

**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: Diyala

Faculty/Institute: Engineering

Scientific Department: Civil

Academic or Professional Program Name: BSc in Civil Engineering

Final Certificate Name: BSc in Civil Engineering

Academic System: Courses

Description Preparation Date: 15/5/2025

File Completion Date: 15/5/2025

Signature: 

Head of Department

Name: Dr. Abbas H. Mohammed

Date: 15/5/2025

Signature: 

Scientific Associate

Name: Dr. Jabbar Q. Jabbar

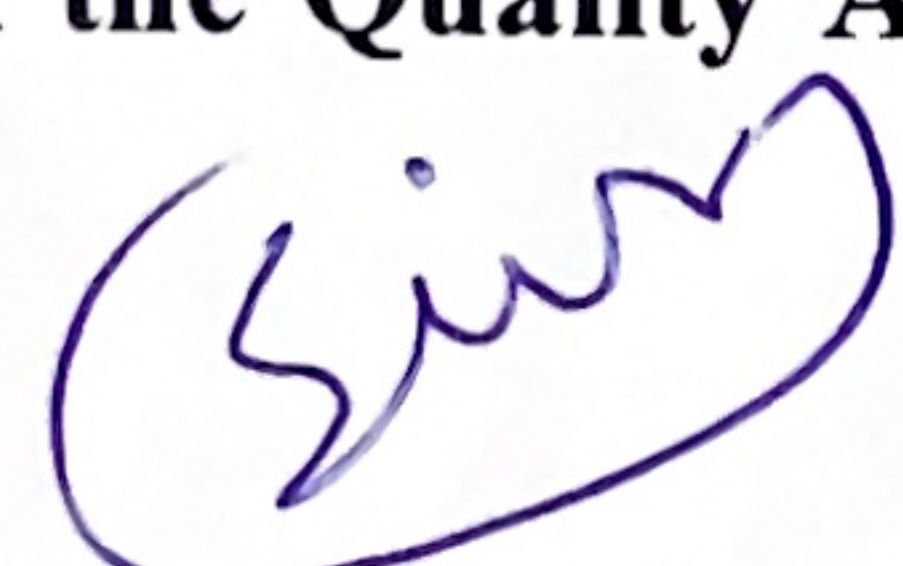
Date: 15/5/2025


The file is checked by: Assist. prof. Dr. Salah N Farhan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature: 



Approval of the Dean

Prof. Dr. Anees A. Khadom

15/5/2025

## 1. Program Vision

- 1- The department seeks to continuously develop curricula in line with modern scientific developments in the field of civil engineering, in addition to completing all scientific requirements in the department.
- 2- The department strives to improve the teaching staff by sending members of the department for postgraduate studies inside and outside the country and creating appropriate conditions for scientific research in order to obtain the required academic degrees.
- 3- The department aspires to develop the postgraduate studies program by introducing doctoral studies in various civil engineering specializations to support the department in particular and other government departments in general with specialized scientific cadres.
- 4- The department aspires to involve the largest possible number of teaching staff in engineering consulting through the engineering consulting office and the scientific office in the college to gain scientific experience and to provide service to various state institutions.

## 2. Program Mission

The department is constantly developing curricula to keep pace with modern scientific developments in the field of civil engineering in its various specializations. The department seeks to build advanced scientific laboratories by equipping modern laboratory equipment that contributes significantly to the field of postgraduate studies and scientific research, in addition to seeking to participate in conducting laboratory tests required by engineering projects at the governorate level as a whole.

## 3. Program Objectives

The educational objectives of the Bachelor of Civil Engineering program are to produce graduates (within a few years of graduation):

1. Prepare specialized engineers capable of meeting the needs of society in all sectors and all branches.
2. Work on developing the cognitive capabilities and technological skills necessary to prepare professional leaders in the field of civil engineering.
3. Build and develop programs that serve the field of continuing education and sustainable development of engineering capabilities through the development of advanced consulting and research capabilities.
4. Vertical expansion through the development of higher academic programs and the activation of productive research programs.
5. Work on achieving international accreditation for accredited academic programs

#### 4. Program Accreditation

Not at the moment

#### 5. Other external influences

No

#### 6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
University Requirements	—	—	—	
College Requirements	4	7	10%	
Department Requirements	31	72	90%	
Summer Training				Graduation Requirements
Other				

#### 7. Program Description

Year/Level	Course Code	Course Name	Credit Hours		
			Theoretical	Practical	Discussion
3 <sup>rd</sup> Year- 1 <sup>st</sup> Semester	CE301	Engineering Analysis	2	-	1
	CE303	Theory of Structure-I	3	-	1
	CE305	Soil Mechanic-I	2	2	1
	CE307	Reinforced Concrete - I	3	-	1

	CE309	Highway engineering-I	2	-	1
	CE311	Hydrology	2	-	1
	CE313	Structural Drawing-I	1	2	-
	CE315	Construction management	2	-	1
3 <sup>rd</sup> Year-2 <sup>nd</sup> Semester	CE302	Numerical Methods	2	-	1
	CE304	Theory of Structure-II	3	-	1
	CE306	Soil Mechanic-II	2	2	1
	CE308	Reinforced Concrete - II	3	-	1
	CE310	Highway engineering-II	2	2	1
	CE312	Hydraulic Structure	3	-	1
	CE314	Structural Drawing-II	1	2	-
	E301	Engineering Economy	2	-	-
4 <sup>th</sup> Year-1 <sup>st</sup> Semester	CE401	Reinforced concrete design -I	3	-	1
	CE403	Foundation engineering-I	3	-	1
	CE405	Steel structures design-I	2	-	1
	CE407	Traffic engineering	2	-	1
	CE409	Water Supply Engineering	2	-	1
	CE411	Methods of Construction	2	-	1
	CE413	Water Resources Engineering-I	2	-	1
	E401	Eng. Grad. Project-I	-	4	-
	E403	Engineering Professional Ethics	1	-	-
4 <sup>th</sup> Year-2 <sup>nd</sup> Semester	CE402	Reinforced concrete design -II	3	-	1
	CE404	Foundation engineering-II	3	-	1
	CE406	Steel structures design-II	2	-	1
	CE408	Transportation Engineering	2	-	1
	CE410	Sanitary and Environmental Engineering	3	2	-
	CE412	Estimation and Specifications	2	-	1
	CE414	Water Resources Engineering-II	2	-	1
	E402	Eng. Grad. Project-II	-	4	-

## 8. Expected learning outcomes of the program

### Knowledge

1. The ability to identify, formulate and solve engineering problems in civil engineering by applying the principles of engineering, science and mathematics.
2. The ability to produce engineering designs that meet the required needs within certain constraints by applying the processes of analysis, synthesis and design
3. The ability to create and implement appropriate measurements and tests with quality assurance, analysis and interpretation of the results and the ability to make engineering judgments on them to reach conclusions.

### Skills

- 1- The ability to realize the need to continue self-development of professional knowledge and how to find, evaluate, collect and apply it correctly.
- 2- The ability to work effectively within work teams, set goals, plan activities, meet deadlines and manage risks and uncertainty.

### Ethics

- 1- The ability to communicate effectively verbally with a group of people and in writing with different levels of knowledge and for different purposes.
- 2- The ability to recognize ethical and professional responsibilities in engineering issues and make sound judgments that take into account the consequences arising from them in the financial, environmental, societal and global fields.

## 9. Teaching and Learning Strategies

- Providing students with the basics and additional topics related to previous educational outcomes and skills to solve practical problems.
- Solving a group of practical examples by the academic staff.
- Students participate during the lecture in solving some practical problems.
- The department's scientific laboratories are monitored by the academic staff.

## 10. Evaluation methods

- Daily exams with practical and scientific questions.
- Participation marks for difficult competition questions among students.
- Assigning grades to homework assignments and reports assigned to them.
- Monthly exams for the curriculum in addition to the final exam.

<b>11. Faculty</b>						
<b>Faculty Members</b>						
<b>Academic Rank</b>	<b>Specialization</b>		<b>Special Requirements/Skills (if applicable)</b>		<b>Number of the teaching</b>	
	<b>General</b>	<b>Special</b>			<b>Staff</b>	<b>Lecturer</b>
<b>Prof.</b>	Civil Eng.	Structure			4	
<b>Asst. Prof.</b>	Civil Eng.	Structure			4	
<b>LECT.</b>	Civil Eng.	Structure			1	
<b>Asst. LECT.</b>	Civil Eng.	Structure			4	
<b>Prof.</b>	Civil Eng.	Soil and foundation mechanics			2	
<b>Asst. Prof.</b>	Civil Eng.	Soil and foundation mechanics			1	
<b>Asst. LECT.</b>	Civil Eng.	Soil and foundation mechanics			3	
<b>Prof.</b>	Civil Eng.	Water resources			1	
<b>Asst. Prof.</b>	Civil Eng.	Water resources			1	
<b>LECT.</b>	Civil Eng.	Water resources			1	
<b>Asst. LECT.</b>	Civil Eng.	Water resources			1	
<b>Prof.</b>	Civil Eng.	Project Management			1	
<b>LECT.</b>	Civil Eng.	Project Management			1	
<b>Asst. Prof.</b>	Civil Eng.	Geomatics			1	
<b>LECT.</b>	Civil Eng.	Building Materials			1	

## **Professional Development**

### **Mentoring new faculty members**

Faculty members are instructed to hold regular meetings and review questionnaires received from students with the Scientific Committee.

### **Professional development of faculty members**

The teaching staff undergoes development through training, workshops, and seminars. Progress is evaluated by subject performance.

## **12. Acceptance Criterion**

According to the rules and regulations of Ministry of Higher Education and Scientific Research.

## **13. The most important sources of information about the program**

- ✓ College website.
- ✓ The department's website and contact the department by email.

## **14. Program Development Plan**

- The courses are updated annually to keep up with developments in computer science
- The laboratories are also updated under academic curricula.
- Additionally, postgraduate programs are now being offered.

Program Skills Outline															
				Required program Learning outcomes											
Year/ Level	Course Code	CourseName	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
3 <sup>rd</sup> Year- 1 <sup>st</sup> Semester	CE301	Engineering Analysis	Basic	√											
	CE303	Theory of Structure-I	Basic	√											
	CE305	Soil Mechanic-I	Basic	√											
	CE307	Reinforced Concrete - I	Basic	√	√										
	CE309	Highway engineering-I	Basic										√		
	CE311	Hydrology	Basic									√			
	CE313	Structural Drawing-I	Basic						√						
	CE315	Construction management	Basic					√							
3 <sup>rd</sup> Year-2 <sup>nd</sup> Semester	CE302	Numerical Methods	Basic			√									
	CE304	Theory of Structure- II	Basic		√										
	CE306	Soil Mechanic-II	Basic	√	√										
	CE308	Reinforced Concrete - II	Basic		√										
	CE310	Highway engineering-II	Basic	√	√										
	CE312	Hydraulic Structure	Basic		√										
	CE314	Structural Drawing-II	Basic			√									
	E301	Engineering Economy	Basic					√							
4 <sup>th</sup> Year-1 <sup>st</sup>	CE401	Reinforced concrete design –I	Basic						√						

Semester	CE403	Foundation engineering-I	Basic									√			
	CE405	Steel structures design-I	Basic									√			
	CE407	Traffic engineering	Basic	√											
	CE409	Water Supply Engineering	Basic	√											
	CE411	Methods of Construction	Basic	√											
	CE413	Water Resources Engineering-I	Basic		√										
	E401	Eng. Grad. Project-I	Basic			√									
	E403	Engineering Professional Ethics	Basic					√							
4 <sup>th</sup> Year-2 <sup>nd</sup> Semester	CE402	Reinforced concrete design –II	Basic					√							
	CE404	Foundation engineering-II	Basic						√				√		
	CE406	Steel structures design-II	Basic										√		
	CE408	Transportation Engineering	Basic									√			
	CE410	Sanitary and Environmental Engineering	Basic									√			
	CE412	Estimation and Specifications	Basic	√	√										
	CE414	Water Resources Engineering-II	Basic		√	√									
	E402	Eng. Grad. Project-II	Basic							√				√	

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

## Course Description

1. Course Name:	
<b>Engineering Analysis</b>	
2. Course Code:	
<b>CE301</b>	
3. Semester / Year: 1 <sup>st</sup> Semester –	
<b>1st Semester – 3rd Year</b>	
4. Description Preparation Date:	
<b>24/4/2024</b>	
5. Available Attendance Forms:	
<b>Class Lectures</b>	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>45/3</b>	
7. Course administrator's name (mention all, if more than one name)	
<b>Name: <i>Jinan Laftah Abbas</i></b>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• This course is intended for third year engineering students and contains an introduction to special topics in engineering analysis that are useful for other stages and specializations.</li> <li>• Enabling the student to solve various mathematical problems and equations using engineering analysis methods</li> <li>• Identifying the types of mathematical topics and how to solve their problems using the analytical method</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> </ul>

- Delivering a seminar to the student in front of his fellow students to boost his self-confidence

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	4	Skill and knowledge	Introduction.	Lectures Notes	Daily exams + monthly exams
Week 2	4	Skill and knowledge	Matrices and determinants: -Algebra of matrices	Lectures Notes	Daily exams + monthly exams
Week 3	4	Skill and knowledge	Matrices and determinants: - Multiplication of matrices.	Lectures Notes	Daily exams + monthly exams
Week 4	4	Skill and knowledge	Matrices and determinants: -The special matrices.	Lectures Notes	Daily exams + monthly exams
Week 5	4	Skill and knowledge	Definition of determinants , basic properties.	Lectures Notes	Daily exams + monthly exams
Week 6	4	Skill and knowledge	The ad joint and inverse matrices.	Lectures Notes	Daily exams + monthly exams
Week 7	4	Skill and knowledge	Solution of linear equations by A-1 method.	Lectures Notes	Daily exams + monthly exams
Week 8	4	Skill and knowledge	Rank of a matrices.	Lectures Notes	Daily exams + monthly exams
Week 9	4	Skill and knowledge	Gauss elimination.	Lectures Notes	Daily exams + monthly exams
Week 10	4	Skill and knowledge	Vibration of a spring 1-degree of freedom:-	Lectures Notes	Daily exams + monthly exams
Week 11	4	Skill and knowledge	Hook`s law, Newton 2nd law of motion.	Lectures Notes	Daily exams + monthly exams
Week 12	4	Skill and knowledge	Free-undamped oscillation-derivation and problems.	Lectures Notes	Daily exams + monthly exams
Week 13	4	Skill and knowledge	Free-damped oscillation	Lectures Notes	Daily exams + monthly exams
Week 14	4	Skill and knowledge	derivation and problems.	Lectures Notes	Daily exams + monthly exams
Week 15	4	Skill and knowledge	Forced-damped undamped oscillation	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	
Main references (sources)	
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

## Course Description

1. Course Name:	
<b>Soil Mechanics I</b>	
2. Course Code:	
<b>CE305</b>	
3. Semester / Year: 1 <sup>st</sup> Semester –	
<b>1st Semester – 3rd Year</b>	
4. Description Preparation Date:	
<b>24/4/2024</b>	
5. Available Attendance Forms:	
<b>Class Lectures</b>	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>75/3</b>	
7. Course administrator's name (mention all, if more than one name)	
<b>Name: <i>Jassim Mohammed abbas</i></b>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Enabling the student to rely on himself in the workplace in matters of design and analysis</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> <li>• Delivering a seminar to the student in front of his fellow students to boost his self-confidence</li> </ul>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1 to Week 4	20	Analysis and design	introduction of soil mech	Lectures Notes	Daily exams + monthly exams
Week 5 to Week 8	20	Analysis and design	Classification of soil	Lectures Notes	Daily exams + monthly exams
Week 9 to Week 12	20	Analysis and design	Soil Compaction	Lectures Notes	Daily exams + monthly exams
Week 13 to Week 15	15	Analysis and design	permeability	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<i>Principles</i> of Geotechnical Engineering By Braja M <i>Das</i>
Main references (sources)	<i>Principles</i> of Geotechnical Engineering By Braja M <i>Das</i>
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

## Course Description

1. Course Name:	
Soil Mechanics II	
2. Course Code:	
CE306	
3. Semester / Year: 1 <sup>st</sup> Semester –	
2nd Semester – 3rd Year	
4. Description Preparation Date:	
24/4/2024	
5. Available Attendance Forms:	
Class Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75/3	
7. Course administrator's name (mention all, if more than one name)	
Name: <i>Jassim Mohammed abbas</i>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Enabling the student to rely on himself in the workplace in matters of design and analysis</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> <li>• Delivering a seminar to the student in front of his fellow students to boost his self-confidence</li> </ul>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1 to Week 4	20	Analysis and design	Seepage	Lectures Notes	Daily exams + monthly exams
Week 5 to Week 8	20	Analysis and design	Stresses in Soil Mass	Lectures Notes	Daily exams + monthly exams
Week 9 to Week 12	20	Analysis and design	compressibility of Soil	Lectures Notes	Daily exams + monthly exams
Week 13 to Week 15	15	Analysis and design	shear strength of the Soil	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<i>Principles</i> of Geotechnical Engineering By Braja M <i>Das</i>
Main references (sources)	<i>Principles</i> of Geotechnical Engineering By Braja M <i>Das</i>
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

## Course Description

1. Course Name:	
<b>Structural Drawing I</b>	
2. Course Code:	
<b>CE313</b>	
3. Semester / Year: 1 <sup>st</sup> Semester –	
<b>1st Semester – 3rd Year</b>	
4. Description Preparation Date:	
<b>24/4/2024</b>	
5. Available Attendance Forms:	
<b>Class Lectures</b>	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>45/3</b>	
7. Course administrator's name (mention all, if more than one name)	
<b>Name: <i>Abbas H. Mohammed</i></b>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Learn the basics of structural drawing for civil structures</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> </ul>

## 10. Course Structure

<b>Week</b>	<b>Hours</b>	<b>Required Learning Outcomes</b>	<b>Unit or subject name</b>	<b>Learning method</b>	<b>Evaluation method</b>
Week 1 to Week 4	12	Drawing	Foundations	Lectures Notes	Daily exams + monthly exams
Week 5 to Week 8	12	Drawing	Walls and Columns	Lectures Notes	Daily exams + monthly exams
Week 9 to Week 12	12	Drawing	Slabs and Floors	Lectures Notes	Daily exams + monthly exams
Week 13 to Week 15	9	Drawing	Beams and Girders	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<ul style="list-style-type: none"><li>• Civil and Structural Drawing by Talal Jarjees</li></ul>
Main references (sources)	<ul style="list-style-type: none"><li>• Manual for Detailing Reinforced Concrete Structures to EC2 by Jose Clalvera</li></ul>
Recommended books and references (scientific journals, reports...).	<ul style="list-style-type: none"><li>•</li></ul>
Electronic references, Internet sites...	<ul style="list-style-type: none"><li>•</li></ul>

## Course Description

1. Course Name:	
<b>Structural Drawing II</b>	
2. Course Code:	
<b>CE314</b>	
3. Semester / Year: 1 <sup>st</sup> Semester –	
<b>2nd Semester – 3rd Year</b>	
4. Description Preparation Date:	
<b>24/4/2024</b>	
5. Available Attendance Forms:	
<b>Class Lectures</b>	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>45/3</b>	
7. Course administrator's name (mention all, if more than one name)	
<b>Name: <i>Abbas H. Mohammed</i></b>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Learn the basics of structural drawing for civil structures</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> </ul>

## 10. Course Structure

<b>Week</b>	<b>Hours</b>	<b>Required Learning Outcomes</b>	<b>Unit or subject name</b>	<b>Learning method</b>	<b>Evaluation method</b>
Week 1 to Week 4	12	Drawing	Stair Ways	Lectures Notes	Daily exams + monthly exams
Week 5 to Week 6	6	Drawing	Plan	Lectures Notes	Daily exams + monthly exams
Week 7 to Week 8	6	Drawing	Sectional elevation	Lectures Notes	Daily exams + monthly exams
Week 9 to Week 10	6	Drawing	Elevations	Lectures Notes	Daily exams + monthly exams
Week 11 to Week 12	6	Drawing	Foundation Plan	Lectures Notes	Daily exams + monthly exams
Week 13 to Week 15	9	Drawing	Doors and Windows	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<ul style="list-style-type: none"><li>• Civil and Structural Drawing by Talal Jarjees</li></ul>
Main references (sources)	<ul style="list-style-type: none"><li>• Manual for Detailing Reinforced Concrete Structures to EC2 by Jose Clalvera</li></ul>
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

## Course Description

1. Course Name:	
Theory of Structure I	
2. Course Code:	
CE303	
3. Semester / Year: 1 <sup>st</sup> Semester –	
1st Semester – 3rd Year	
4. Description Preparation Date:	
24/4/2024	
5. Available Attendance Forms:	
Class Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60/3	
7. Course administrator's name (mention all, if more than one name)	
Name: <i>Wissam D. Salman</i>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Determine the type of structures in terms of structural stability, make a decision and justify it if the structure is unstable, analyze beams, structures, arches, supports, and composite structures, and identify the types of supports.</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> <li>• Delivering a seminar to the student in front of his fellow students to boost his self-confidence</li> </ul>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	4	Skill and knowledge	Introduction	Lectures Notes	Daily exams + monthly exams
Week 2	4	Skill and knowledge	Stability and determination of thresholds	Lectures Notes	Daily exams + monthly exams
Week 3	4	Skill and knowledge	Stability and determination of annulus and structures	Lectures Notes	Daily exams + monthly exams
Week 4	4	Skill and knowledge	Stability and determination of arches and composite structures	Lectures Notes	Daily exams + monthly exams
Week 5	4	Skill and knowledge	Analysis of determinate structures- thresholds and structures	Lectures Notes	Daily exams + monthly exams
Week 6	4	Skill and knowledge	Analysis of determinate structures- annulus	Lectures Notes	Daily exams + monthly exams
Week 7	4	Skill and knowledge	Analysis of determinate structures- arches and composite structures	Lectures Notes	Daily exams + monthly exams
Week 8	4	Skill and knowledge	Influence lines of determinate structures- thresholds	Lectures Notes	Daily exams + monthly exams
Week 9	4	Skill and knowledge	Influence lines of determinate structures- annulus	Lectures Notes	Daily exams + monthly exams
Week 10	4	Skill and knowledge	Influence lines of determinate structures- structures	Lectures Notes	Daily exams + monthly exams
Week 11	4	Skill and knowledge	Influence lines of determinate structures- composite structures	Lectures Notes	Daily exams + monthly exams
Week 12	4	Skill and knowledge	Approximate analysis of indeterminate structures	Lectures Notes	Daily exams + monthly exams
Week 13	4	Skill and knowledge	Approximate analysis of indeterminate structures	Lectures Notes	Daily exams + monthly exams
Week 14	4	Skill and knowledge	Elastic deformation of determinate structures- virtual work method	Lectures Notes	Daily exams + monthly exams
Week 15	4	Skill and knowledge	Elastic deformation of determinate structures- Castigliano's theory	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<b>Elementary Theory of Structures</b>
Main references (sources)	<b>By : YUAN-YU HSIEH, 10th Edition, 1970, published by Prentice-Hall, Inc., Englewood Cliffs, New Jersey.</b>
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

## Course Description

1. Course Name:	
Theory of Structure II	
2. Course Code:	
CE304	
3. Semester / Year: 1 <sup>st</sup> Semester –	
2nd Semester – 3rd Year	
4. Description Preparation Date:	
24/4/2024	
5. Available Attendance Forms:	
Class Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60/3	
7. Course administrator's name (mention all, if more than one name)	
Name: <i>Wissam D. Salman</i>	
8. Course Objectives	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Analysis of indeterminate structures using approximate methods, analysis of indeterminate structures (homogeneous displacement method), analysis of indeterminate structures (least work method), analysis of indeterminate structures (slope and deflection method), analysis of indeterminate structures (moment distribution method)</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The weekly lectures included providing students with the basics and topics related to the pre-skills learning outcomes to solve practical problems through presentation, lecture or conducting experiments.</li> <li>• Solving a set of practical and applied examples by faculty members.</li> <li>• Through discussion, students participate in solving some practical problems.</li> <li>• Asking the student to visit the library and the Internet to obtain additional knowledge about the study materials.</li> <li>• Delivering a seminar to the student in front of his fellow students to boost his self-confidence</li> </ul>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	4	Skill and knowledge	Analysis of Indeterminate Structures - Homogeneous Displacement Method	Lectures Notes	Daily exams + monthly exams
Week 2	4	Skill and knowledge	Analysis of Indeterminate Structures - Homogeneous Displacement Method	Lectures Notes	Daily exams + monthly exams
Week 3	4	Skill and knowledge	Analysis of Indeterminate Structures - Least Work Method	Lectures Notes	Daily exams + monthly exams
Week 4	4	Skill and knowledge	Analysis of Indeterminate Structures - Slope and Deflection Method	Lectures Notes	Daily exams + monthly exams
Week 5	4	Skill and knowledge	Analysis of Indeterminate Structures - Slope and Deflection Method	Lectures Notes	Daily exams + monthly exams
Week 6	4	Skill and knowledge	Analysis of Indeterminate Structures - Moment Distribution Method	Lectures Notes	Daily exams + monthly exams
Week 7	4	Skill and knowledge	Analysis of Indeterminate Structures - Moment Distribution Method	Lectures Notes	Daily exams + monthly exams
Week 8	4	Skill and knowledge	Indeterminate Structures Graphs of Indeterminate Structures - Trusses	Lectures Notes	Daily exams + monthly exams
Week 9	4	Skill and knowledge	Indeterminate Structures Graphs of Indeterminate Structures - Frames	Lectures Notes	Daily exams + monthly exams
Week 10	4	Skill and knowledge	Indeterminate Structures Graphs of Indeterminate Structures - Structures	Lectures Notes	Daily exams + monthly exams
Week 11	4	Skill and knowledge	Indeterminate Structures Graphs of Indeterminate Structures - Composite Structures	Lectures Notes	Daily exams + monthly exams
Week 12	4	Skill and knowledge	Rigidity Method in Analysis of Definite and Indeterminate Structures	Lectures Notes	Daily exams + monthly exams
Week 13	4	Skill and knowledge	Rigidity Method in Analysis of Definite and Indeterminate Structures	Lectures Notes	Daily exams + monthly exams
Week 14	4	Skill and knowledge	Rigidity Method in Analysis of Definite and Indeterminate Structures	Lectures Notes	Daily exams + monthly exams
Week 15	4	Skill and knowledge	Introduction by Finite Elements	Lectures Notes	Daily exams + monthly exams

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exam, report ... etc

## 12. Learning and Teaching Resources

Books Required reading:	<b>Elementary Theory of Structures By : YUAN-YU HSIEH, 10th Edition, 1970, published by Prentice-Hall, Inc., Englewood Cliffs, New Jersey.</b>
Main references (sources)	<b>Structural Analysis By: Russell C. Hibbeler, 5th Edition, 2002, published by Prentice-Hall, Inc. Upper Saddle River, New Jersey 07458</b>
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	