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

2023

Introduction:

The department was established in 1978 and includes the Building and Construction Branch: Students graduate from this department in large numbers as intermediate technical cadres. The department performs all field and laboratory work, engineering consultations, and prepares designs in the field of civil engineering through the Scientific and Consulting Services Office. The department graduates more than (40) male and female students annually. The department's graduates work in several fields, the most important of which are implementing and constructing buildings, canals (irrigation and drainage), sewers, and water; implementing roads and airports; The top ten% of students complete their studies in Iraqi colleges.

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

Faculty/Institute: Najaf Technical Institute

Scientific Department: Department of Civil Technologies

Academic or Professional Program Name: Diploma in of Civil Technologies

Final Certificate Name: Diploma in of Civil Techniques

Academic System: Annual

Description Preparation Date: 5/10/2023

File Completion Date: 10/10/2023

Signature:

Head of Department Name:

Date:10/10/2023

Signature:

Scientific Associate Name:

Asst. Prof. Dr. Adel aziz

Date:10/10/2023

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department: Dr. Mohammad Najeh

Date:10/10/2023

Approval of the Dean

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	24	132		
College Requirements	yes			
Department Requirements	yes			
Summer Training	yes			
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.	Learning Outcomes Statement 1

2- Reading various plans, drawings and designs in engineering specializations. 3- Conducting theoretical calculations for various issues in the field of specialization. 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.

1. 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

				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
The first stage	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		✓	✓			✓			✓		✓	✓	
The second stage	Concrete technology	Basic		✓		✓		✓		✓		✓	✓		
	Construction techniques	Basic		✓	✓	✓		✓		✓		✓	✓	✓	
	Soil mechanics	Basic		✓	✓	✓			✓		✓		✓		
	Civil drawing	Basic		✓		✓	✓		✓			✓	✓	✓	

	Area (2)	Basic		✓	✓		✓		✓			✓		✓	
	Construction machines	Basic		✓	✓			✓		✓		✓	✓		
	Calculator Apps (2)	Basic		✓		✓		✓	✓						
	Quantity surveying	Basic		✓	✓			✓	✓			✓			
	Buildings and factory construction	Basic		✓	✓			✓				✓	✓		✓

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
English Taught in	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	

academic year First
(Study plan suggested)

Course Description Form(1)

Course Name .1
first stage The - Concrete materials
Course Code .2
-
Semester/year .3
annual
Date this description was prepared .4
2023
Available attendance forms .5
practical –Theoretical
(Number of study hours (total)/number of units (total .6
6 / weekly 3
(of the course administrator (if more than one name is mentioned Name .7
:,Name: Raghad Mahdi Muslim email : raghad.muslim@atu.edu.com
objectives Course .8
Objectives of the study subject
• roducing the student to the materials that make up concrete and mastering the physical, hanical and chemical properties of these materials and their effect on concrete. The .practical part includes the necessary tests for these materials • student to the importance of concrete and the materials it consists of, such Introducing as cement, aggregates, and additives • How to strengthen compressive strength using available devices • Conducting important laboratory tests for concrete
strategies Teaching and learning .9

• Take the forms from the site and examine them 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

plan (suggeste Study)
First academic year

		Name of the	Req		

valuation method	earning method	unit or topic	uired learning outcomes	ours	he week
+ral exams ditorial	ecture + practical examples + laboratory	General principles about concrete ,its definition) composition, terminology, .(and properties	Gen eral principles of concrete		he first 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 cement es of		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 mplementing the properties of cement		inth nd the tenth
		Aggregates: classification of methods for ,aggregates taking models, shape of particles, surface texture of particles, durability of .aggregates	Agg regate		leventh
		Mechanical properties of aggregate: gravity, unit specific) weight of compacted and unconsolidated, gradation, porosity, ability to absorb, abrasion, sand -corrosion .(swelling	Agg regate	5	welveth nd the thirteenth nd the fourteen

