines	2	the second
=	=	owning Calculating the costs of machines (costs of obsolescence, investment, maintenance and .(repair	Calculating the costs and ownership of machines	4	and The third fourth
=	=	Engineering foundations for engineering machinery work, including (resistance to .(tilt movement and the effect of	Engineering foundations for engineering machinery .work	2	Fifth
=	=	Complementing the engineering foundations of engineering	Complementing the engineering	2	VI

		machinery work (the effect of elevation, swelling and ...contraction of soil on	foundations of engineering machinery work		
=	=	quarry (dozer, including: The description of the machine, its types, productivity calculation) .with a scientific film shown	The quarry	2	Seventh
=	=	Loading shovel (shovel), including (its types, difference between them, productivity ,aking work cyclecalculation, r	Loading shovel (shake)	2	VIII
=	=	A scientific visit to one of the business sites that has different .machines	A scientific visit to one of the business sites that has different .machines	2	Ninth
=	=	Drilling machines, total drilling rigs, face drilling rigs with .scientific film showing	Drilling machines	2	tenth The
=	=	Drilling machines (back shovel, waterwheel shovel, oyster shovel) with a scientific film .shown	Drilling machines (back shovel, waterwheel shovel, oyster (shovel	2	eleventh
=	=	Transport unit machines, paved and unpaved road trucks, classification of trucks according to multiple factors, tippers, productivity calculation with a scientific film .showing	Transport units ,machines	2	twelveth
=	=	Balancing the number of tippers with the size of drilling machines, lorries, locomotives and trailers, and railway .trucks	Balancing the number of tippers	2	Thirteenth
=	=	The stands include (their types and benefits, along with productivity calculations) and a .is shown scientific film	Terraces	2	fourteenth
=	=	Types of skimmers, their benefits, and productivity calculations, with a scientific .film shown	Skimmers	2	Fifteenth
=	=	Sipper productivity: Use the performance chart to scraper .calculate productivity	Using the skimmer performance chart to	2	sixteen

			calculate .productivity		
=	=	A scientific visit to a business site with a scientific film .showing	A scientific visit to one of the business sites	2	seventeenth
=	=	Soil compaction machines, their importance includes their types and places of use, along with .showing a scientific film	Soil compacting machines	2	eighteen
=	=	Complementing the forging machines and calculating productivity, pressure bulb .distributing weights theory for	Ironing machines and productivity calculations	2	nineteenth
=	=	Complementing the ironing machines with vibrating rollers, calculating the productivity of the rollers	Vibrating rollers, calculating the productivity of rollers	2	The twentieth
=	=	Material mixing equipment for concrete works with a scientific film showing	Material mixing equipment for works concrete	2	st21
=	=	Concrete compacting and polishing transportation equipment	Concrete compacting and polishing transportation equipment	2	XXII
=	=	Asphalt production plants, .their types and specifications	Asphalt production .plants	2	twenty third
=	=	Specifications of asphalt spreaders, spreader speed, types of spreaders, with a .scientific film shown	Specifications of asphalt spreaders	2	twenty fourth
=	=	Scientific visit to asphalt .production plants	Scientific visit to asphalt production .plants	2	th25
=	=	Trench types, calculating production rates and showing a .scientific film	Trenches	2	sixth-twenty
=	=	Tunnels, their importance and with a scientific film ,types .shown	Tunnels	2	the And -twenty seventh
=	=	Digging tunnels with mechanical excavators, ventilating the tunnels and .showing a scientific film	Tunnels with mechanical excavators	4	-Twenty eighth
=	=	Conveyor belts, calculation of transportation costs with conveyor belts, parts of conveyor belts	Conveyor belts	2	XXIX

=	=	The use of modern control systems in construction machines, with the presentation of a special scientific film about .them	Modern control systems in construction machines	2	thirty

Course evaluation-11 .92

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

Resources of learning and teaching-12 .93

Najaf -Website of the Technical Institute	(y, if anyRequired textbooks (methodolog
Construction planning methods - 1 (and equipment (Part One Translated by Dr. Muhammad Ezzi-Ayoub Sabri Al Guessing: by Medhat Fadil -2	(Main references (sources
	references Recommended supporting books and (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

Course Description Form(10)

