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

Academic Program and Course Description Guide

2025

Introduction:

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

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

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

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: Southern Technical University

Faculty/Institute: Technical Institute of Amarah

Scientific Department: Civil Techniques

Academic or Professional Program Name: Technical Diploma – Civil Techniques – Building & Construction

Final Certificate Name: Technical Diploma in Building & Construction

Academic System: Semester System

Description Preparation Date: 6/6/2025

File Completion Date: : 9/7/2025

Hasan Gazi Ghalloom

Head of Department

Date: 9/7/2025

Dr. Jehad Kadhum Mohammed

Scientific Associate Name:

Date 14, 7, 2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/7/2025

Signature: Dr. Akram Karim Khader

Approval of the Dean

1. Program Vision

To be a pioneer in providing high-quality technical education, contributing to the preparation of qualified and distinguished technical personnel capable of meeting the challenges of the construction and infrastructure sector and supporting sustainable development through technical innovation and the practical application of engineering knowledge.

2. Program Mission

The Department of Civil Technology, specializing in Building and Construction, offers an integrated academic program that combines theoretical knowledge with practical application. The program aims to prepare specialized technicians capable of efficiently and efficiently implementing, operating, and managing construction projects. The department seeks to enhance students' skills with knowledge and expertise that meet the needs of the local and regional labor market and support sustainable urban development.

3. Program Objectives

1. Preparing qualified and trained technical personnel capable of actively participating in various stages of construction work, including:

- Preparing and reading engineering drawings.
- Accurately calculating quantities and dimensions for civil works.
- Performing laboratory and field tests on construction materials.
- Implementing civil works using modern materials and advanced construction methods to meet labor market needs with high efficiency and quality.
- Analyzing technical problems, if any, and proposing appropriate solutions based on accumulated technical knowledge.

2. Strengthening the educational and ethical aspects of students by instilling national and humanitarian values such as:

- A spirit of dedication to work.

■ The principle of tolerance and cooperation.

■ Professional discipline and commitment.

■ Serving the community and nation within the framework of professional standards and social responsibility.

3. Developing students' intellectual and cultural development through:

■ Openness to global expertise and technology in the field of construction.

■ Study successful experiences in developed countries to improve performance in local projects.

■ Encourage critical and creative thinking, linking theory to practical application through case studies and applied research.

4. Link educational outcomes to market needs through ongoing collaboration with government and private entities, incorporating their requirements into the curriculum.

5. Develop personal and teamwork skills, and teach students to use modern tools and technologies in design and implementation, such as computer-aided design (CAD) programs and project management programs.

4. Program Accreditation

Non

5. Other external influences

Field visits to work projects within the geographical area, taking into account the selection of projects that contain modern methods of implementation in construction field, structural elements and materials used.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	17 1st Year 20 2nd Year	57 1st Year 66 2nd Year	87.8 Specialized 7.32 Auxiliary 4.88 General	The Graduate project is Yearly Course
Summer Training	Two Months			
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2023-2024 1st Year 1st Semester		Construction Materials /1	2	2
		Engineering Mechanics /1	2	1
		Surveying (1) /1	2	2
		Concrete Materials /1	1	2
		Mathematics /1	3	–
		Engineering Drawing/1/Board	–	6
		Principles of Computer /1	–	2
		Workshops	–	3
		Human Rights and Democracy	2	–
Sum.			12	18
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
			theoretical	**practical**
2023-2024 1st Year 2nd Semester		Construction Materials /2	2	2
		Engineering Mechanics /2	2	1
		Surveying (1) /2	2	2
		Concrete Materials /2	1	2
		Mathematics /2	3	–
		Engineering Drawing by AutoCAD	–	6
		English Language /1	2	–
		Arabic Language	2	–
Sum.			14	13
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
			theoretical	**practical**
2023-2024 2nd Year 1st Semester		Concrete Technology /1	2	2
		Technology of Construction /1	–	4
		Soil Mechanics /1	2	2
		Civil Drawing /1	–	6
		Surveying (2) /1	1	2

		Quantity Surveying /1	1	2
		Building and Fabricated Building /1	2	–
		Construction Equipment /1	2	–
		English Language /2	2	–
		PROJECT	–	2
		Crimes of Baath regime in Iraq	2	–
Sum.			14	20
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2023-2024 2nd Year 2nd Semester		Concrete Technology /2	2	2
		Technology of Construction /2	–	4
		Soil Mechanics /2	2	2
		Civil Drawing /2	–	6
		Surveying (2) /2	1	2
		Quantity Surveying /2	1	2
		Building and Fabricated Building /2	2	–
		Construction Equipment /2	2	–
		Principles of Computer /2	–	2
		PROJECT	–	2
Sum			10	22

8. Expected learning outcomes of the program

The academic program of the Civil Technology Department, specializing in construction and building, aims to prepare technically qualified graduates who possess the knowledge, skills, and values necessary to work efficiently in the construction and building industry. Learning outcomes are classified as follows:

Knowledge

1. The graduate must possess a solid knowledge base in the field of civil, building, and construction technologies.
2. Have a comprehensive understanding of the concepts and principles of applied civil engineering, particularly regarding building materials and their properties.
3. Be able to understand and read engineering drawings and apply them practically on work sites.
4. Be familiar with modern methods of implementing construction work, inspecting materials, and managing construction projects.
5. Be familiar with occupational safety standards, quality standards, and the principles of environmental sustainability in construction projects.

Skills

1. Graduates will be able to use laboratory and field tools and equipment to conduct the necessary tests on construction materials.
2. They will be able to accurately calculate quantities and dimensions using appropriate scientific methods.
3. They will be proficient in implementing various construction works (concrete, brick, finishing, earthworks, etc.) according to technical specifications.
4. They will be able to analyze simple construction problems and propose appropriate solutions.
5. They will be proficient in the use of specialized computer programs such as engineering drawing programs (AutoCAD), project management programs, and others.
6. They will acquire communication and teamwork skills, and communicate with relevant parties such as engineers, supervisors, and contractors.

Ethics

1. The graduate must adhere to professional ethics and proper professional conduct in the workplace.
2. Demonstrate responsibility, discipline, and dedication in performing assigned tasks.
3. Respect the principle of occupational safety and ensure its implementation at all construction sites.
4. Contribute to supporting sustainable development by adopting environmentally friendly and economical construction methods.
5. Possess critical thinking, problem-solving, and adaptability skills to a changing work environment.
6. Develop a sense of national and professional belonging and participate positively in serving their community and nation.

9. Teaching and Learning Strategies

The Civil Technology Program – Building and Construction major relies on a balanced mix of educational strategies that combine theory and practice, ensuring that students acquire the required knowledge, skills, and values efficiently. These strategies are characterized by flexibility and a focus

on interaction and practical application, consistent with the nature of technical programs and labor market requirements.

1. Theoretical Lectures

■ Lectures are provided as a basis for imparting scientific and technical knowledge to students.

■ They focus on explaining basic concepts in the field of construction and building, such as building materials, implementation techniques, occupational safety, and others.

■ Interactive presentation tools (presentations, educational videos, and diagrams) are used to enhance understanding.

2. Laboratories and Practical Practices

■ The practical aspect is an essential component of the program, as students are trained in the use of laboratory and field equipment and tools.

■ Practical experiments are conducted in construction materials, concrete, and soil laboratories.

■ It aims to enable students to apply what they have learned theoretically in a real-life work environment.

3. Final Applied Project

■ In the final year, students undertake an applied project that aims to utilize the knowledge and skills they have acquired throughout their years of study.

■ The project includes the stages of planning, preliminary design, blueprint reading, quantity calculation, and partial implementation under the supervision of specialized professors.

■ The project enhances the student's ability to work in teams, solve problems, and present technical presentations and manuals.

4. Field Training

■ The student participates in a two-month field training period on real construction sites.

■ This training allows them to interact directly with the work environment, learn about daily challenges, and practice skills under the supervision of specialized engineers and technicians.

■ The training is accompanied by a detailed report that is evaluated by the department.

5. Teamwork and Problem Solving

■ Classroom and extracurricular activities encourage teamwork and the development of communication skills.

■ Case studies and workshops are used to enhance critical thinking skills, analyze problems, and propose solutions.

■ Students are encouraged to participate in research activities and development initiatives within the institute.

6. Digital Education and E-Learning Methods

■ The program combines face-to-face instruction and e-learning through available e-learning platforms.

■ Digital educational resources (videos, explanations, interactive tests) are provided to enhance self-learning.

■ Blended learning is used in some courses to provide students with greater flexibility.

7. Continuous Assessment and Interactivity

■ A continuous assessment system is implemented, including oral and written exams, individual and group assignments, and mini-projects.

■ Various assessment tools are used, such as presentations, practical tests, and lab reports.

10. Evaluation methods

1. Monthly or quarterly written exams.
2. Quiz exams.
3. Writing scientific and practical reports.
4. Writing reports on the most important engineering matters observed during scientific trips.
5. Scientific seminars.
6. Homework.
7. Committees for discussing graduation projects for final stage students.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Civil	Structural			1	
lecturer	Civil	Structural			1	
Assistant lecturer	Civil	Structural			2	
Assistant lecturer	Civil	General			1	
Assistant lecturer	Civil	Construction Materials			1	
Assistant lecturer	Geology	Geology			1	

Assistant lecturer	Law	Special Law			1	
Assistant lecturer	Arabic	Arabic				1
Sum.					8	1

Professional Development

The Department of Civil Engineering – Building and Construction major places great emphasis on developing its teaching staff through organized strategies aimed at enhancing professional competence, updating scientific and educational knowledge, and improving the quality of the educational process. These strategies include the following:

Mentoring new faculty members

1. A comprehensive orientation program is prepared for new faculty members, including an introduction to the department's structure, strategic objectives, and the academic program within which they work.
2. New faculty members participate in the department's academic and administrative committees, with the goal of strengthening professional affiliation and increasing the level of active participation.
3. Developments related to the implementation of the academic program, including modifications to the curriculum, assessment methods, or labor market requirements, are clarified to ensure their rapid adaptation to the academic work environment.

Professional development of faculty members

1. Evaluating faculty performance through student feedback surveys:

Electronic or paper questionnaires are distributed at the end of each semester to evaluate faculty performance across several aspects, such as teaching style, communication with students, adherence to the curriculum, and the level of classroom interaction.

2. Faculty feedback surveys on academic development:

Regular questionnaires are used to survey faculty members' opinions on the best ways to develop curricula, improve teaching methods, and employ modern educational tools.

3. Organizing periodic development and training courses:

The department, in cooperation with relevant entities (such as the Quality Assurance Division, the Continuing Education Center, and partner universities), organizes training courses covering the latest global developments in the fields of:

• Effective teaching.

• Curriculum design.

• Use of digital learning tools and technology in the classroom.

• Writing standardized questions and evaluating performance.

4. Coordination with the Quality Assurance Division:

The department continuously cooperates with the Quality Assurance Division at the institute and the university to monitor the academic program's implementation in accordance with national and international quality standards. Development plans are also proposed based on the results of periodic evaluations.

12. Acceptance Criterion

First: Conditions for admission to the institute

1. Approval of admission requirements for students in accordance with the regulations of the Ministry of Higher Education and Scientific Research (central admission).

2. To successfully pass any special test or personal interview deemed appropriate by the institute or university council.

3. He must be medically fit for the specialty applied for.

Second: Conditions for admission to the scientific department

1. Choose the student's desire from more than one desire, arranged according to preference.

2. High school acceptance rate.

3. The course average of the department in which the student wishes to study.

4. Absorptive capacity of the scientific department.

13. The most important sources of information about the program

Information sources related to the academic program are essential to ensure transparency and provide a clear vision of its objectives and requirements. The following is a list of the most important sources that can be consulted for

accurate and up-to-date information about the Civil Technology Program - Building and Construction Specialization:

1. The Technical Institute's Academic Guide

Contains general information about the accredited educational programs.

Includes the department's academic structure, admission requirements, study system, and approved units.

2. The Program's Curriculum

An official document outlining the courses distributed over the semesters.

Includes a full description of each subject (topics, number of theoretical and practical hours, and prerequisites, if any).

3. Expected Learning Outcomes

A detailed description of the knowledge, skills, and values that the student is expected to acquire upon completion of the program.

This document serves as a basis for assessing the quality of the educational process.

4. Teaching and Learning Strategies and Student Assessment

A document outlining the educational methods used (lectures, labs, field training, etc.).

Includes the assessment tools used, such as tests, projects, practical exercises, and summative assessment.

5. Results of Student and Faculty Opinion Surveys

Periodic reports collected from student opinion surveys on faculty performance.

Reports on faculty opinions on course effectiveness and development proposals.

6. Reports of External Committee Visits and Follow-up

Reports prepared by committees tasked with monitoring program performance, whether from within or outside the institute.

This may include visits from the Ministry of Higher Education, accreditation bodies, or industry partners.

7. Field Training Reports

Detailed reports submitted by the student after the completion of the field training period.

Demonstrating the extent to which practical skills have been achieved and their relevance to the labor market.

8. Quality Assurance Department Documents

Periodic reports from the Quality Assurance Department at the institute and the university.

Including program evaluations, improvement plans, and performance indicators.

9. Graduation Projects and Student Workshops

Detailed documents prepared by students as part of the graduation project.

Reflecting the level of practical proficiency among graduates and measuring the extent to which program objectives have been achieved.

10. Institute and Department Portal

The official website of the institute or department, which contains general and updated information about the program.

It includes information about faculty members, achievements, events, and department-related news.

14. Program Development Plan

1. Curriculum Development

Regularly reviewing and updating the curriculum is one of the key pillars of ensuring the program keeps pace with scientific and technical developments in the field of construction. The department aims to update the curriculum every two years, introducing new topics such as project management (BIM) systems, smart construction, and urban sustainability, as well as modifying or deleting subjects that no longer meet labor market requirements.

2. Faculty Development

The program focuses on improving the efficiency of faculty members by organizing periodic training courses that cover the latest developments in effective teaching methods and the use of digital learning tools. The department also encourages faculty members to participate in local and international scientific conferences and seminars and supports their continued participation in postgraduate studies when available, with the aim of raising academic and professional performance.

3. Improving Practical Aspects and Training

The department pays special attention to the practical aspect of the educational process by improving the infrastructure of laboratories and providing modern equipment for testing building materials and soil. The number of hours allocated for practical training within the curriculum is also being increased, in addition to strengthening partnerships with construction companies to provide field training opportunities for students, contributing to their job market preparation.

4. Integrating Digital Learning and Technology Tools

The program aims to develop a dedicated electronic platform containing digital educational materials (videos, presentations, and interactive tests) to enhance self-learning. Faculty members are also trained on the use of e-learning and blended learning tools, and open electronic educational resources (OER) are provided to students to facilitate access to knowledge.

5. Continuous Evaluation and Performance Indicators

The program aims to enhance the use of technology tools in the educational process by encouraging faculty members to employ available digital tools, such as presentations, educational videos, and online tests available on public platforms or within the institute. Instructors are also trained on the use of e-learning and blended learning tools to improve the quality of instruction and increase student engagement. Additionally, the provision of open electronic educational resources

(OER) is encouraged to support self-learning and facilitate access to knowledge.

6. Strengthening Relations with the Labor Market

The department is committed to strengthening its partnership with the construction sector by organizing periodic meetings with representatives of companies and government institutions to identify market needs and develop the curriculum accordingly. Engineers and experts from the professional field are also invited to deliver guest lectures and workshops, in addition to monitoring graduates to determine their adaptability to job requirements and suggesting appropriate adjustments.

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	B5	C1	C2
2023-2024 1st Year		Construction Materials		√	√		√		√	√	√	√	√	√
		Engineering Mechanics		√	√						√	√	√	√
		Surveying (1)		√	√		√	√	√	√	√	√	√	√
		Concrete Materials		√	√		√		√	√	√	√	√	√
		Mathematics									√	√	√	√
		Engineering Drawing		√	√	√		√			√	√	√	√
		Principles of Computer				√					√	√	√	√
2023-2024 2nd Year		Concrete Technology		√	√		√		√	√	√	√	√	√
		Technology of Construction		√	√	√	√		√	√	√	√	√	√
		Soil Mechanics		√	√		√		√	√	√	√	√	√
		Civil Drawing		√	√	√		√			√	√	√	√
		Surveying (2)		√	√	√	√	√	√	√	√	√	√	√
		Quantity Surveying		√	√	√		√			√	√	√	√
		Building and Fabricated Building		√	√						√	√	√	√
		Construction Equipment		√	√						√	√	√	√

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

Course Description Form

1. Course Name:					
Construction Materials					
2. Course Code:					
3. Semester / Year:					
Semester / 1st Year					
4. Description Preparation Date:					
6/6/2025					
5. Available Attendance Forms:					
Presence only					
6. Number of Credit Hours (Total) / Number of Units (Total)					
120 hours/ year (2 theoretical + 2 practical over 30 weeks) / 8 units (4 units per semester)					
7. Course administrator's name (mention all, if more than one name)					
Name: A.L. Sara Talib Kattab Email: sarah.kattab@stu.edu.iq					
8. Course Objectives					
Familiarizing students with the properties of construction materials and various production methods. Additionally, it introduces them to contemporary alternatives and modern production techniques. Finally, students are equipped to conduct standard tests, assessing how well construction materials adhere to specifications and evaluating their suitability for use in construction. This comprehensive approach ensures a balance of strength, safety, and cost-effectiveness in construction practices.					
9. Teaching and Learning Strategies					
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.				
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					

1st	4 hours (2 theoretical + 2 practical)	1 - Providing the student with comprehensive knowledge of the types of building materials, their properties, methods of production and uses. 2- The ability to classify materials, conduct standard laboratory tests, and determine their suitability and extent of application to the purpose for which they are used.	Theoretically a general description of the physical properties and standard specifications of building materials and their uses in buildings Practically identify the laboratory and its basic equipment and balances	Theoretical and practical lectures	exams, discussion and reports
2nd	4 hours (2 theoretical + 2 practical)		Clay bricks and methods of manufacture practically tests of bricks - density - specific weight		
3rd	4 hours (2 theoretical + 2 practical)		Properties, uses and specifications of clay bricks and practically brick tests - absorption, 1/2 hour, 24 hours, efflorescence		
4th	4 hours (2 theoretical + 2 practical)		Tests for clay bricks and practically Tests of bricks - Compressive strength Brick tests - Dissolved salts		
5th	4 hours (2 theoretical + 2 practical)		Lime bricks, Glass bricks Properties and methods of manufacture. practice tests of glass bricks and lime bricks Density absorption and compressive strength		
6th	4 hours (2 theoretical + 2 practical)		Concrete bricks Concrete blocks (properties and method of manufacture with an explanation of the difference between these two). practice tests of concrete blocks and concrete blocks, absorption density, dissolved Amino Acids		
7th	4 hours (2 theoretical + 2 practical)		Thermostone properties and methods of manufacture. practical tests of Thermostone, density, absorption, compressive strength		

8th	4 hours (2 theoretical + 2 practical)		Visit with discussion of the visit to the brick factory		
9th	4 hours (2 theoretical + 2 practical)		Building stone classification and types.		
10th	4 hours (2 theoretical + 2 practical)		Uses of building stone according to its types		
11th	4 hours (2 theoretical + 2 practical)		Binders and their types with tests of binders that are not resistant to moisture plaster, standard strength and hardening time		
12th	4 hours (2 theoretical + 2 practical)		Moisture-resistant materials (cement mortar cement mortar - Quick lime) Quick lime How to make its properties with a check of the tensile strength of the plaster		
13th	4 hours (2 theoretical + 2 practical)		Moisture-resistant binder (plaster) properties and manufacture with durability of plaster		
14th	4 hours (2 theoretical + 2 practical)		Gypsum products - their types, properties, secondary ceiling materials and types, with a fineness check for gypsum products and plaster		
15th	4 hours (2 theoretical + 2 practical)		Tile application materials, types. With standard checks for mosaic tile		
	2nd Semester				
1st	4 hours (2 theoretical + 2 practical)		Methods of manufacture Method of application – joints with standard checks for concrete slabs and pavements include, salts and absorbers		
2nd	4 hours (2 theoretical		Moisture inhibitors types and reason for use with pressure check and		

	+ 2 practical)		refractive standards for tile and concrete slabs		
3rd	4 hours (2 theoretical + 2 practical)		High moisture prevention materials, types, methods of manufacture and uses with standard specifications for checking moisture inhibitors		
4th	4 hours (2 theoretical + 2 practical)		Semi-elastic and elastic moisture suppressants, types, uses, methods of manufacture, and liquid moisture suppressants.		
5th	4 hours (2 theoretical + 2 practical)		Epoxy definition properties types of uses with standard tests of binder (epoxy)		
6th	4 hours (2 theoretical + 2 practical)		Wood - its origin, types used and methods of use with vertical and parallel pressure check of wood fibers		
7th	4 hours (2 theoretical + 2 practical)		Methods of drying wood and wood defects with splitting inspection of wood and bending inspection		
8th	4 hours (2 theoretical + 2 practical)		Metals (ferrous and non-ferrous materials) and their uses in buildings.		
9th	4 hours (2 theoretical + 2 practical)		Iron methods of manufacture, types and uses with tensile examination of iron		
10th	4 hours (2 theoretical + 2 practical)		Thermal insulation materials with standard specifications for inspection of heat-insulating materials		
11th	4 hours (2 theoretical + 2 practical)		Sound insulation materials with standard specifications for the inspection of soundproofing materials		
12th	4 hours (2 theoretical + 2 practical)		Dyes with standard specifications for material inspection for dyes		

13th	4 hours (2 theoretical + 2 practical)		Glass with standard checks for glass		
14th	4 hours (2 theoretical + 2 practical)		Asphalt Properties of asphalt materials with ductility examination by penetration method of asphalt _cement and ductility examination by Ring and Ball Test method		
15th	4 hours (2 theoretical + 2 practical)		Types of asphalt and its uses in construction works with asphalt compliance test and flash point test and Spot Test		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Building construction / Artin Levine and Zuhair Sako. Construction materials / Jalal Bashir and Saeed Abdel Aali. Unified Building Code for Parts One and Two / Emad Darwish
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:

Engineering Mechanics

2. Course Code:

3. Semester / Year:

Semester / 1st Year

4. Description Preparation Date:

6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours per year (2 theoretical + 1 practical over 30 weeks) / 6 units (3 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: L. Ali Abdul Zahra Hassan Email: ali.allami@stu.edu.iq
8. Course Objectives
Teaching the student how to analyze the Structure and find the sum of the forces, stresses and Strain generated in their parts as a result of external loads and their relationship to the properties of the materials that make up the structural member, also to designing engineering Structure that meet the requirements of safety and economy.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	1st Semester				
1st	3 hours (2 theoretical + 1 practical)	1- The student is introduced to the basic principles of engineering mechanics. 2- Acquiring initial skills in analyzing structural elements and finding the results of forces and stresses to be the basis for designing	Definition of mechanics, a general review of physics topics related to the topics of matter, trigonometric ratios of angles, vector and non-vector quantities.	Theoretical and practical lectures	exams, discussion and reports
2nd	3 hours (2 theoretical + 1 practical)		Analysis and composition of forces, the law of triangle of forces and polygon of forces.		
3rd	3 hours (2 theoretical + 1 practical)		Applications on the subject of force analysis.		
4th	3 hours (2 theoretical + 1 practical)		The determination of the forces.		

5th	3 hours (2 theoretical + 1 practical)	construction Structure	Couples.		
6th	3 hours (2 theoretical + 1 practical)		The result of converging, non-converging and parallel forces.		
7th	3 hours (2 theoretical + 1 practical)		Applications on the subject of net forces.		
8th	3 hours (2 theoretical + 1 practical)		Equilibrium, drawing a free body diagram, equilibrium equations, equilibrium in the case of convergent, non-convergent and parallel forces (two-dimensional).		
9th	3 hours (2 theoretical + 1 practical)		Analysis of Beams.		
10th	3 hours (2 theoretical + 1 practical)		Analysis of Frames		
11th	3 hours (2 theoretical + 1 practical)		Equilibrium of forces (three-dimensional).		
12th	3 hours (2 theoretical + 1 practical)		Analysis of truss (Joint Method).		
13th	3 hours (2 theoretical + 1 practical)		Analysis of Truss (Section Method).		
14th	3 hours (2 theoretical + 1 practical)		Friction, nature of friction, friction theory, laws of friction, types of friction.		
15th	3 hours (2 theoretical + 1 practical)		General applications on the subject of friction.		
2nd Semester					
1st	4 hours (2 theoretical		Methods of manufacture Method of application –		

	+ 2 practical)		joints with standard checks for concrete slabs and pavements include, salts and absorbers		
2nd	4 hours (2 theoretical + 2 practical)		Moisture inhibitors types and reason for use with pressure check and refractive standards for tile and concrete slabs		
3rd	4 hours (2 theoretical + 2 practical)		High moisture prevention materials, types, methods of manufacture and uses with standard specifications for checking moisture inhibitors		
4th	4 hours (2 theoretical + 2 practical)		Semi-elastic and elastic moisture suppressants, types, uses, methods of manufacture, and liquid moisture suppressants.		
5th	4 hours (2 theoretical + 2 practical)		Epoxy definition properties types of uses with standard tests of binder (epoxy)		
6th	4 hours (2 theoretical + 2 practical)		Wood - its origin, types used and methods of use with vertical and parallel pressure check of wood fibers		
7th	4 hours (2 theoretical + 2 practical)		Methods of drying wood and wood defects with splitting inspection of wood and bending inspection		
8th	4 hours (2 theoretical + 2 practical)		Metals (ferrous and non-ferrous materials) and their uses in buildings.		
9th	4 hours (2 theoretical + 2 practical)		Iron methods of manufacture, types and uses with tensile examination of iron		
10th	4 hours (2 theoretical + 2 practical)		Thermal insulation materials with standard specifications for inspection of heat-insulating materials		
11th	4 hours (2 theoretical		Sound insulation materials with standard specifications for the		

	+ 2 practical)		inspection of soundproofing materials		
12th	4 hours (2 theoretical + 2 practical)		Dyes with standard specifications for material inspection for dyes		
13th	4 hours (2 theoretical + 2 practical)		Glass with standard checks for glass		
14th	4 hours (2 theoretical + 2 practical)		Asphalt Properties of asphalt materials with ductility examination by penetration method of asphalt _cement and ductility examination by Ring and Ball Test method		
15th	4 hours (2 theoretical + 2 practical)		Types of asphalt and its uses in construction works with asphalt compliance test and flash point test and Spot Test		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Engineering Mechanics – Higdon Engineering Mechanics – Singer Engineering Mechanics - Hibbeler
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:

Surveying (1)
2. Course Code:
3. Semester / Year:
Semester / 1st Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours per year (2 theoretical + 2 practical over 30 weeks) / 8 units (4 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Ali Maher Adnan Email: ali.m.adnan@stu.edu.iq
8. Course Objectives
Granting the student, the ability to deal with various traditional and modern surveying tools and devices, developing the student's capabilities in field monitoring, recording measurements, conducting cadastral calculations, producing plans, and thus working optimally when working in one of the projects within the specialization of the subject.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	1st Semester				
1st	4 hours (2 theoretical + 2 practical)	1- The student is introduced to the basic principles of engineering mechanics. 2- Acquiring initial skills in	Definition of Survey, its fields, its divisions, its uses, and units of measurement.	Theoretical and practical lectures	exams, discussion and reports
2nd	4 hours (2 theoretical + 2 practical)		Measuring horizontal distances on flat lands (routing process) Measuring the horizontal		

		analyzing structural elements and finding the results of forces and stresses to be the basis for designing construction Structure	distance on irregular slope ground.		
3rd	4 hours (2 theoretical + 2 practical)		Measuring the horizontal distances on the slope lands (regular slope) (if the height difference is known, if the degree of slope of the earth is known, if the angle of slope of the earth is known).		
4th	4 hours (2 theoretical + 2 practical)		Erection and projection of columns (erection methods and projection methods), overcoming obstacles (obstacles) to the measurement of horizontal distances.		
5th	4 hours (2 theoretical + 2 practical)		Scanning with tape (filler cases when lifting).		
6th	4 hours (2 theoretical + 2 practical)		The planar panel has its parts of the methods of lifting the planar panel (ray method).		
7th	4 hours (2 theoretical + 2 practical)		Front cross lift method, rotation method (lock error and how to correct it) Advantages and disadvantages of planar panel wiping.		
8th	4 hours (2 theoretical + 2 practical)		Settlement definitions related to its purposes.		
9th	4 hours (2 theoretical + 2 practical)		How to calculate the levels of points by the method of the balance surface and solve examples.		
10th	4 hours (2 theoretical + 2 practical)		How to calculate the levels of points by the method of rise and fall and solve examples.		
11th	4 hours (2 theoretical + 2 practical)		Double leveling, the effect of the earth's spherical and optical refractions on the leveling work.		
12th	4 hours (2 theoretical		Inverted settlement Mutual settlement (reverse) with solving examples.		

	+ 2 practical)				
13th	4 hours (2 theoretical + 2 practical)		Sources of errors in the settlement work, the degree of accuracy, the amount of error allowed.		
14th	4 hours (2 theoretical + 2 practical)		Longitudinal sections Drawing the longitudinal section solve examples.		
15th	4 hours (2 theoretical + 2 practical)		Cross sections Find the levels of cross section points Draw the cross section.		
2nd Semester					
1st	4 hours (2 theoretical + 2 practical)		Construction line Calculate the slope of the construction line Find the levels of the construction line points if the slope is known (drawing the proposed line for a project).		
2nd	4 hours (2 theoretical + 2 practical)		Calculating land areas and cross sections using demarcation methods, mathematical laws and coordinates.		
3rd	4 hours (2 theoretical + 2 practical)		Calculate the volumes of the earth quantities for digging and backfilling.		
4th	4 hours (2 theoretical + 2 practical)		Checking and adjusting the settlement device balancing settlement lines (settlement budget).		
5th	4 hours (2 theoretical + 2 practical)		Contour lines Properties of the contour period Factors on which the contour period depends Contour recess Determination of contour lines (direct method).		
6th	4 hours (2 theoretical + 2 practical)		Methods of setting contour lines (indirect methods), section method, checkpoint method, squares method (grid leveling).		
7th	4 hours (2 theoretical + 2 practical)		Drawing contour lines (calculation method and difference division method).		

8th	4 hours (2 theoretical + 2 practical)		Regressions Calculate the volumes of tanks (tanks) Drawing sections of contour lines.		
9th	4 hours (2 theoretical + 2 practical)		Calculation of areas using the planometer.		
10th	4 hours (2 theoretical + 2 practical)		Deviations Circular deviation abbreviated local gravity.		
11th	4 hours (2 theoretical + 2 practical)		Scanning (lifting) using the compass and practical exercises on how to calculate the survey with the compass.		
12th	4 hours (2 theoretical + 2 practical)		Curves Horizontal curves types (circular and gradient) elements of simple circular curve and drawing each type.		
13th	4 hours (2 theoretical + 2 practical)		Simple circular curve design (equations) Drawing a simple circular curve.		
14th	4 hours (2 theoretical + 2 practical)		Vertical curves vertical curve design.		
15th	4 hours (2 theoretical + 2 practical)		Construction line Calculate the slope of the construction line Find the levels of the construction line points if the slope is known (drawing the proposed line for a project).		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Surveying Engineering / Abbas Zeidan Khalaf Principles of Surveying Engineering / Juma Dawood Engineering and cadastral survey / Ziad Abdul-

	Jabbar Al-Bakr Surveying engineering / Moffit F.H
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering Egyptian Survey Magazine
Electronic References, Websites	

1. Course Name:	
Concrete Materials	
2. Course Code:	
3. Semester / Year:	
Semester / 1st Year	
4. Description Preparation Date:	
6/6/2025	
5. Available Attendance Forms:	
Presence only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hours per year (1 theoretical + 2 practical over 30 weeks) / 6 units (3 units per semester)	
7. Course administrator's name (mention all, if more than one name)	
Name: A.L. Khalaf Gomua Khalaf Email: khalaf.g.khalaf@stu.edu.iq	
8. Course Objectives	
Introducing students to the properties of concrete materials and their production methods, as well as acquainting them with modern alternatives and contemporary production methods. Additionally, qualifying students to conduct standard tests to assess the compliance of concrete materials with specifications and determine their suitability for construction applications, thereby ensuring strength, safety, and cost-effectiveness.	
9. Teaching and Learning Strategies	
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	3 hours (1 theoretical + 2 practical)	1- Introducing the student to the materials involved in the work of concrete, its properties and methods of manufacturing	Theoretically a general description of the physical properties and standard specifications of concrete materials and their uses in buildings Practically identify the laboratory and its basic equipment and balances	Theoretical and practical lectures	exams, discussion and reports
2nd	3 hours (1 theoretical + 2 practical)		Types of cement, its properties, methods of manufacture, and knowing how to examine the texture of ordinary white and Portland cement		
3rd	3 hours (1 theoretical + 2 practical)		Properties, uses and specifications of cement and practically knowing the initial and final cohesion time of Portland cement and fast hardening and comparing it with the standard		
4th	3 hours (1 theoretical + 2 practical)		Tests for tensile and compressive strength of cement mortar and how to obtain high resistance using additives		
5th	3 hours (1 theoretical + 2 practical)		Cement softness and how it affects the rehydration process of cement paste and how to obtain smoothness within standard specifications		
6th	3 hours (1 theoretical + 2 practical)		Definition of cement stability, the reason for cement expansion, expansion limits, and methods of measurement using Les Chatelet and Autoclave methods		
7th	3 hours (1 theoretical + 2 practical)		Different methods of sampling standard aggregates of coarse and fine aggregates and		

			distinguish between methods of coarse aggregate and methods of fine aggregate		
8th	3 hours (1 theoretical + 2 practical)		How to calculate the humidity of coarse and fine aggregates and its effect on the concrete mixture		
9th	3 hours (1 theoretical + 2 practical)		Compact and non-stacked density and how to perform tests		
10th	3 hours (1 theoretical + 2 practical)		Inflation in sand and how to calculate and its effect on concrete and measure the percentage of abrasion corrosion of coarse aggregate and calculate the percentage of extinction		
11th	3 hours (1 theoretical + 2 practical)		Gradient with coarse aggregate and the method of arranging standard sieves and knowing how to calculate the gradient according to the standard specification		
12th	3 hours (1 theoretical + 2 practical)		Gradient with fine aggregate and the method of arranging standard sieves and knowing how to calculate the gradient according to the standard specification		
13th	3 hours (1 theoretical + 2 practical)		Specific weight (relative density) and absorption of coarse aggregate and the extent of its effect on the concrete mix and methods of examination		
14th	3 hours (1 theoretical + 2 practical)		Specific weight (relative density) of fine aggregate and absorption Definition and effect on the concrete mix and methods of examination and comparison with the specification		
15th	3 hours (1 theoretical + 2 practical)		Suspended materials and clay materials for coarse aggregate and their impact on the cohesion of the		

			concrete mixture, their harms and methods of treatment and examination of the percentage of salts of fine aggregates (sulfur)		
2nd Semester					
1st	3 hours (1 theoretical + 2 practical)		Definition of abrasion ratio of coarse aggregate, extinction rate, method of examination and calculation using Los Angeles device		
2nd	3 hours (1 theoretical + 2 practical)		Organic matter and its effect on fine aggregates, its harms and methods of treatment		
3rd	3 hours (1 theoretical + 2 practical)		Definition of light aggregates and method of calculating gradient		
4th	3 hours (1 theoretical + 2 practical)		Sieve analysis of mixed coarse and fine aggregates.		
5th	3 hours (1 theoretical + 2 practical)		Porosity and absorption of light aggregates		
6th	3 hours (1 theoretical + 2 practical)		Know the durability of different types of aggregates and compare them with standard specifications		
7th	3 hours (1 theoretical + 2 practical)		Mixing water and the presence of plankton, clay and sulfur materials, chlorides and organic materials whose effect on the concrete mix is known		
8th	3 hours (1 theoretical + 2 practical)		The presence of plankton, clay materials, salts and chlorides and their effect on concrete mixing water		
9th	3 hours (1 theoretical + 2 practical)		Physical tests of different types of fibers used in fiber concrete with a focus on tensile rectifier		
10th	3 hours (1 theoretical + 2 practical)		Fly ash (carbon and salts) and its effect on concrete		

11th	3 hours (1 theoretical + 2 practical)		Types of concrete additives and measurement of density and specific weight		
12th	3 hours (1 theoretical + 2 practical)		Softness of solid additives and viscosity of liquid additives		
13th	3 hours (1 theoretical + 2 practical)		Percentage of salts and sediments of solid and liquid additives		
14th	3 hours (1 theoretical + 2 practical)		Effect of Retardant Additives on Initial and Final Cohesion Time of Cement		
15th	3 hours (1 theoretical + 2 practical)		Effect of accelerated additives on the initial and final cohesion time of cement		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Properties of concrete/ Neville Concrete Technology
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:

Mathematics

2. Course Code:

3. Semester / Year:

Semester / 1st Year

4. Description Preparation Date:

6/6/2025

5. Available Attendance Forms:

Presence only

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

90 hours per year (3 theoretical over 30 weeks) / 6 units (3 units per semester)

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

Name: A.L. Sarah Fawzi Ghafel
Email: sara.ghafel@stu.edu.iq

8. Course Objectives

Developing student's skill in employing the principles of mathematics in various engineering applications and developing their skills to benefit from them in other engineering lessons.

9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					
1st	3 hours theoretical	1- The student learns about the uses of mathematics in the applications of engineering 2- Developing intellectual, logical and analytical skills to benefit from them in various aspects of engineering study.	Matrices, determinants, properties.	Theoretical lectures	exams, discussion and reports
2nd	3 hours theoretical		Solving linear equations, Cramer method, applications to determinants, solving force analysis equations.		
3rd	3 hours theoretical		Vectors, vector analysis, vector and scalar quantities, vector algebra, scalar and vector multiplication, vector applications, calculation of moment applications, work.		
4th	3 hours theoretical		function, trigonometric functions and trigonometric relations, logarithmic function, exponential function.		

5th	3 hours theoretical		Ends, the end of algebraic and trigonometric functions		
6th	3 hours theoretical		Differentiation, derivative, derivative of algebraic functions, chain rule, derivative of higher-order functions.		
7th	3 hours theoretical		The derivative of trigonometric functions, the derivative of logarithmic functions, the derivative of the exponential function.		
8th	3 hours theoretical		Derivative applications, tangent and column equation, velocity and acceleration.		
9th	3 hours theoretical		General physical and engineering applications, drawing functions.		
10th	3 hours theoretical		Integral, indefinite integration, integration of algebraic, logarithmic, exponential and trigonometric functions.		
11th	3 hours theoretical		Definite integral, applications of definite integral, area under the curve, area between the two curves. For rotational volumes, curved arc length.		
12th	3 hours theoretical		General methods of integration include compensation and segmentation.		
13th	3 hours theoretical		Physical and engineering applications (work, momentum, momentum, inertial momentum).		
14th	3 hours theoretical		Solving discrete, homogeneous and linear differential equations with their different applications within the field of specialization.		
15th	3 hours theoretical		Complex numbers, addition subtraction, multiplication, division.		
2nd Semester					
1st	3 hours theoretical		Integral, indefinite integral, integration of algebraic functions, and logarithm.		

2nd	3 hours theoretical		Integration of exponential and trigonometric functions.		
3rd	3 hours theoretical		Definite integral, applications of definite integral, area under the curve, area between curves.		
4th	3 hours theoretical		Rotational volumes, curved arc length.		
5th	3 hours theoretical		Physical and engineering applications (work, momentum, momentum, inertial momentum).		
6th	3 hours theoretical		General methods of integration include compensation and segmentation.		
7th	3 hours theoretical				
8th	3 hours theoretical		Use of partial, exponential and logarithmic fractions.		
9th	3 hours theoretical		Numerical methods in integration, trapezoidal rule, base (calculation of the volume of earth quantities and the area of longitudinal sections).		
10th	3 hours theoretical		Solving discrete, homogeneous and linear differential equations with their different applications within the field of specialization.		
11th	3 hours theoretical		Find the value of the highest or lowest point of the vertical curve.		
12th	3 hours theoretical		Complex numbers, addition subtraction, multiplication, division.		
13th	3 hours theoretical		Polar formula, conversion of the polar formula to algebra and vice versa, forces and roots, representation of roots by drawing.		
14th	3 hours theoretical		Statistical operations, frequency distributions, histogram, frequency curve, arithmetic mean, range, standard deviation, variance and relativity.		
15th	3 hours theoretical				
11. Course Evaluation					

100 Marks for each semester, distributed as follows: 40 marks ((30 theoretical) Mid. Exams + 10 marks for Activities). 60 marks for the final exam (theoretical)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Thomas' Calculus – G., B., Thomas, M., D., Weir, J. Hass
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

13. Course Name:	
Engineering Drawing	
14. Course Code:	
15. Semester / Year:	
Semester / 1st Year 1st Semester – by using Boards 2nd Semester – by using AutoCAD	
16. Description Preparation Date:	
6/6/2025	
17. Available Attendance Forms:	
Presence only	
18. Number of Credit Hours (Total) / Number of Units (Total)	
180 hours per year (6 practical over 30 weeks) / 12 units (6 units per semester)	
19. Course administrator's name (mention all, if more than one name)	
Name: Eng. Farah Abd-Elhasan Hanun Email:	
20. Course Objectives	
Developing the student's skill in employing the principles of mathematics in various engineering applications and developing their skills to benefit from them in other engineering lessons.	
21. Teaching and Learning Strategies	
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies.

	4. Discussion strategy.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	6 hours practical	1- Introducing the student to the engineering drawing tools and how to use them, preparing and reading the drawing board and the contents of the plans 2- Developing the creative and imaginative aspect and training the student on the geometric perspective and projections 3- Identifying and mastering many engineering operations that can be used in the reality of work, such as surveying operations from fixing boundaries, dropping columns and determining centers	Tools and pens used in drawing	Practical lectures	Written exams and evaluation of drawing boards
2nd	6 hours practical		Geometric calligraphy (Latin letters and Arabic letters).		
3rd	6 hours practical		Engineering Operations		
4th	6 hours practical		Completion of engineering processes		
5th	6 hours practical		Completion of engineering processes		
6th	6 hours practical		Ovals		
7th	6 hours practical		Vertical projection		
8th	6 hours practical		Vertical projection		
9th	6 hours practical		Dimensions on shapes		
10th	6 hours practical				
11th	6 hours practical				
12th	6 hours practical		Axial projection		
13th	6 hours practical		Dimensions in axial projection and scale		
14th	6 hours practical		Applications in axial projection theory		
15th	6 hours practical				
2nd Semester					
1st	6 hours practical	1- Identify the program and its uses in drawing and	Continue to take applications in the theory of axial projection such as shapes containing inclined surfaces and shapes		

		its applications and switch from manual drawing to electronic drawing to increase efficiency and accuracy	containing cavities or cylindrical protrusions.		
2nd	6 hours practical		Explain the principles of grouping projections into stereoscopic shapes.		
3rd	6 hours practical		Continue to take applications on the aggregation of projections of container shapes on inclined surfaces, protrusions or cylindrical cavities.		
4th	6 hours practical				
5th	6 hours practical		Explain the principles of cutting and its importance in engineering drawing with methods of dispersion.		
6th	6 hours practical		Continue to take applications on sections for shapes containing overlapping cavities.		
7th	6 hours practical				
8th	6 hours practical		Preliminary applications on the computer aid design program (AutoCAD) in order to carry out simple exercises in geometric operations, drawing polygons and principles of vertical projection.		
9th	6 hours practical				
10th	6 hours practical				
11th	6 hours practical		Principles of architectural drawing, the importance of architectural drawing Types of architectural plans and how to organize them.		
12th	6 hours practical		Architectural symbols with applications on them.		
13th	6 hours practical		Draw a horizontal plan of a small house with a scale of 1:100.		
14th	6 hours practical		Drawing sections in foundations and walls.		
15th	6 hours practical		Drawing an elevation of the house with enlarged vertical sections.		

23. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((30 practical) Mid. Exams + 20 marks for Activities).
50 marks for the final exam

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	

Main references (sources)	
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:					
Principles of Computer /1					
2. Course Code:					
3. Semester / Year:					
Semester / 1st Year					
4. Description Preparation Date:					
6/6/2025					
5. Available Attendance Forms:					
Presence only					
6. Number of Credit Hours (Total) / Number of Units (Total)					
30 hours in the first semester (2 hours of practical over 15 weeks) / 2 units					
7. Course administrator's name (mention all, if more than one name)					
Name: A.L. Ali Maher Adnan Email: ali.m.adnan@stu.edu.iq					
8. Course Objectives					
Introducing student to the computers with an idea of its prospects and use in different fields and the principles of programming and providing him with a skill in using the computer to implement programs prepared previously for application in his field of specialization.					
9. Teaching and Learning Strategies					
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.				
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					

1st	2 hours practical	1- The student learns about the uses of mathematics in the applications of engineering 2- Developing intellectual, logical and analytical skills to benefit from them in various aspects of engineering study.	Definition of computers: generations, components: hardware and software (system software and application programs).	practical lectures	exams, discussion and reports
2nd To 7th	2 hours practical Each week		* Windows 10: the concept of the Windows system, its basic features and requirements, system operation, components of the home screen of the desktop , the concept of the icon, the method of dealing with mouse activities, the importance and components of the taskbar, taking advantage of Start to enter programs, the concept of loaded tasks, exit the system and turn off the calculator (Shut Down). * The concept of the window for any program and identify its main components, dealing with desktop icons such as: (My Documents; My Computer ; Recycle Bin). * Identify (My Computer) in terms of disks, folders and file and how to deal with the format of floppy disks and copy folders and files, benefit from cutting and pasting and know the characteristics 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. * Take advantage of Control Panel programs such as the (Mouse) icon and the (Display) icon and how to change the desktop background and control the screen saver and change its appearance to the desktop background and control the screen saver and change the		

			appearance of window menus and colors, icon (Add; Remove ;Program) in adding and deleting programs . * Take advantage of the (Run) option in the implementation of programs appropriately, as well as switch to the operating system signal (MS-DOS) and deal with its commands. * Use entertainment programs such as (Window Media Player) in playing movies. * Take advantage of additional programs (Accessories) such as calculator * Dealing with the drawing program (Paint) in creating, saving and retrieving fees through the commands it provides. * Handle the Notes window (Notepad; WordPad (in writing texts, saving them, retrieving them, printing them, changing the style of printing and formatting. * Learn how to get help and its different methods.		
8th To 15th	2 hours practical Each week		Introduction to AutoCAD version (2000) and explanation of the program's interface. Screen Settings (Shape; Grid ; Limits). Draw menu. List of revisions (Amendment). List (Object Shape). Layers. Dimensions . Writing . Store files and import files from other programs and export them. Making (blocks) and		

			importing parts of other programs. Drawing a plan for a simple house . Drawing a section of a simple building. Printing, cloning and taking out files on the printer and plotter.		

11. Course Evaluation
100 Marks for the semester, distributed as follows: 50 marks ((30 practical) Mid. Exams + 20 marks for Activities). 50 marks for the final exam (practical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Windows & AutoCAD user's manual
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
Workshops
2. Course Code:
3. Semester / Year:
Semester / 1st Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours in the first semester (3 hours practical over 15 weeks) / 3 units
7. Course administrator's name (mention all, if more than one name)
Name: Email:
8. Course Objectives

	Acquire handy skill in the use of hand tools, measuring tools and operating machines necessary to prepare the student as a technician in the building and construction specialization.
9.	Teaching and Learning Strategies
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	3 hours practical	1- Introducing the student to the various machines and manual tools. 2- Qualifying the student to deal safely and correctly with these tools and machines and employ them in practice	Industrial Safety: General rules for the prevention of accidents and health care equipment and methods of use.	practical lectures	exams, discussion and reports
2nd	3 hours practical		Carpentry: The basic principles in the carpentry of models and the use of hand tools (cutting saw, punching saw, hammer, scraper, trap, radiator).		
3rd	3 hours practical				
4th	3 hours practical		The use of band saw, disc, grinding machine, piston.		
5th	3 hours practical				
6th	3 hours practical		Chips: Training the student on the work of chips and the use of measuring tools and files, automatic publishing devices		
7th	3 hours practical				
8th	3 hours practical		Turning: the use of different lathes, operations for turning (planar, internal hardening, work of different teeth).		
9th	3 hours practical				
10th	3 hours practical		Plumbing: Industrial security by casting, molding, forming molds and plumbing work steps.		
11th	3 hours practical		Welding: a. Occupational safety and security precautions. B. Tools used and industrial		
12th	3 hours practical				

13th	3 hours practical		safety equipment. c. Types of welding (gaseous, ultrasound, pressure welding, arc welding).		
14th	3 hours practical		Cutting and bending metals: devices and machines used in cutting and bending metal sheets and rebar bars.		
15th	3 hours practical		metal fabrication: Training the student on the rolling machine and the metal fabrication process on the sheets.		
15th	3 hours practical				

11. Course Evaluation
100 Marks for the semester, distributed as follows: 50 marks for the semester activities. 50 marks for the final exam.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
Human Rights and Democracy
2. Course Code:
3. Semester / Year:
Semester / 1st Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours in the first semester (2 hours of theoretical over 15 weeks) / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Mostafa Mahdi Esmail

	Email: mostafa.mahdi@stu.edu.iq
8.	Course Objectives
	Studying the principles of human rights, democracy and freedom is one of the necessities of the age because of its link to human civil and political life, as it contributes significantly to the promotion of equality and development and the prevention of conflicts and human rights violations through the primacy of the language of dialogue and acceptance of the other opinion and support for democratic participation processes in order to establish societies in which all human rights for all people are valued and respected.
9.	Teaching and Learning Strategies
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.
10.	Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	2 hours theoretical	Develop cognitive understanding	Human rights in ancient civilizations	Theoretical lectures	exams, discussion and reports
2nd	2 hours theoretical		Human rights in religions and divine laws		
3rd	2 hours theoretical		Human rights in contemporary history		
4th	2 hours theoretical		Regional recognition of human rights European Convention, American Convention, African Charter, Arab Charter		
5th	2 hours theoretical		NGOs and Human Rights		
6th	2 hours theoretical		Human rights in Iraqi constitutions		
7th	2 hours theoretical		Human rights and public freedoms		
8th	2 hours theoretical		Economic, social, cultural, civil and political human rights		
9th	2 hours theoretical		Democracy: its definition and types		

10th	2 hours theoretical		Concepts of democracy		
11th	2 hours theoretical		Democracy in the Third World		
12th	2 hours theoretical		Democracies in the world		
13th	2 hours theoretical		Freedoms and their classifications		
14th	2 hours theoretical		Fundamental freedoms (intellectual, economic and social)		
15th	2 hours theoretical		Freedom of security and freedom of going and coming		

11. Course Evaluation
100 Marks for each semester, distributed as follows: 40 marks ((30 theoretical) Mid. Exams + 10 marks for Activities). 60 marks for the final exam (theoretical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1- Human rights (development - contents - protection) Prof. Dr. Riad Aziz Hadi 2- Human rights, democracy and public freedoms. Dr. Maher Sabri Kazem
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
English Language /1
2. Course Code:
3. Semester / Year:
Semester / 1st Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours in the Second semester (2 hours of theoretical over 15 weeks) / 2 units

7.	Course administrator's name (mention all, if more than one name)
	Name: Rehab Hanoun Jaber Email:
8.	Course Objectives
	The student should be able to recognize the English language in an advanced way and enable him to communicate in a simple way
9.	Teaching and Learning Strategies
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2nd Semester					
1st	2 hours theoretical	Develop cognitive understanding	A/ pronunciation: voiceless consonants B/ elements of sentence structure C/ patterns of sentences	Theoretical lectures	exams, discussion and reports
2nd	2 hours theoretical		A/pronunciation: voiceless consonants (ii) B/ the part of speech: 1. nouns 2. verbs 3. Adjectives 4. Adverbs		
3rd	2 hours theoretical		A/ pronunciation: voiced consonants (I) B/ the parts of speech 1. articles 2. Demonstratives 3. Pronouns 4. Prepositions 5. Conjunctions 6. Interpunctions		
4th	2 hours theoretical		A/ pronunciation: voiced consonants (ii) B/ classification of verbs		
5th	2 hours theoretical		A/ pronunciation: pure vowels		
6th	2 hours theoretical		A/pronunciation B/pronounce (II)		
7th	2 hours theoretical		A/ types of questions B/genitives		
8th	2 hours theoretical		A/ the present simple tense B/the present continuous		

			tense C/ the present perfect tense		
9th	2 hours theoretical		A/ the past simple tense B/ the past perfect tense C/ future		
10th	2 hours theoretical		A/ active and passive voice B/ the number system in English		
11th	2 hours theoretical		A/punctuation		
12th	2 hours theoretical		A/business letters B/tenders		
13th	2 hours theoretical		Comprehensive paragraphs about the branches of civil engineering Interpretation of the above-mentioned paragraphs Extracting the technical terms Making an independent sentence by using the terms Writing a composition using the terms related to the subject under discussion		
14th	2 hours theoretical				
15th	2 hours theoretical				

11. Course Evaluation

100 Marks for each semester, distributed as follows:
40 marks ((30 theoretical) Mid. Exams + 10 marks for Activities).
60 marks for the final exam (theoretical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1- Human rights (development - contents - protection) Prof. Dr. Riad Aziz Hadi 2- Human rights, democracy and public freedoms. Dr. Maher Sabri Kazem
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:

Concrete Technology

2. Course Code:

3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours per year (2 theoretical + 2 practical over 30 weeks) / 8 units (4 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Muhsin Odeh Mohammed Email: muhsin.auda@stu.edu.iq
8. Course Objectives
Teaching student the basic principles of concrete components and their installation, the different methods of pouring concrete and its production in construction sites, types of modern concrete, and the scientific details of concrete works...
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	1st Semester				
1st	4 hours (2 theoretical + 2 practical)	1- Enabling students to obtain principles, theories and basics in the nature of concrete, its components, how to produce it, methods of mixing and the	Theoretically a general review of the materials involved in concrete practically a general review of special tests on cement and aggregate	Theoretical and practical lectures	exams, discussion and reports
2nd	4 hours (2 theoretical + 2 practical)		Concrete mixer		
3rd	4 hours (2 theoretical + 2 practical)		Properties of soft concrete		

4th	4 hours (2 theoretical + 2 practical)	time required for mixing. 2- The ability to carry out laboratory and on-site tests. 3- Identify the methods of processing concrete in buildings	Concrete tests: fluidity check, penetration check, precipitation check, compaction factor check, reshaping test with vibration and frequency vibrations, practically conducting a compaction agent test for soft concrete		
5th	4 hours (2 theoretical + 2 practical)		Properties of soft concrete: bleeding and separation in practice Conducting a reshaping examination with frequency vibrations		
6th	4 hours (2 theoretical + 2 practical)		Plastic shrinkage and unit weight in soft concrete. Practically conducting a flow test for soft concrete.		
7th	4 hours (2 theoretical + 2 practical)		Theoretically, the effect of air vacuums, methods of measuring them, calculating the unit of weight, the cement factor in soft concrete, the density equation and the equation of absolute volumes to calculate the components of concrete. Practically on-site penetration test for soft concrete		
8th	4 hours (2 theoretical + 2 practical)		Density Equation and Absolute Volume Equation Practical experiment of the effect of water/cement on the bearing strength of hardened concrete.		
9th	4 hours (2 theoretical + 2 practical)		Concrete transportation practically experience the effect of mixing ratio on the bearing strength of hardened concrete.		
10th	4 hours (2 theoretical + 2 practical)		Concrete maturation Practically experience the effect of maturation methods on the bearing strength of hardened concrete.		
11th	4 hours (2 theoretical + 2 practical)		Pumped concrete practically the effect of manual and mechanical stacking method on the		

			bearing resistance of hardened concrete.		
12th	4 hours (2 theoretical + 2 practical)		Precast concrete Mixing Practically the Effect of Model Shape and Size on Hardened Concrete Bearing Resistance		
13th	4 hours (2 theoretical + 2 practical)		Hardened concrete practically affects the age on the bearing strength of hardened concrete.		
14th	4 hours (2 theoretical + 2 practical)		Hardened concrete resistance tests practically experience the tensile strength of hardened concrete.		
15th	4 hours (2 theoretical + 2 practical)		Factors affecting the resistance of concrete in practice Experiment of finding fracture (bending) standards for hardened concrete using models in the form of unreinforced concrete bridges.		
2nd Semester					
1st	4 hours (2 theoretical + 2 practical)		Concrete shrinkage Practically examine the effect of the use of additives on the workability of soft concrete.		
2nd	4 hours (2 theoretical + 2 practical)		Additives Practically examine the effect of additives on the resistance of hardened concrete (compressive strength, fission tensile, bending tension).		
3rd	4 hours (2 theoretical + 2 practical)		Types of additives Practical examination of the effect of additives on the resistance of hardened concrete (compressive strength, fission tension , bending tension)		
4th	4 hours (2 theoretical + 2 practical)		Design of concrete mixes practically inspect Schmidt hammer.		
5th	4 hours (2 theoretical		Design concrete mixes practically ultrasonic examination.		

	+ 2 practical)				
6th	4 hours (2 theoretical + 2 practical)		Practical Issues Examining the Effect of Fibers on the Workability of Soft Concrete		
7th	4 hours (2 theoretical + 2 practical)		Practical Issues Examination of the effect of fibers on the resistance of hardened concrete (compression, fission tension, bending tension)		
8th	4 hours (2 theoretical + 2 practical)		Non-destructive tests of concrete, radiation methods, hardness methods, pulse methods, resonance methods. Practically checked the workability of lightweight concrete		
9th	4 hours (2 theoretical + 2 practical)		Fibrous concrete practically checks the compressive strength of lightweight concrete.		
10th	4 hours (2 theoretical + 2 practical)		Polymeric concrete Practically resistance tests for high strength concrete (compression, fission tension, bending tension)		
11th	4 hours (2 theoretical + 2 practical)		Special types of mass, lightweight, heavy, underwater concrete, pre-laid aggregate concrete Practically resistance checks for high-performance concrete (compression, fission tension, bending)		
12th	4 hours (2 theoretical + 2 practical)		Special types of concrete: high performance concrete, self-compacting concrete, high strength concrete, concrete stacked practically checks the workability of self-compacting concrete.		
13th	4 hours (2 theoretical + 2 practical)		Resistance check of self-compacting concrete (compression, fission tension, bending).		
14th	4 hours (2 theoretical		Repair, maintenance and treatment of concrete in		

	+ 2 practical)		buildings using some ferrous materials such as epoxy and carbon fibers practically project design concrete mixes.		
15th	4 hours (2 theoretical + 2 practical)		The project of designing concrete mixtures, making experimental mixtures following the American and British method includes all tests for cement and aggregates.		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Concrete Technology, Jalal Bashir Sarsam
Main references (sources)	Concrete Technology - Dr. Muayad Nouri Al-Khalaf and Hana Abd Youssef
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:

Technology of Construction

2. Course Code:

3. Semester / Year:

Semester / 2nd Year

4. Description Preparation Date:

6/6/2025

5. Available Attendance Forms:

Presence only

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

120 hours per year (4hours practical over 30 weeks) / 8 units (4 units per semester)

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

Name: A.L. Ali Abdul Zahra Hassan
Email: ali.allami@stu.edu.iq

8. Course Objectives	
Providing students with manual skill and qualifying them to carry out building and construction work to be qualified upon graduation to supervise work efficiently	
9. Teaching and Learning Strategies	
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	4 hours (practical)	1- Enabling students to obtain basic skills in building and construction work.	Foundation Planning	practical lectures	exams, discussion and reports
2nd	4 hours (practical)		Excavations, backing of the sides of the excavation		
3rd	4 hours (practical)		Armament of foundations		
4th	4 hours (practical)		Presentation of a scientific film for the works of pillars		
5th	4 hours (practical)		Brick construction, English connection method		
6th	4 hours (practical)		Brick construction, German connection method		
7th	4 hours (practical)		Building by blocks (concrete blocks, Thermostone)		
8th	4 hours (practical)		Wooden mold works for columns, bridges, stairs and roofs		
9th	4 hours (practical)		Completion of the wooden mold works		
10th	4 hours (practical)		Formwork, Manual Pouring, Automated Mixer		
11th	4 hours (practical)		Scientific visit to a wooden mold work site		
12th	4 hours (practical)		Rebar works, rebar, the healthy way to use it		
13th	4 hours (practical)		Making reinforcement models for column, bridge and roof		
14th	4 hours (practical)		Steel works, (Steel sections and aluminum profiles)		

15th	4 hours (practical)		Tile Works		
2nd Semester					
1st	4 hours (practical)		Impermeable materials applications		
2nd	4 hours (practical)		Completion of Impermeable materials applications		
3rd	4 hours (practical)		Thermal insulation		
4th	4 hours (practical)		Plastering works		
5th	4 hours (practical)		Rendering works (Use cement mortar)		
6th	4 hours (practical)		Rendering works (Use of cement-Noura mortar)		
7th	4 hours (practical)		Ceramic Tile Cladding		
8th	4 hours (practical)		Wall Cladding Works		
9th	4 hours (practical)		Dropped ceiling		
10th	4 hours (practical)		Painting works		
11th	4 hours (practical)		Sanitary Works		
12th	4 hours (practical)		Electrical Works		
13th	4 hours (practical)		Mechanical Works		
14th	4 hours (practical)		Road works, foundations and under the foundations of roads		
15th	4 hours (practical)		Completion of road works		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((30 practical) Mid. Exams + 20 marks for Activities).
50 marks for the final exam (practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Building and Construction, Zuhair Sako and Artin Levon.

Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Soil Mechanics
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours per year (2 theoretical + 2 practical over 30 weeks) / 8 units (4 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Sarah Tailb Katab Email: sarah.kattab@stu.edu.iq
8. Course Objectives
Introducing students to mechanical properties of the soil through which the risk of choosing the type of foundation and the impact of the structures that are built on various types of soil can be estimated
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	4 hours (2 theoretical + 2 practical)	1- Qualifying the student and acquiring the necessary skill	Soil definition, geological introduction to rock types and composition	Theoretical and practical lectures	Exams, discussion and reports

2nd	4 hours (2 theoretical + 2 practical)	in soil classification. 2- The ability to conduct laboratory and field tests for the soil and determine its suitability for the types of Structure on which it is built.	Soil components and physical properties		
3rd	4 hours (2 theoretical + 2 practical)		Granular analysis of soil Sieves method		
4th	4 hours (2 theoretical + 2 practical)		Granular analysis of soil Condenser method		
5th	4 hours (2 theoretical + 2 practical)		Plasticity properties in the soil		
6th	4 hours (2 theoretical + 2 practical)		Soil classification		
7th	4 hours (2 theoretical + 2 practical)		Soil classification Use the unified classification method		
8th	4 hours (2 theoretical + 2 practical)		Soil permeability Coarse		
9th	4 hours (2 theoretical + 2 practical)		Soil permeability Soft		
10th	4 hours (2 theoretical + 2 practical)		Types of stresses in the soil		
11th	4 hours (2 theoretical + 2 practical)		Soil offset pressure		
12th	4 hours (2 theoretical + 2 practical)		Improving soil properties		
13th	4 hours (2 theoretical + 2 practical)		Types of laboratory compaction tests, field compaction methods		
14th	4 hours (2 theoretical		Other methods to improve soil properties and habitat		

	+ 2 practical)		(cement stabilization, asphalt stabilization, lime stabilization)		
15th	4 hours (2 theoretical + 2 practical)				
2nd Semester					
1st	4 hours (2 theoretical + 2 practical)		Modern methods of soil stabilization (soil reinforcement)		
2nd	4 hours (2 theoretical + 2 practical)				
3rd	4 hours (2 theoretical + 2 practical)		California bearing ratio		
4th	4 hours (2 theoretical + 2 practical)		Subsidence in the soil		
5th	4 hours (2 theoretical + 2 practical)				
6th	4 hours (2 theoretical + 2 practical)		The phenomenon of swelling and crumbling		
7th	4 hours (2 theoretical + 2 practical)		Shear resistance of the soil		
8th	4 hours (2 theoretical + 2 practical)		Non-confined shear examination		
9th	4 hours (2 theoretical + 2 practical)		Direct Shear Tests		
10th	4 hours (2 theoretical + 2 practical)		Three-axis shear test		
11th	4 hours (2 theoretical				

	+ 2 practical)				
12th	4 hours (2 theoretical + 2 practical)		Field shear tests		
13th	4 hours (2 theoretical + 2 practical)		Types of foundations		
14th	4 hours (2 theoretical + 2 practical)		Shallow and deep foundations such as piles		
15th	4 hours (2 theoretical + 2 practical)		Soil Investigation		

11. Course Evaluation
100 Marks for each semester, distributed as follows: 50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities). 50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Civil Drawing
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)

180 hours per year (6 hours practical over 30 weeks) / 12 units (6 units per semester)					
7. Course administrator's name (mention all, if more than one name)					
Name: A.L. Hasan Ghazi Ghalloom Email: hasan.ghazi@stu.edu.iq					
8. Course Objectives					
Qualifying students to understand the executive plans and how to transfer information to the ground for implementation by teaching students all the structural details and details of the construction work, as well as learning the fundamental that followed in preparing the collections of those drawings and applying it manually or by using computers aide programs by students.					
9. Teaching and Learning Strategies					
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.				
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					
1st	6 hours (practical)	1- Introducing student to the executive construction plans and the details of the construction works. 2- Enable student to read the executive plans. 3- Enabling student and qualifying him to participate in the preparation of executive plans and details attached to the required	Introduction to the basics of structural drawing from architectural and idiomatic symbols and lines in plans and drawing models for building and construction materials, drawing scale, executive plans and types of building with bricks and blocks.	Practical lectures	Exams, discussion and reports
2nd	6 hours (practical)		Drawing the horizontal plan of a residential house or small building and determining the longitudinal and transverse sections and elevations.		
3rd	6 hours (practical)		Drawing longitudinal and transverse sections, including the details of the finishing layers for floors, ceilings.		
4th	6 hours (practical)		A general idea of the sanitary drawing and compositions for water and		

		facility, such as plans of sewage networks and structural details for members of that facility. 4- The skill of working on some engineering drawing programs supporting in that field as a good alternative to manual drawing.	sanitary installations and sanitary furniture and drawing a network of water and sanitary installations for pre-prepared horizontal plans.		
5th	6 hours (practical)		Drawing the structural details of the inspection septic tank and linking them with the main network.		
6th	6 hours (practical)		Drawing the structural details of the rotting and storage basins (cesspool) attached to the house plan.		
7th	6 hours (practical)		A general introduction to concrete and construction principles, concrete resistance to different types of stresses, necessary reinforcing steel and its types, and symbols used in plans and structural details.		
8th	6 hours (practical)		Concrete slabs: their types (one-way and two-way slabs) and how loads move through them to other parts of the structure and the necessary reinforcement for each type, with drawing the structural details of the unidirectional solid slabs.		
9th	6 hours (practical)		Drawing the structural details of two-way solid slabs.		
10th	6 hours (practical)		Drawing the structural details of one- and two polygon slabs.		
11th	6 hours (practical)		Concrete beams and their types and drawing the structural details of simple beam with sections.		
12th	6 hours (practical)		Drawing structural details of continuous beam and sections.		
13th	6 hours (practical)		Drawing the structural details of the cantilever beam with their sections.		
14th	6 hours (practical)				

15th	6 hours (practical)		Introduction with drawing the structural details of precast pre-cast beams. Drawing a horizontal plan (key) for the joists of a skeleton building and fixing the tables and details of the beams.		
2nd Semester					
1st	6 hours (practical)		Introduction of concrete columns and their types, and the necessary reinforcement with the drawing of detailed sections (longitudinal and transverse) including how to distribute the appropriate rebar.		
2nd	6 hours (practical)		Drawing structural details and vertical sections to illustrate the interconnection of reinforcing steel for successive floor columns.		
3rd	6 hours (practical)		Introduction to the foundations: types, principle of work and structural requirements, drawing the structural details of the single foundation, the foundations of the walls.		
4th	6 hours (practical)		Drawing the structural details of the common foundations and the details of the distribution of reinforcing steel necessary for each type .		
5th	6 hours (practical)		Drawing the structural details of the neutral foundation and continuous foundations and the details of the distribution of reinforcing steel necessary for each type.		
6th	6 hours (practical)		Drawing the structural details of the foundations of the pillars and their types with the structural details of the piling caps.		

7th	6 hours (practical)		Identify the concrete stairs and their types, straight ladder, half straight ladder, spiral ladder, with drawing the necessary reinforcement details.		
8th	6 hours (practical)		Drawing the structural details of the reinforced walls of elevators and basement walls.		
9th	6 hours (practical)		Drawing the structural details of the joints in buildings, expansion joints, structural joints.		
10th	6 hours (practical)		Introduction to factory and prefabricated construction and drawing structural details for the interconnection of walls with prefabricated ceilings.		
11th	6 hours (practical)		Introduction to steel structures, sections, tables, how to obtain specifications and details of sections from them.		
12th	6 hours (practical)		Interconnection of steel foundations and bases, interconnection of steel columns, interconnection of joists with each other.		
13th	6 hours (practical)		Details of the drawing of the steel gable and the interconnection of its sides.		
14th	6 hours (practical)		The use of computers and its applications in the structural drawing of reinforced concrete structures.		
15th	6 hours (practical)				

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((30 practical) Mid. Exams + 20 marks for Activities).
50 marks for the final exam (practical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1.Structural drawing, Adnan Aziz Al-Dahan. 2.Building and Construction, Zuhair Sako and Artin Levon.

Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Surveying (2)
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours per year (2 theoretical + 2 practical over 30 weeks) / 8 units (4 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Ali Maher Adnan Email: ali.m.adnan@stu.edu.iq
8. Course Objectives
Granting student, the ability to deal with various traditional and modern surveying tools and devices, developing student's capabilities in field monitoring, recording measurements, conducting cadastral calculations, producing maps, and thus working optimally when working in one of the projects within the specialization of the subject.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					

1st	4 hours (2 theoretical + 2 practical)	1- Acquiring basic knowledge in surveying and identifying various surveying devices and tools 2- The ability to carry out field monitoring, production and implementation of plans and conduct cadastral calculations necessary for work	Theoretically: Identify the theodolite apparatus, its parts, uses, types and how to read. Practical: Identify the types of devices and how to install and take vertical and horizontal reading.	Theoretical and practical lectures	Exams, discussion and reports
2nd	4 hours (2 theoretical + 2 practical)		Theoretically: Methods of checking and adjusting the device and for all types of horizontal and vertical examinations and how to find the device constant. Practically: Conducting tests in the field		
3rd	4 hours (2 theoretical + 2 practical)		Theoretically: Identify the methods of measuring horizontal angles in practice: Measure horizontal angles in several ways (repetition, directions, single angles)		
4th	4 hours (2 theoretical + 2 practical)		Theoretically: Giving a clear perception of polygons, their types and the most important uses in practice: Making a closed polygon by taking the readings of the device		
5th	4 hours (2 theoretical + 2 practical)		Theoretically: Measuring the internal horizontal angles of the polygon and identifying ways to correct them. Practically: making a closed polygon and measuring and correcting the inner angles of the polygon		
6th	4 hours (2 theoretical + 2 practical)		Theoretically: Methods for measuring the horizontal distances of the sides of a polygon. Practically: Measuring the horizontal distances of the sides with a leveling ruler, theodolite device and tape measure.		
7th	4 hours (2 theoretical		Theoretically: Giving methods of drawing a polygon and raising the		

	+ 2 practical)		details according to an appropriate drawing scale.		
8th	4 hours (2 theoretical + 2 practical)		Theoretically: Learn how to lift the beams with the device and tape measure in practice: Scan the area and patches of beams, features and landmarks with theodolite and tape device.		
9th	4 hours (2 theoretical + 2 practical)		Theoretically: Identify the concept of the vertical and vertical vehicle and what is its usefulness and give its own laws. Practical: Practical exercise on taking vertical and vertical vehicles and directions.		
10th	4 hours (2 theoretical + 2 practical)		Theoretically: Identify the special laws for calculating the levels of points by the method of rise and fall. Practical: Using the settlement body to take readings of a set of points and find levels according to special laws.		
11th	4 hours (2 theoretical + 2 practical)		Theoretically: Approximate the effect of the Earth's sphericity and light refractions on point levels.		
12th	4 hours (2 theoretical + 2 practical)		Theoretically: A detailed explanation of the inverted settlement and mutual settlement methods and special applications of the type champion Practically: Explain how to apply the above two methods and find the measured points levels		
13th	4 hours (2 theoretical + 2 practical)		Theoretically: an explanation of the sources of errors, their classification, and giving the mechanism for eliminating each error and what is the permissible number of errors.		

14th	4 hours (2 theoretical + 2 practical)		Theoretically: Explain and give the laws of longitudinal sections and how to draw them on the graph Practically: Making a longitudinal settlement on the site with drawing the longitudinal section with special laws and how to choose the construction line.		
15th	4 hours (2 theoretical + 2 practical)		Theoretically: Explain and give the laws of cross sections and how to draw them on the graph Practically: Making an occasional settlement on the site with drawing the cross section with special laws and how to choose the construction line.		
2nd Semester					
1st	4 hours (2 theoretical + 2 practical)		Theoretically: Giving the general concept of the construction line and its benefits and advantages practically: Giving practical exercises for multiple projects and drawing sections and construction line for these projects		
2nd	4 hours (2 theoretical + 2 practical)		Theoretically: Explain the laws of calculating areas and in multiple ways Practically: Give practical exercises for the purpose of calculating areas		
3rd	4 hours (2 theoretical + 2 practical)		Theoretically: Giving the laws for calculating volumes in the laboratory: giving practical exercises for the purpose of calculating volumes		
4th	4 hours (2 theoretical + 2 practical)		Theoretically: giving the general concept of the errors of the leveling device Practically: Conducting an experiment to examine the two wedges to find out the error rate in the device		

5th	4 hours (2 theoretical + 2 practical)		Theoretically: Definition of contour lines, their properties and what is the contour period in practice: Contour lines are determined in a direct way in the field.		
6th	4 hours (2 theoretical + 2 practical)		Theoretically: An explanation of each type of contour lines and the advantages of each type practically: Conducting the process of leveling the contour lines in a square manner.		
7th	4 hours (2 theoretical + 2 practical)		Theoretically: The foundations of drawing contour lines according to practically approved drawing scales: Practical exercises to draw contour lines for a specific area		
8th	4 hours (2 theoretical + 2 practical)		Theoretically: Giving special laws for multiple forms to calculate volumes practically: solving practical examples for calculating the volumes of multiple shapes		
9th	4 hours (2 theoretical + 2 practical)		Theoretically: Identify the device and its parts and what are its applications and uses Practically: Using the device to calculate areas on multiple maps		
10th	4 hours (2 theoretical + 2 practical)		Identify the types of deviations and their laws and how to write angles in various systems		
11th	4 hours (2 theoretical + 2 practical)		Theoretically: giving the concept of the work of the compass and its most important parts and how to measure angles practically: making a direct use of the compass and finding multiple angles between the different points.		
12th	4 hours (2 theoretical		Use simple maps for the purpose of dropping and		

	+ 2 practical)		lifting them using the compass		
13th	4 hours (2 theoretical + 2 practical)		Learn about the concept of coordinates and GIS and what are the most important applications used		
14th	4 hours (2 theoretical + 2 practical)				
15th	4 hours (2 theoretical + 2 practical)		General Review		

11. Course Evaluation
100 Marks for each semester, distributed as follows: 50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities). 50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Surveying Engineering / Abbas Zeidan Khalaf Principles of Surveying Engineering / Juma Dawood Engineering and cadastral survey / Ziad Abdul-Jabbar Al-Bakr Surveying engineering / Moffit F.H
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering Egyptian Survey Magazine
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Quantity Surveying
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours per year (1 theoretical + 2 practical over 30 weeks) / 6 units (3 units per semester)

7. Course administrator's name (mention all, if more than one name)
Name: A.L. Muhsin Auda Mohammed Email: muhsin.auda@stu.edu.iq
8. Course Objectives
Introducing student to how to calculate the amount of construction paragraphs involved in the implementation of Structure and buildings, as well as BOQs, and analyzing those quantities into their primary resources with the principles of calculating prices and costs, as well as contracting work, specifications and engineering project management.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					
1st	3 hours (1 theoretical + 2 practical)	1- Introducing student to the basics of calculating construction quantities and project management methods 2- The ability to analyze the implementation paragraphs and calculate their quantities, prices and costs 3- The ability to conduct the executing quantity surveying, both	Definitions of guesswork, purpose and foundations on which it is based	Theoretical and practical lectures	Exams, discussion and reports
2nd	3 hours (1 theoretical + 2 practical)		Types of guesses and units of measurement used for each paragraph		
3rd	3 hours (1 theoretical + 2 practical)		Quantities of earthworks for the foundations of Structure Unified Standard Guide and Refer Prices		
4th	3 hours (1 theoretical + 2 practical)				
5th	3 hours (1 theoretical + 2 practical)		Quantities of paragraphs under moisture inhibitor (square, concrete foundations. cubing)		
6th	3 hours (1 theoretical + 2 practical)				

7th	3 hours (1 theoretical + 2 practical)	visible and hidden. 4- The ability to organize and prepare various forms for contracts, tender, maintenance period and advances for the project	Quantities of structural paragraphs above moisture block, including moisture blocker concrete and brick construction		
8th	3 hours (1 theoretical + 2 practical)				
9th	3 hours (1 theoretical + 2 practical)		Calculation of quantities of concrete, rebar, wooden mold for foundations Structural buildings with the foundations of walls and the foundations of stilts		
10th	3 hours (1 theoretical + 2 practical)				
11th	3 hours (1 theoretical + 2 practical)		calculation of quantities of concrete, rebar, wooden mold, For connecting beams in structural buildings below the level of the DPC For beams over openings		
12th	3 hours (1 theoretical + 2 practical)				
13th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of concrete, rebar, wooden mold for columns of all kinds		
14th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of concrete, rebar, wooden mold for various concrete works and special shapes such as domes and arches		
15th	3 hours (1 theoretical + 2 practical)		Calculation of quantities of concrete, rebar, wooden mold for one-way slabs		
2nd Semester					
1st	3 hours (1 theoretical + 2 practical)		Calculation of concrete, rebar, wooden mold for two-way slabs		
2nd	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of concrete, rebar, wooden mold for stairs of all kinds		

3rd	3 hours (1 theoretical + 2 practical)		Calculation of the amount of false celling works Calculation of floor works		
4th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of finishing works (Rendering, plastering) and tiles		
5th	3 hours (1 theoretical + 2 practical)				
6th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of flooring, tile and cladding		
7th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of electrical and mechanical installations		
8th	3 hours (1 theoretical + 2 practical)		Calculating the quantities of water and sanitary installations works		
9th	3 hours (1 theoretical + 2 practical)		Calculating the quantities of construction works for prefabricated construction		
10th	3 hours (1 theoretical + 2 practical)		Calculation of the quantities of steel structure works		
11th	3 hours (1 theoretical + 2 practical)		Contracts, contracting and contract organization		
12th	3 hours (1 theoretical + 2 practical)		Definitions in management and the relationship between individuals and organization and the responsibilities of staff		
13th	3 hours (1 theoretical + 2 practical)		Project scheduling (work progress tables, arrow grid charts, critical path)		
14th	3 hours (1 theoretical + 2 practical)				

15th	3 hours (1 theoretical + 2 practical)		Applications of calculating the quantities of structural paragraphs using the computer		

11. Course Evaluation
100 Marks for each semester, distributed as follows: 50 marks ((20 theoretical + 20 practical) Mid. Exams + 10 marks for Activities). 50 marks for the final exam (40 theoretical + 10 practical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Building and Fabricated Building
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours per year (2 theoretical hours over 30 weeks) / 4 units (2 units per semester)
7. Course administrator's name (mention all, if more than one name)
Name: A.L. khalaf Guma khalaf Email: khalaf.g.khalaf@stu.edu.iq
8. Course Objectives
Providing student with the necessary information about the stages of implementation of traditional and fabricated buildings, the works that fall within each stage, and the appropriate construction machines for each work.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies.

	2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st Semester					
1st	2 hours (Theoretical)	1- Teaching student the basic principles of fabricated construction 2- Enabling student to organize the site, direct the work and supervise its implementation	Introduction to the methods of implementing construction projects	Theoretical lectures	exams, discussion and reports
2nd	2 hours (Theoretical)		Organization and planning of work sites		
3rd	2 hours (Theoretical)		Earth excavations and methods of supporting the sides of the excavation		
4th	2 hours (Theoretical)		Techniques used in groundwater withdrawal		
5th	2 hours (Theoretical)		Earth filling		
6th	2 hours (Theoretical)		D.P.C		
7th	2 hours (Theoretical)		Building walls with bricks, stone		
8th	2 hours (Theoretical)		Exterior wall finishing techniques		
9th	2 hours (Theoretical)		Interior wall finishing techniques		
10th	2 hours (Theoretical)		Floor finishing techniques for the ground floor, other floors and ceilings		
11th	2 hours (Theoretical)		Thermal insulation technologies		
12th	2 hours (Theoretical)		Concrete formwork		
13th	2 hours (Theoretical)		Molds lifting		
14th	2 hours (Theoretical)		Scaffolding		
15th	2 hours (Theoretical)		False celling		
2nd Semester					
1st	2 hours (Theoretical)		Sanitary installations (Drink water and sewage)		
2nd	2 hours (Theoretical)		Doors and windows		

3rd	2 hours (Theoretical)		Electrical installations		
4th	2 hours (Theoretical)		Joints in buildings (structural joints, expansion joints)		
5th	2 hours (Theoretical)		Pigments, types and uses		
6th	2 hours (Theoretical)		Fabricated construction (properties and supplies)		
7th	2 hours (Theoretical)		Fabricated construction items		
8th	2 hours (Theoretical)		Plant components and method of manufacture		
9th	2 hours (Theoretical)		Details of the structural members in the fabricated construction		
10th	2 hours (Theoretical)				
11th	2 hours (Theoretical)		Joints in fabricated construction		
12th	2 hours (Theoretical)		Ways of moving in buildings		
13th	2 hours (Theoretical)		Elevators (types, components and implementation route)		
14th	2 hours (Theoretical)				
15th	2 hours (Theoretical)		Fire resistance and fire control systems		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
50 marks ((40 Theoretical) Mid. Exams + 10 marks for Activities).
50 marks for the final exam (Theoretical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Building and Construction, Zuhair Sako and Artin Levon.
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:

Construction Equipment

2. Course Code:

3. Semester / Year:

Semester / 2nd Year					
4. Description Preparation Date:					
6/6/2025					
5. Available Attendance Forms:					
Presence only					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours per year (2 theoretical hours over 30 weeks) / 4 units (2 units per semester)					
7. Course administrator's name (mention all, if more than one name)					
Name: A.L. khalaf Guma khalaf Email: khalaf.g.khalaf@stu.edu.iq					
8. Course Objectives					
Determine the productivity of machines and the cost of their operation and supervise the completion of work					
9. Teaching and Learning Strategies					
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.				
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st Semester					
1st	2 hours (Theoretical)	1- Introducing student to the machines used in construction work. 2- Enable student to identify the appropriate machines for the required work 3- Enabling student to calculate the costs of	Construction equipment and factors taken into account when choosing equipment and methods of obtaining it	Theoretical lectures	exams, discussion and reports
2nd	2 hours (Theoretical)		Calculation of the cost and ownership of machinery (cost of extinction, investment, maintenance and repair).		
3rd	2 hours (Theoretical)				
4th	2 hours (Theoretical)				
5th	2 hours (Theoretical)				
6th	2 hours (Theoretical)		Engineering fundamental for engineering machinery works		
7th	2 hours (Theoretical)		Special machines, standard machines, and		

		operating the machines 4- Enable student to determine the optimal option between buying or renting the machine	the trade-off between them		
8th	2 hours (Theoretical)		Dozer		
9th	2 hours (Theoretical)		scraper		
10th	2 hours (Theoretical)				
11th	2 hours (Theoretical)		Grader		
12th	2 hours (Theoretical)		Practical visit		
13th	2 hours (Theoretical)		Drilling machines – factors to be taken into account when using them		
14th	2 hours (Theoretical)		Drilling Machinery, Universal Excavator, Scraping Shovel, Productivity Calculation		
15th	2 hours (Theoretical)		Drilling machines, facial shovel, productivity calculation		
2nd Semester					
1st	2 hours (Theoretical)		Flash shovel and selection of quality and capacity of excavators		
2nd	2 hours (Theoretical)		Shovel loading and productivity calculation		
3rd	2 hours (Theoretical)		Machines of transport units and their types		
4th	2 hours (Theoretical)		Calculation of truck productivity		
5th	2 hours (Theoretical)		Soil compaction equipment, types, uses		
6th	2 hours (Theoretical)		Material Blending Equipment for Concrete Works		
7th	2 hours (Theoretical)		Equipment for conveying, compacting and polishing concrete		
8th	2 hours (Theoretical)				
9th	2 hours (Theoretical)		Lifting Machinery & Equipment		
10th	2 hours (Theoretical)		Tower Crane		
11th	2 hours (Theoretical)		Scientific visit		
12th	2 hours (Theoretical)		Piling Machines		

13th	2 hours (Theoretical)		Air compressors and pumps Conveyor belts		
14th	2 hours (Theoretical)				
15th	2 hours (Theoretical)		Stone crushers		

11. Course Evaluation
100 Marks for each semester, distributed as follows: 50 marks ((40 Theoretical) Mid. Exams + 10 marks for Activities). 50 marks for the final exam (Theoretical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Iraqi Journal of Civil Engineering
Electronic References, Websites	Many civil engineering websites

1. Course Name:
Principles of Computer /2
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours in the second semester (2 hours of practical over 15 weeks) / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: A.L. Ali Maher Adnan Email: ali.a.adnan@stu.edu.iq
8. Course Objectives
Teaching student how to use computer aided design programs and their applications in the completion of civil drawings.
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies.

	4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2nd Semester					
1st	2 hours practical	1- Introducing the student to the programs used in the completion of civil drawings 2- Enable the student to master the AutoCAD program	General review of AutoCAD program Review menu bars list Draw, Modify, Osnap.	practical lectures	exams, discussion and reports
2nd	2 hours practical		Dimensions, writing the principles of three-dimensional drawing. Surface 3d Drawing menu.		
3rd	2 hours practical		Solids menu. Applications on Extrad, Revolve _ Slice commands.		
4th	2 hours practical		Solid editing. Applications about Union, Subtract commands.		
5th	2 hours practical		Complete Solid editing commands. Create a simple building with three dimensions.		
6th	2 hours practical		Completion of the previous building. Making a model of a horizontal section in a building (residential house) and furnishing it.		
7th	2 hours practical		Complete the previous form. Making a longitudinal model in a building (residential house) with furnishing.		
8th	2 hours practical		Design principles Rendering. Add lighting to the scene.		
9th	2 hours practical		Add materials to surfaces. modeling of materials for demonstration.		
10th	2 hours practical		Other effects in the scene: night lighting, wallpapers.		
11th	2 hours practical		A project of making a model of a multi-story building with the addition		
12th	2 hours practical				

13th	2 hours practical		of other supplements: trees, cars, people		
14th	2 hours practical		A simple introduction to the programs parallel to AutoCAD (3DMax).		
15th	2 hours practical		Using additional processors for image done by AutoCAD by (Photoshop) program.		

11. Course Evaluation	
100 Marks for the semester, distributed as follows: 50 marks ((30 practical) Mid. Exams + 20 marks for Activities). 50 marks for the final exam (practical)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	AutoCAD user's manual
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
English Language /2
2. Course Code:
3. Semester / Year:
Semester / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours in the Second semester (2 hours of theoretical over 15 weeks) / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Rehab Hanoun Jaber Email:
8. Course Objectives
The student should be able to recognize the English language in an advanced way and enable him to communicate in a simple way

9. Teaching and Learning Strategies	
Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2nd Semester					
1st	2 hours theoretical	Develop cognitive understanding	Unit one: getting to know you Tenses Questions Questions words	Theoretical lectures	exams, discussion and reports
2nd	2 hours theoretical		Unit two: the way we live Present tenses Present simple Present Continuous Have / have got		
3rd	2 hours theoretical		Unit three: it all went wrong Past tenses Past simple Past continuous		
4th	2 hours theoretical		Unit four: let's go shopping Quantity Much and many Some and any Something, anyone, nobody,everywhere A few, a little, a lot of Articles		
5th	2 hours theoretical		Unit Five: what do you want to do Past tenses Verb patterns 1 Future intentions Going to and will		
6th	2 hours theoretical		Unit six: tell me! What's it like? What's it like? Comparative and superlative adjectives		
7th	2 hours theoretical		Unit seven: fame Present perfect and past		

			simple For and since Tense revision		
8th	2 hours theoretical		Unit eight: do's and don'ts Have(got) to Should must		
9th	2 hours theoretical		Unit nine: going places Time and conditional clauses what if...?		
10th	2 hours theoretical		Unit ten: scared to death Verbs patterns Infinitives What, etc.+ infinitive Something, etc.+ infinitive		
11th	2 hours theoretical		Unit eleven: things that changed the world Passives		
12th	2 hours theoretical		Unit twelve: dreams and reality Second conditional might		
13th	2 hours theoretical		Unit thirteen: earning a living Present perfect continuous Present perfect simple versus Continuous		
14th	2 hours theoretical		unit fourteen: family ties Present perfect and past perfect and clarification Reported statements		
15th	2 hours theoretical		Unit fifteen: revision		

11. Course Evaluation

100 Marks for each semester, distributed as follows:
40 marks ((30 theoretical) Mid. Exams + 10 marks for Activities).
60 marks for the final exam (theoretical)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
Graduation Project
2. Course Code:
3. Semester / Year:
Yearly / 2nd Year
4. Description Preparation Date:
6/6/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours in the second year (2 hours of work over 30 weeks) / 4 units
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Mohamed Saleh Abd-ali Email: mohmsce1974@stu.edu.iq Name: L. Ali Abdul Zahra Hassan Email: ali.allami@stu.edu.iq Name: Muhsin Auda Mohammed Email: muhsin.auda@stu.edu.iq Name: Hasan Ghazi Ghalloom Email: hasan.ghazi @stu.edu.iq
8. Course Objectives
Students carry out a project within the specialized subjects in civil technologies, conduct all field and office work, and submit a final report with all necessary accounts, plans and maps
9. Teaching and Learning Strategies

Strategy	1. Cognitive strategies. 2. Active learning strategies. 3. Cooperative learning strategies. 4. Discussion strategy.

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
2nd Semester					
1st to 3rd	2 hours per week (practical)	1- Enabling student to work in groups and develop team spirit. 2- The skill of scientific	Conducting research and reviewing the available references and materials related to the subject of the project, reviewing specialists and departments to increase knowledge on that subject and writing abbreviations on how to	Practical lectures	Reports & Discussions

		research and conducting studies and research. 3- Applying what has been learned at various stages of the study to form a practical balance of knowledge for the future of field work	plan the project and program its timings		
4th To 7th			Revising the above information and preparing the requirements of equipment, devices, plates, symbols and other accessories, and starting the implementation of the project in its field or laboratory stages first, then demarcation and the subsequent calculations, plans and maps according to the nature of the project		
8th To 25th			Complement the field, laboratory or demarcation work of the project and under the directives of the supervising teacher		
26th To 29th			Conducting final calculations, drawings, plans and maps and presenting the final report of the project to the competent supervisor		
30th			Delivery and conduct of the final interview for the evaluation of the project		

11. Course Evaluation	
100 Marks	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Many scientific journals issued by various universities in Iraq in addition to visits to scientific libraries and the library of the Institute
Electronic References, Websites	

1. Course Name:
Arabic
2. Course Code:
3. Semester / Year:

Cecond semester/ first grade
4. Description Preparation Date:
2025/6/12
5. Available Attendance Forms:
In person only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours annually , 2 hours weekly
7. Course administrator's name (mention all, if more than one name)
Name : A.L Zahraa Saad Hussein
8. Course Objectives
1. Develop oral and written expression skills in standard Arabic. 2. Develop the ability to write research papers, reports, and academic articles. Enhance the ability to use Arabic in modern contexts (digital media, technical writing, formal communication).
9. Teaching and Learning Strategies

Strategy	1. Lecture or presentation strategy. 2. Problem-solving strategy. 3. Report-based learning strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5	2 2 2 2 2	1- Presentations Oral Academic Proficient Arabic.	• Hamza Writing Rules • Nominative and Accusative Cases of Nouns	• lecture	• Daily, monthly and final exams

6 7 8 9 10 11 12 13 14 15	2 2 2 2 2 2 2 2 2 2 2	2 - Participation Active Discussions andUniversity Seminars 3- Writing reports, articles, and research Proficient academic	• Solar and Lunar Letters • Declension and Syntax of Nouns, Verbs, and Letters • About the Styles of Exclamation and Comparatives • Repeating Nouns • Conjunctions • Interrogative Words • Punctuation Marks and Their Uses • Exceptional Words • Number and Counted • Of the Five Objects (Maf'ul al-Mutlaq)		

11. Course Evaluation

The distribution is as follows: 40 marks for daily and monthly exams. 60 marks for final exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name:

Crimes of the defunct Baath Party

2. Course Code:

3. Semester / Year:

2025\7\10

4. Description Preparation Date:

2025/6/12

5. Available Attendance Forms:

In person only

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

30 hours annually , 2 hours weekly

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

Name: A.L. Mostafa Mahdi Esmail
Email: mostafa.mahdi@stu.edu.iq

8. Course Objectives

The objective of studying the Ba'ath Party's crimes
The objectives of studying the crimes of the Ba'ath regime, particularly in Iraq, vary according to academic, legal, or documentary purposes, and include the following:
1. Documenting crimes and violations
3. Analyzing the nature of dictatorial regimes
4. Promoting a culture of human rights
5. Preventing the recurrence of crimes
6. Supporting national reconciliation efforts

9. Teaching and Learning Strategies

Strategy	1. Lecture or presentation strategy. 2. Problem-solving strategy. 3. Report-based learning strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1- Presentations	The concept of crime, its linguistic and technical definition, and types of crimes.	**A lecture**	Daily, monthly and final exams
2	2	Oral			
3	2	Academic			
4	2	Proficient Arabic.	Crimes of the Ba'ath regime according to the documentation of the Iraqi High Criminal Court Law of 2005.		
5	2	2 - Participation			
6	2	Active	Psychological and social crimes of the Ba'ath regime and understanding their effects on individuals and society.		
7	2	Discussions andUniversity			
8	2	Seminars			
9	2	3- Writing reports, articles, and research	The Ba'ath regime's position on religion. Violations of Iraqi laws, forms of human rights violations.		
10	2	Proficient academic			
11	2				

12 13 14 15	 2 2 2 2		Prison and detention facilities of the Ba'ath regime. Midterm exam. Environmental crimes of the Ba'ath regime in Iraq: war pollution and the scorched earth policy. Mass graves crimes. Genocide graves events committed by the Ba'ath regime in Iraq: the events of 1963 and their relationship to mass graves. Week Eleven (for events extending from 1979 to 2003 and their relationship to mass graves in Iraq) The buried Ba'ath and the visit to Imam Hussein The Anfal crime The Sha'ban uprising A comprehensive review of the above materials to prepare for the exam.		

11. Course Evaluation	
The distribution is as follows: 40 marks for daily and monthly exams. 60 marks for final exams.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	