					th nd the fifteenth nd the sixteenth
		The proportion of salts, organic materials and clay materials in the te, especially aggrega sand, interaction with .alkaline materials	Aggregate		eventeenth nd the eighteenth
		Light and heavy aggregate: Types of lightweight agg. Natural) and artificial), advantages and disadvantages of light aggregate compared to .aggregate ordinary	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 specifications water, and .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,	Additives for concrete		-wenty sixth he

		delay admixtures, accelerating admixtures, operational improvement admixtures, refining freeze -admixtures, anti .admixtures			-twenty seventh
		Chemical composition of the additives, homogeneity of the substance, checking the specific gravity of the additives, examining the remaining residues by drying for liquid additives, examining the remaining residues by ng for solid additives, dryi and the specifications for .that	Che mical composition of additives		-wenty eighth 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

Course evaluation .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

-Technical Institute Website of the 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 Arabic, English, and the books in .Internet	(Main references (sources
of Laboratory Tests for Book Concrete Technology (Haqqi Ismail Mohsen,	Recommended supporting books and references (scientific journals,

(Zubaidi-Suad Abbas Al	(....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
2023
Available attendance forms .17
practical –Theoretical
(hours (total)/number of units (total Number of study .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
Objectives of the study subject
• mastering the physical, mechanical construction materials Introducing the student to chemical properties of these materials and their effect on concrete. The practical part .includes the necessary tests for these materials • . sive strength using available devicesHow to strengthen compres • .for these materials Conduct important laboratory tests
Teaching and learning strategies .21

The strategy	the student to carry out standard tests to determine the Qualifying conform to specifications and extent to which construction materials 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	topic Name of the unit or	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	tests of Knowledge .for clay bricks	4	the fourth
=	=	Limestone bricks, glass bricks, properties and manufacturing	Properties and of manufacture	4	Fifth

		.methods	limestone bricks and glass bricks		
=	=	concrete blocks -Concrete blocks properties and manufacturing) method, explaining the difference .(between the two	Properties and Concrete making concrete -blocks blocks	4	VI
=	=	Thermostone, its properties, and .methods of manufacturing	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
=	=	Uses of building stone according .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 -products Gypsum 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 method application .joints -	4	sixteen
=	=	preventing materials, -Moisture .their types and reasons for use	-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	4	eighteen

			.methods and uses		
=	=	flexible and flexible -Semi repellent materials, -moisture their types, uses, manufacturing -methods, and liquid moisture .repellent materials	flexible and -Semi -flexible moisture repellent materials, es, their types, us manufacturing methods, and liquid repellent -moisture .materials	4	ninetee nth
=	=	Epoxy, its definition, properties, types, and uses	Epoxy, its ,definition properties, types, and uses	4	The twentiet h
=	=	its origin, types used and -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 wood methods and .defects	4	twenty tow
=	=	-Metals (ferrous and non ferrous materials) and their .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
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 .24

Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
/ 1986 / Building Construction Book -1	(references (sources Main

University of Baghdad Levon and Zuhair Written by: Ertin Sako Building Construction and Factory -2 Construction 1991/Technical Education -Prepared by: Adnan Al - Authority .imiNua-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	Electronic references, Internet sites

Description Form Course(3)

Course Name .25	
First Stage - Engineering Mechanics	
Course Code .26	
-	
Semester/year .27	
annual	
Date this description was prepared .28	
2023	
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	
subject Objectives of the study	
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.	
and learning strategies Teaching .33	
Analyzing structures and finding the forces and stresses in their parts as a result of external loads and their relationship to the dimensions of the various parts in engineering facilities so that they can withstand the stresses placed on them safely and economicallyt.	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, the law of the force triangle and the force polygon .	analyze and How to synthesize forces	6	the 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, types of supports, 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	Centers of gravity 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	6	eighteen And the nineteent

			complex geometric shapes and their .cationsappli		h
=	=	Introduction to the resistance of materials, definition of stresses .and their types, safety factor	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 .strain to stress	3	twenty tow
=	=	,Lateral strain Poisson's ratio, .applications to strain and stress	Lateral strain, Poisseau ratio , applications to .strain and stress	3	twenty third
=	=	nt Shear and bending mome 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 .bending moments	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

such as daily ,Distribution of the grade out of 100 according to the tasks assigned to the student .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	(Main references (sources
	Recommended supporting books and (....references (scientific journals, reports
Internet sites	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
2023
Available attendance forms .41
practical - Theoretical
(total)/number of units (total) Number of study hours .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
the study subject Objectives of
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

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

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

Course Description Form(5)

Course Name .48	
first stage - Mathematics	
Course Code .49	
-	
Semester/year .50	
annual	
Date this description was prepared .51	
2023	
forms Available attendance .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	
study subject Objectives of the	
Developing the student's ability to use mathematics in practical applications and benefit .from it in other engineering lessons	
Teaching and learning strategies .56	
equations, The student learned the different ways of representing 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
=	=	equations, Solving linear Cramer's method, applications to determinants, solving force .analysis equations	Solve linear equations	3	the second
=	=	Vectors, vector analysis, vector and scalar quantities, vector algebra, arithmetic operations for .vectors in space	.Vector analysis	3	the third
=	=	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	The erivative of	3	twelveth

		function, derivative of hyperbolic .functions	the exponential function		
=	=	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
=	=	applications ,Definite integration of definite integration, area under the curve, area between .two curves	Definite integral	3	eighteen
=	=	.Rotational volumes, arc length	Rotational volumes	3	nineteenth
=	=	Application of physics and torque, ,engineering (work .(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
=	=	Numerical methods in the trapezoid rule, ,integration 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 within the field of .specialization	3	th25
=	=	Finding the highest or lowest .ical curvepoint of a vert	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, thmetic frequency curve, ari 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 .preparation, daily, oral, monthly, written exams, reports, etc	
Learning and teaching resources .59	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
	(Main references (sources
booklet on The methodological book and 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
description was prepared Date this .63
2023
Available attendance forms .64
practical -Theoretical
(Number of study hours (total)/number of units (total .65
6 / weekly 3
(Name of the course administrator (if more than one name is mentioned .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 skill in using the calculator to fields and the principles of programming and providing him with .implement programs previously prepared for application in his field of specialization
Teaching and learning strategies .68
Windows operating system , theAuto Cad drawing program , theMicros Word printing program , andExcel . The strategy
Course structure .69

(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	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 kthe TasBar 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 identifying any program and its main components, dealing) :with desktop icons such as	Window concept for any program	3	the second

		My Documents ; My Computer; Recycle Bin .(Desktop main screen , the 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 .(			
=	=	) Getting to knowMy Computer in terms of disks, (folders and files, how to deal with formatting floppy disks copying folders and files, and 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
=	=	to select most AutoCAD How 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	
according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.	Distribution of the grade out of 100
Learning and teaching resources .71	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
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	(references (sources Main
	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
2023

Available attendance forms .76
practical
(total)/number of units (total) Number of study hours .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
student the basic principles of engineering drawing and computer drawing Teaching the .programs in an efficient and rapid manner, to enable him to express his ideas through it
: Teaching and learning strategies .80
engineering maps with knowledge of the Qualifying the student to draw and r The strategy .architectural and construction terms used in maps

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
=	=	operations, Geometric bisecting a line segment, bisecting an angle, connecting a straight line with a circle with an arc, connecting two straight lines with an arc, drawing an equal triangle Polygon, pentagon, hexagon, straight line tangent to two outside, circles inside and arc tangent to two circles inside and outside	Engineering operations	6	the second
=	=	Ellipse, drawing application Shapes Engineering using basic engineering processes	Ellipse	6	the third

=	=	principles Projection, placement method Dimensions drawing, On 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 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 the basic	6	The tenth
=	=	fee shapes Engineering vehicles and mechanical	fee shapes Composite	12	Eleventh and

		parts (applications to (engineering processes	engineering		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 of the drawings.	Drawing an integrated panel	12	-Twenty third and -twenty fourth

=	=	Draw an integrated panel containing Species The drawings are(2D) and (3D) and contain a data table and an explanation of the drawings.	Drawing an integrated panel	12	-Twenty third and -twenty fourth
=	=	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 shapes (cube, prism, (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 .preparation, daily, oral, monthly, written exams, reports, etc	
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 (....scientific journals, reports) references
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
2023
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	Lathing	*6*	Ninth And the

		plane, internal draw,) .(different tooth work			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 safety industrial .equipment C. Types of welding (gas, ultrasonic, pressure welding, electric arc .(welding	Welding	15	twelveth And the thirteenth 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
=	=	Stone and plastering works: cutting, sawing,	Stone and stone works	3	thirty

		.smoothing, perforation			

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
Learning and teaching resources .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 Building Construction and Factory -2 Construction 1991/Technical Education -Prepared by: Adnan Al - Authority .Nuaimi-Dahan and Sarmad Fakhri Al	(Main references (sources
	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
2023
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
Objectives of the study subject
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 .ation in its various branchesatmosphere of technical terminology related to civil specializ
Teaching and learning strategies .104

a . The theoretical part represents40% of the total allocated hours, equivalent to 12 .weeks	The strategy

B: The practical part represents60% of the total hours allocated, which is equivalent to8 .weeks	

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	
2023	
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	
learning strategies Teaching and .115	
development in various and Introducing the student to human rights, their goals eras, and the role of international organizations and public opinion in respecting .and protecting human rights	The strategy

Course structure .116

(suggested) Study plan

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 and medieval times	Its development	2	the second
=	=	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 In regional charters and : national constitutions	The relationship between human rights and public freedoms	4	Eleven th and twelft h
=	=	Necessary human rights and collective human rights	Essential human rights	2	Thirte enth
=	=	cultural Economic, social and human rights, civil human .rights and politics	Economic, social and cultural human rights	2	fourte enth
=	=	Modern human rights: facts in development, the right to a clean environment, the right to solidarity, the right to religion	Modern human rights	2	Fiftee nth
=	=	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	sevent eenth
=	=	Guarantees, respect and protection of human rights at	Guarantees, respect and	2	eighte en

		:the international level The role of the United Nations - and its specialized agencies in providing guarantees	protection of human rights		
=	=	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	ninete enth
=	=	The general theory of freedoms: the origin of rights and freedoms, the project's position on declared rights and use of the term freedoms, the .general freedoms	The general theory of freedoms	2	The twenti eth
=	=	The functional nature of the 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 basis of the rule of law	4	twenty tow And the twenty third-
=	=	public freedoms Regulation of by public authorities	Regulation of public freedoms by public authorities	2	twenty fourth
=	=	judicial -Litigation or non injustice	The concept of -litigation or non judicial injustice	2	th25
=	=	Judicial appeal, determining the state's responsibility for its actions legitimate	Judicial appeal	2	twenty sixth-
=	=	The impact of double	The impact –	2	th27

		judiciary on public freedoms Public freedoms under administrative jurisprudence	of double judiciary on public freedoms		
=	=	the historical :Equality development of the administrative concept	Historical development of the administrative concept	2	Twent -y eighth
=	=	The modern development of 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	
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.	
teaching resources Learning and .118	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
There are no prescribed books, binding are used to study the subject	(Main references (sources
Suggested sources 1- Human Rights Book Dr. Hamid Hanoun . 2- Book on Human Rights, Democracy and Public Liberties, Dr. Maher Sabry Kazem .	Recommended supporting books and (....journals, reports references (scientific
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	
2023	
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	
Objectives of the study subject	
Teaching the student the basic principles of concrete components and their composition, the construction sites, the types of modern different methods of pouring and producing concrete on .concrete, and the practical details of concrete works	
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 construction sites, the types of modern concrete, and the practical details of concr	The strategy

.works					
structure Course .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	A general review of materials Definitions: .used in concrete Regular concrete, reinforced place concrete, -in-concrete, cast premixed concrete, precast .concrete, prestressed concrete	Materials used in concrete	2	the first
=	=	and mixing of Production 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 shrinkage, and unit weight in .fresh concrete	Properties of fresh concrete	4	Fifth the And 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	eleventh

=	=	mixed concrete: its -Ready definition, benefits and mixer ,production methods . trucks and vibrating trucks	Ready mixed concrete	2	twelveth
=	=	Resistance of hardened concrete, ,nature of concrete resistance .types of resistance	Resistance of hardened concrete	2	Thirteenth
=	=	Concrete strength tests: compressive strength test, tensile strength test, (bending tensile test .(and splitting tensile test	Concrete resistance tests		fourteenth
=	=	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	Fifteenth
=	=	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	seventeenth
=	=	accelerators, : Types of additives retarders, plasticizers, air vacuum makers, silica dust, bubblers, moisture preventers, .weight reducers...etc	Types of additives	2	eighteen
=	=	The -Design of concrete mixes: A .American method	Design of concrete mixes	2	ninteenth
=	=	The -Design of concrete mixes: B .British method	concrete Design of mixes	2	The twentieth
=	=	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		twenty tow

			.additives		
=	=	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	
2023	
forms Available attendance .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 concre components and their composition, the different methods of pouring and producing concrete .concrete, and the practical details of concrete works construction sites, the types of modern	
Teaching and learning strategies .9	
Reading various plans, drawings and designs in engineering specializations .1 Conducting theoretical calculations for various issues in the field of .seexperti .2 .site soil investigation-Conduct on- .3	The strategy

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 physical properties, granular analysis	Soil types and their physical	8	The second and third

			properties		
=	=	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
=	=	soil properties, Improving .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 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		twenty fourth
=	=			4	
=	=	Triaxial shear examination	Find shear	4	th25

			resistance		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 the be carried out in .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
=	=	components, soil 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 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 and improve stabilize the soil .its properties	Soil stabilization	4	Fifteenth
=	=	Using modern methods to stabilize the soil and improve	Soil stabilizatio	4	sixteen And

		its properties (soil reinforcement and types of .(materials used	n		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 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 soil their relationship to tolerance	Types of foundatio ns	4	eighth-Twenty
=	=	Types of shallow and deep .foundations and piles	Shallow and deep foundatio ns	4	XXIX
=	=	Introduction to soil investigation work, types of models, methods of taking them, and preparing and test pits that must depth of be carried out in the .laboratory	Soil investigati on work	4	thirty
Course evaluation-11 .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					
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 English Arabic and	(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
2023	
	Available attendance forms .17
practical	
	(Number of study hours (total)/number of units (total .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
Providing the student with manual skills and qualifying him to carry out construction and .the work building works so that he will be qualified upon graduation to efficiently supervise	
	Teaching and learning strategies .21
Providing the student with manual skills and qualifying him to carry out construction and building works so that he will be qualified upon .graduation to efficiently supervise the work	The strategy
	structure Course .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 a wall or foundation for support	Making and strengthening a foundation for a wall or support	8	the third
=	=	How it works and the machines used for that. A scientific film .for pile works, types	And how it works pillars The	8	the fourth
=	=	Brick construction work, English bonding, German other types of ,bonding .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, .roofs stairs and	Wooden mold work		Eighth and ninth
=	=	Pouring regular and reinforced concrete and using manual mixing, as well as training on .automatic mixing	Formwork of ordinary and reinforced concrete	8	The tenth
=	=	scientific visit to the site of A making a wooden mold and .pouring concrete	A scientific visit to a wooden block	4	And the eleventl

			making site		
=	=	Reinforcing works, rebar, the 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 .shown for that	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 and how to use them optimally, 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: their types, how to use them, .and their benefits	Showing a scientific film about thermal insulation materials	4	And the eighteenth
=	=	Whitewashing works, a wall using whitewashing of .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	Secondary ceilings	4	twenty fourth

		ceiling, training on how to .install them			
=	=	training on how) Dyeing work to use it and how to adapt each .(type to the dyed surface	Painting works	4	th25
=	=	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 them and how to install some 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
=	=	Road works: Foundation work 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 .preparation, daily, oral, monthly, written exams, reports, etc

Resources of learning and teaching-12 .24

(Required textbooks (methodology, if any	Najaf -the Technical Institute Website of
(Main references (sources	Building construction book by _ Martin Levon and Zuhair Sacco Videos available on the Internet, _ such as YouTube, which explain the stages of work as a reality if the not material is practical and does .have a theoretical aspect For example, specialized videos are selected that explain the practical steps and common mistakes during work, according to the lecture, such as flattening, interior plastering, application of caulk, making wooden

lds, electrical and and iron mo ....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 (....reports ,scientific journals)
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
2023
Available attendance forms .29
practical - Theoretical
(Number of study hours (total)/number of units (total .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
Teaching the student the construction details and the details of all construction works so that he is qualified to understand the executive maps and transfer their information to the work site and the workers to implement them. The student also learns the principles used in preparing sets of executive 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 maps and transfer their information to the work site and the workers 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 rs, ceilings, and for floo .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 for the previous establishments .horizontal plans	Introduction to 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 of the septic tanks and storage drains) attached to the house) .plan	Drawing the structural details of septic tanks and storage	6	VI
=	=	Introduction to concrete and	Introducti	6	Seventh

		construction principles, bearing stresses and concrete the necessary types of reinforcement steel, and drawing symbols used in maps .and construction details	on to concrete and constructi on principles		
=	=	Concrete slabs, their types, the transmission of loads through them and the necessary them, along reinforcement for with drawing the structural details of solid, unidirectional .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
=	=	Drawing the structural details 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 .sections support joists with	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 tributaries of the monolithic .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	6	fourteenth

			details of precast prestresse .d joists		
=	=	Drawing (key) for the joists of a building, a horizontal structural plan, and fixing .tables and details of the joists	Horizontal chart	6	Fifteenth
=	=	Drawing the structural details concrete of the types of 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	Introducti on to foundatio ns	6	eighteen
=	=	Drawing the structural details of continuous foundations and .mat foundations	Drawing the structural details of continuou s foundatio ns and mat foundatio .ns	6	nineteenth
=	=	Drawing the structural details of the pile foundations and their types with the hat	Drawing the structural details of the foundatio ns 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 .joints, structural joints	Drawing the structural details of joints in buildings	6	XXII
=	=	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	6	th27

			foundations		
=	=	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 construction drawing	12	nine-Twenty nine-thirty and

Course evaluation-11 .35	
student, such as daily preparation, daily, oral, monthly, written exams, reports, etc. Distribution of the grade out of 100 according to the tasks assigned to th	
Resources of learning and teaching-12 .36	
Najaf -Website of the Technical Institute	(Required textbooks (methodology, if any
RANGWALA, 2017: Civil Engineering Drawing Edition rd3 Including Computer aided building) .: 938503930X (drawing -1 -2 -3	(Main references (sources
ISBN-13: 978-9385039300 ISBN-10.	Recommended supporting books and references (....scientific journals, reports)
Internet sites	Electronic references, Internet sites

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
2023
Available attendance forms .41
theoretical
(hours (total)/number of units (total Number of study .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

the stages of implementation of Providing the student with the necessary information about traditional and manufactured buildings, the works that fall within each stage, and the .appropriate construction machines for each work

Teaching and learning strategies .45

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

Course structure .46

(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 the methods of implementing construction projects and the relevant parties and the tasks of each member of the construction team, especially the project .technicians	Implementing construction projects	6	the first
=	=	Organizing and planning the work site and the factors that affect it, along with preparing a work site for a plan for the 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
=	=	Techniques used to withdraw groundwater during construction	Techniques used to withdraw groundwater	6	the fourth
=	=	Dictations of dirt and the	Earth dictates	6	Fifth

		correct methods for making them, layers of roads and methods of implementing them			
=	=	preventing layers for -Moisture walls, both basements and 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 (joints ,connection	Building walls with stone	6	VIII
=	=	Building walls with construction blocks (types of .(blocks and their specifications	Building walls with construction blocks	6	Ninth
=	=	All types of interior wall .finishing techniques	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	Thirteen th
=	=	Concrete formwork (types, (requirements, components	Concrete molds	6	fourteen th
=	=	Lifting molds, causes of mold collapse, sliding molds and techniques related	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	Health establishments	6	eighteen

		.connection and installation			
=	=	Doors and windows (types, (requirements, components	Doors and windows	6	nineteen th
=	=	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 10 .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
2023
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 weel

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 Extrad ,Revolve_Slice .	Applications on commands Extrad , Revolve_Slice .	3	VI
=	=	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	Thirteenth
=	=	Making a longitudinal sectional model in a building (residential	Make a model	3	fourteenth

		.house) with furnishing			
=	=	Rendering . design principles	Design principles	3	Fifteenth
=	=	.Add lighting to the scene	lighting to Add the scene	3	sixteen
=	=	.Adding materials to surfaces	Adding materials to surfaces	3	seventeenth
=	=	Manufacture of display .materials	Manufacture of display materials	3	eighteen
=	=	the scene: night Other effects in .lighting, backgrounds	Influences	3	nineteenth
=	=	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 twentieth
=	=	Using additional processors for AutoCAD -the completed image using thePhoto Shop program .	Using processors for the completed image	30	-Twenty ..... one thirty

Course evaluation-11 .59

assigned to the student, such as daily Distribution of the grade out of 100 according to the task .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
2023
Available attendance forms .65
practical-Theoretical
(Number of study hours (total)/number of units (total .66
6 / 3
(course administrator (if more than one name is mentioned Name of the .67
: Email / Sabah Nouri : Namesabah.saaid.inj@atu.edu.iq
objectives Course .68
. Calculating quantities and analyzing prices and dimensions for construction works
Teaching and learning strategies .69

Introducing the student to how to calculate the quantity of construction items involved in the implementation of facilities and buildings, as well as beams, and analyzing those quantities into their culating prices and costs, primary resources with the principles of cal as well as contracting work, specifications, and engineering project .management	The strategy

Course structure .70

(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	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	Types of estimation	6	the second

		construction paragraphs, table .of quantities			
=	=	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 .price analysis	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 these works, standard guide for 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 concrete, building above the moisture barrier (bricks and concrete blocks), and mentioning the unified standard guide for its height, specifications, and its table of .quantities	Calculating the amount of structural sections above the moisture barrier	6	Seventh and eighth
=	=	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 of amount 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	Calculate the amount of concrete	12	eleventh And the twelfth

		and bridges above the openings, prices, and analyzing the mentioning the unified standard guide for the scope of .these works			
=	=	Calculating the quantity of concrete, rebar, and wooden 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 molds for various concrete 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 .domes and arches	Calculate the amount of concrete	6	Fifteent h the And sixteent h
=	=	Calculating the quantity of concrete, wooden molds, and reinforcing steel for all types of stairs, analyzing prices, and mentioning the unified standard guide for their height .and specifications	Calculate the amount of concrete	6	seventee nth
=	=	Calculating the quantity of secondary roofing works of all kinds, and flattening works for all its sections (gear, paddocks, and stayers), and mentioning the unified standard guide for .their height and specifications	Calculating the quantity of roofing secondary ,works of all types	6	eighteen
=	=	Calculating the quantity of finishing works (finished, whitewashing, spreading, and dyeing) and the furfural casing, analyzing the prices, and mentioning the unified	Calculating the amount of finishing work	12	nineteen th the And twenty

		heir type, standard guide for t specifications, and the table of .quantities			
=	=	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 guide for its scope, standard specifications, and schedule of .quantities	Calculating the amount of electrical and mechanical installation work	6	XXII
=	=	Calculating the quantity of water and sanitary foundation 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 water and sanitary foundation 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 analyzing their structures and prices, dimensions and schedule of quantities	Calculating the amount of work and some items of steel structures	6	th25
=	=	Contracts, contracting and contract organization, application books, tender form and instructions for contractors, maintenance	Contracts, contracting and contract organization, submission books	6	-twenty sixth

		period and advances and how .to calculate them			
		Definitions of management, interpersonal relations, 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

Course evaluation-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

learning and teaching Resources of-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 sources and books in Related -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

Date this description was prepared .76

2023

Available attendance forms .77
practical
(Number of study hours (total)/number of units (total .78
4 / 2
(mentioned Name of the course administrator (if more than one name is .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

sources and how to Teaching the student how to search scientific conduct research and projects with the help of specialized professors in the department, and to utilize the laboratories and equipment of the department and institute, as well as equipment in state departments, capabilities and in a manner commensurate according to the available .with the nature of the project	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
2023
attendance forms Available .86
theoretical
(Number of study hours (total)/number of units (total .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 pr p . .completion of work
Teaching and learning strategies .90

Determine the productivity of machines and their operating costs and .mpletion of worksupervise their proper co	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 machinery work (the effect of elevation, swelling and ...contraction of soil on	Complementing the engineering foundations of engineering machinery work	2	VI
=	=	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	Drilling machines	2	tenth The

		.scientific film showing			
=	=	Drilling machines (back shovel, waterwheel shovel, oyster scientific film shovel) with a .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 .scientific film is shown	Terraces	2	fourteenth
=	=	Types of skimmers, their benefits, and productivity calculations, with a scientific .film shown	Skimmers	2	Fifteenth
=	=	Sipper productivity: Use the scraper performance chart to .calculate productivity	Using the skimmer performance chart to calculate .productivity	2	sixteen
=	=	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	compacting Soil machines	2	eighteen
=	=	Complementing the forging calculating machines and productivity, pressure bulb .theory for distributing weights	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 concrete works	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 types, with a scientific film .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 presentation machines, with the 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		(Required textbooks (methodology, if any			
Construction planning methods - 1 (and equipment (Part One Translated by Dr. Muhammad Ezzi-Ayoub Sabri Al		(Main references (sources			

Guessing: by Medhat Fadil -2	
	Recommended supporting books and references (....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
2023
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 example + s 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 the theodolite .device	2	the first
=	=	Checking and adjusting the theodolite device for all types of	Checking and adjusting the	2	the second

		vertical and horizontal examinations, then finding the .device's constant	theodolite device		
=	=	Methods for measuring horizontal angles with a .theodolite device	of Methods measuring horizontal angles	4	the third
=	=	Polygons, types of polygons, .their purposes, and uses	ribbing		the fourth
=	=	Measure and correct the horizontal angles of a interior .closed polygon	Measure horizontal angles	2	Fifth
=	=	Methods of measuring the horizontal distances of the sides .of a polygon	Methods of measuring the horizontal distances of the sides of a .polygon	2	VI
=	=	closed and open Drawing .polygons	Drawing closed and open .polygons	2	Seventh
=	=	Raising beams for polygons using a theodolite device and .tape	Raising beams for polygons	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 .an open polygon	Calculate horizontal components and vertical components	2	tenth The
=	=	Methods for measuring vertical .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 target) that cannot be reached)		2	Thirteenth

		using a theodolite device			
=	=	Finding the height of a building target) by measuring three) angles of elevation or theodolite depression using a 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 length of an inaccessible building	2	Fifteenth
=	=	Curves/types	Curves	2	sixteen
=	=	Horizontal curves (elements of a simple circular curve) and 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 .horizontal curves	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 curve vertical	2	XXII

=	=	Triangulation, its purposes, use, choosing triangulation points, .triangulation networks	Triangulation	2	twenty third
=	=	for Measure the base line 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
=	=	Tachymetric survey, types of .tachymeter devices	Tachymetric area	2	sixth-twenty
=	=	Learn about modern electronic measuring devices and how to horizontal use them to measure .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 .curves vertical	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

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 .105

Najaf -Website of the Technical Institute	**(methodology, if any) Required textbooks**
	Surveying methodology book
	Recommended supporting books and references (....scientific journals, reports)
Internet sites	**Electronic references, Internet sites**