Course Name .94
Phase Two - Surveying
Course Code .95
-
Semester/year .96
annual
Date this description was prepared .97
2024_2_19
Available attendance forms .98
practical -Theoretical
(Number of study hours (total)/number of units (total .99
6 / 3
(Name of the course administrator (if more than one name is mentioned .100
: Amil- Al / Munqith Sadiq :Name
objectives Course .101
Teaching and learning strategies .102
The strategy
Course structure .103
(Study plan (suggested
Second academic year

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Oral +exams Editorial	Lecture + practical examples + laboratory	Identifying the theodolite device/its parts, uses, types, installing the device, reading the horizontal and vertical .directions of the various types	Getting to know theodolite the .device	2	the first
=	=	Checking and adjusting the theodolite device for all types of vertical and horizontal examinations, then finding the .device's constant	and Checking adjusting the theodolite device	2	the second
=	=	Methods for measuring horizontal angles with a .theodolite device	Methods of measuring horizontal angles	4	the third
=	=	Polygons, types of polygons, .their purposes, and uses	ribbing		the fourth
=	=	Measure and correct the interior horizontal angles of a .closed polygon	Measure horizontal angles	2	Fifth
=	=	Methods of measuring the horizontal distances of the sides .of a polygon	of Methods measuring the horizontal distances of the sides of a .polygon	2	VI
=	=	Drawing closed and open .polygons	Drawing closed and open .polygons	2	Seventh
=	=	Raising beams for polygons using a theodolite device and .tape	Raising beams polygons for	2	VIII
=	=	Calculating the horizontal components and vertical components of the sides of a polygon and calculating the .coordinates	Calculate horizontal components and vertical components	2	Ninth
=	=	Calculating the horizontal components, vertical components, and coordinates of	Calculate horizontal components	2	tenth The

		.an open polygon	and vertical components		
=	=	measuring vertical Methods for .angles with a theodolite device	Methods of measuring vertical angles	2	eleventh
=	=	Finding the height of a building target) that can be reached) using the theodolite device	Find the height of a building	2	twelveth
=	=	Finding the height of a building cannot be reached target) that) using a theodolite device		2	Thirteenth
=	=	Finding the height of a building target) by measuring three) angles of elevation or depression using a theodolite device	Find the height of a building	2	fourteenth
=	=	Measuring the length of an -inaccessible building measuring the horizontal angle .between two walls	Measuring the an length of inaccessible building	2	Fifteenth
=	=	Curves/types	Curves	2	sixteen
=	=	Horizontal curves (elements of and (a simple circular curve equations used in designing a .simple circular curve	Horizontal curves	2	seventeenth
=	=	Methods of projecting horizontal curves / method of columns based on tangents method of -Baker method)) columns located on the chord method of dividing -offsets)) method of -the chords deviation angles	Methods of projecting horizontal curves	2	eighteen
=	=	Projecting curves using two .theodolite devices	Projection of curves	2	nineteenth
=	=	Drawing a road with its .curves horizontal	Draw a road with its horizontal curves	2	The twentieth
=	=	The main convex and concave curves/their elements/calculating the length of the vertical curve	Convex and concave principal curves	2	st21

=	=	Calculations related to the .vertical curve	Calculations related to the vertical curve	2	XXII
=	=	Triangulation, its purposes, use, choosing triangulation points, .triangulation networks	Triangulation	2	twenty third
=	=	Measure the base line for triangulation and make fortifications for measuring .with tape	Measure the base line for triangulation	2	twenty fourth
=	=	Measuring the horizontal angles of the triangulation network, making calculations and making the necessary .fortifications	Measuring the horizontal angles of a triangulation grid	2	th25
=	=	survey, types of Tachymetric .tachymeter devices	Tachymetric area	2	sixth-twenty
=	=	Learn about modern electronic measuring devices and how to use them to measure horizontal .and vertical distances	Identify modern electronic measuring devices	2	the And -twenty seventh
=	=	A general project about constructing a road or drainage channel, calculating the dirt needed to complete the project along with its horizontal and .vertical curves	A general project on constructing a road	4	-Twenty eighth
=	=	Introduction to the comprehensive station device. Using the total station device to measure the lengths of the sides of a polygon, interior angles, .and coordinates	Introduction to the comprehensive station device	2	nine-Twenty -thirty and nine

Course evaluation-11 .104	
according to the tasks assigned to the student, such as daily 100 Distribution of the grade out of .preparation, daily, oral, monthly, written exams, reports, etc	
Resources of learning and teaching-12 .105	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
	Surveying methodology book
	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites