Module Name:	
Construction management	
Module Code:	
WCV-31-07	
Semester / Year:	
First Semester/2024-2025	
Date of Preparation of this Description:	
23/9/2024	
Available Attendance Formats:	
In-person only	
Total Credit Hours / Total Units:	
Lectures are in person at the university only	
Name of the Course Coordinator (if there are multiple names):	
Name: israa mahdi kadhim **Email:** israa.mahdi@uowa.edu.iq	
Module Objectives:	
Module Objectives	•Introducing students to the basic concepts of construction project management. •Identifying the parties involved in the construction project. •Studying the methods of planning and programming construction projects using different planning methods. •Identifying the methods of project delivery •Identifying the basic elements of construction management •Programming the construction project using a computer programs
1. **Teaching and Learning Strategy**	
Strategy:	1-Encourage students to participate in exercises while refining and expanding their critical thinking skills, through interactive lessons and thinking about some simple experiments that include some sampling activities that interest students. 2. Arouse students' curiosity about the best management and planning methods in projects.

	3. Link engineering management to other related subjects, such as estimation, construction methods, etc. 4. Link the theoretical side to the practical side and transfer students' minds to construction projects. 5. Calculations must be realistic and do not accept incorrect numbers through comparison and intuition.

2. Module Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
16	3	Cognitive objectives: At the end of the chapter, the student will be able to: 1. Conduct project time planning. 2. Conduct project schedules. 3. Identify the resources needed to complete project activities. Emotional and moral objectives: 1. Take an interest in project management. 2. Stand in front of any project and notice the correct ways to manage it. 3. Think deeply about the importance of planning and project management. 4. Civil engineering is a broad field that is not limited to construction work only.	1-Introduction, construction management concept, Phases of construction project, persons involved of construction process. 2-The basic elements of construction management, goals and functions of construction management, success factors in the construction . 3-Planning, stages of the planning, the elements of good planning, the steps applied for the preparation of the main planning. 4-Methods of the planning, Bar - chart method . 5-Critical path method (arrow diagram, nodes diagram) 6-PERT method 7-Line of balance method 8-Resources management 9-Planning by using	1- Lectures 2- Homework 3- Exams 4- Questions and discussions in class 5- Extracurricular activities 6- Field trips	1-Exams and tests 2- Student participation during lectures 3- Student responses to a questionnaire about the curriculum and the faculty member 4-Extracurricular activities

			computer programs		

Module Evaluation
1- Exams and tests 2- Student participation during lectures 3- Student responses to a questionnaire about the curriculum and the faculty member 4- Extracurricular activities

Learning and Teaching Resources.	
Required textbooks (curricular books, if any)	Programming and Scheduling Techniques (Thomas Euher).2003.
Main references (sources)	Project Management (F. Gray and W. Larson) 7th Edition 2018
Recommended books and references (scientific journals, reports...)	Project management planning and control (albert laster2006)
Electronic References, Websites	

Course Description Form

1. Course Name:
Construction management II
2. Course Code:
WCV-32-07
3. Semester / Year:
2 semester/2024-2025
4. Description Preparation Date:
٢٠٢٤-١٠-٢٣
5. Available Attendance Forms:
Lecture are in person at the university only
6. Number of Credit Hours (Total) / Number of Units (Total)
٣Hours /2units
7. Course administrator's name (mention all, if more than one name)
Name: israa mahdi kadhim Email: israa.mahdi@uowa.edu.iq
8. Course Objectives

Course Objectives	**• Introducing students to the basic concepts of construction project management.** **• Identifying the parties involved in the construction project.** **• Studying the methods of planning and programming construction projects using different planning methods** **• Identifying the methods of project delivery** **• Identifying the basic elements of construction management**

	• Programming the construction project using a programs

9. Teaching and Learning Strategies

Strategy	1. Encourage students to participate in exercises while refi expanding their critical thinking skills, through interactiv les thinking about some simple experiments that include s me activities that interest students. 2. Arouse students' curiosity about the best management and methods in projects. 3. Link engineering management to other related subj cts, estimation, construction methods, etc. 4. Link the theoretical side to the practical side and transfer st uder to construction projects. 5. Calculations must be realistic and do not accept incorrect nu nber comparison and intuition.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
16		Cognitive objectiv At the end of t chapter, the stude will be able to: 1. Conduct proj time planning. 2. Conduct proj schedules. 3. Identify t resources needed complete proj activities. Emotional a moral objectives:	1- Introdu ion, constru ion manage ent concep Phases constru ion project, person	1- Lectures 2- Homework 3- Exams 4-Questions a discussions class 5- Extracurricula activities	1- Exa and test 2- Stu nt part pati duri g lect es

		1. Take an interest project management. 2. Stand in front any project a notice the corr ways to manage it 3. Think deep about t importance planning and proj management. 4. Civil engineeri is a broad field th is not limited construction wo only.	involve of constru ion process 2- T basic elemen of constru ion manage ent, go and functio of constru ion manage ent, success factors the constru ion . 3- Plannin stages the plannin the elemen of go plannin the ste applied for t prepara on of t main plannin	6- Field trips	3- Stud nt resp nses to ques onn e abo the curr ulur and the facu y men er 4- Extr urri lar acti ies

			4- Method of t planni Bar chart method 5- Criti path method (arrow diagra nodes diagra 6-PERT method 7- Line balance method 8- Resour s manage ent 9- Planni by usi comput progra		

11. Course Evaluation

1- Exams and tests

2- Student participation during lectures

3- Student responses to a questionnaire about the curriculum and the faculty member 4- Extracurricular activities

12. Learning and Teaching Resources

Programming and Scheduling Techniques (Thomas Euher).2003. Project Management (F. Gray and W. Larson) 7th Edition 2018. Engineering Economics (R. Panneerselvam) 2012.	
Project Management planning and control (Albert Lester) 2006	
Construction Management Principles of construction management By: Roy Pitlcher Modern Construction management By: F. Harris Critical path methods in construction practice By: Antill	

Course Description Form

1. Course Name:
Engineering Analysis
2. Course Code:
WCV-31-06
3. Semester / Year:
Semester
4. Description Preparation Date:
23/9/2024
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
No. of hours 5/ No. of units 2
7. Course administrator's name (mention all, if more than one name)
Name: Asst.Lect. Sally Mowafaq Email: sallay.muwafaq@uowa.edu.iq

8. Course Objectives	
Course Objectives	- The study of engineering analysis aims to achieve the objectives related to the design and implementation of infrastructure in an effective and sustainable manner. -The course aims to introduce students to differential equations and their solution methods and how they are implemented in various engineering applications. -Students must have knowledge of solving matrices and methods of applying them in engineering as they help in analyzing systems and solving complex problems. -Enabling students to solve linear equations and simultaneous equations.

9. Teaching and Learning Strategies	
Strategy	The student acquires the skill of solving differential equations in addition to distinguishing the formulas of equations, knowledge of engineering applications and their analysis and implementation using differential equations as well as other mathematical and analytical methods. Preparing students to become engineers capable of analyzing and interpreting problems and then providing effective solutions that contribute to the development of various engineering systems.

10. Course Structure

Week	Hours	Required Learning	Unit or subject	Learni	Evaluation method

		Outcomes	name	ng metho d	
15	5	1. Students will be able to understand the basic principles of mathematical and engineering analysis including matrices calculations and differential integrals. 2.Students will learn about methods of solving differential equations and their engineering applications. 3. Students will calculate matrices and their field of application. 4. Students will learn about applying numerical methods to solve algebraic and differential equations. 5.Solve partial differential equation problems with finite values numerically.	•First order ordinary differential equations. • Linear differential equations with constant coefficients. • Matrices and their applications. • Simultaneous differential equations. • Numerical solutions of ordinary differential equations. • Finite differences. • Interpolation. • Numerical differentiation • Numerical integration and computer application . • Fourier series. • Finite value partial differential equations. • Numerical solution of partial differential equations.	In person	Exams Home works Class works

11. Course Evaluation

Mid. course exam = 30%
Quiz = 5%
Class and home works = 3%
Daily attendance = 2%
Final exam = 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	....
Main references (sources)	Advanced Engineering Mathematics (9th edition, 2006) - kreyszig
Recommended books and references (scientific journals, reports…)	Ordinary Differential Equations: An Elementary Textbook Students of Engineering, Mathematics, and the sciences edition, 1985)- Tenenbaum and pollard.
Electronic References, Websites	https://www.uomustansiriyah.edu.iq/lectures.php?id_dept=148&id_college=5&level=3

Course Description

Course Description Form

1. Course Name:
Engineering Analysis
2. Course Code:
WCV-32-06
3. Semester / Year:
2 Semester
4. Description Preparation Date:
23/10/2024
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
No. of hours 5/ No. of units 3
7. Course administrator's name (mention all, if more than one name)
Name: Asst.Lect. Sally Mowafaq Email: sallay.muwafaq@uowa.edu.iq
8. Course Objectives

Course Objectives	- The study of engineering analysis aims to achieve the objectives related to the design and implementation of infrastructure in an effective and sustainable manner. -The course aims to introduce students to differential equations and their solution methods and how they are implemented in various engineering applications. -Students must have knowledge of solving matrices and methods of applying them in engineering as they help in analyzing systems and solving complex problems. -Enabling students to solve linear equations and simultaneous equations.
9. Teaching and Learning Strategies	
Strategy	The student acquires the skill of solving differential equations in addition to distinguishing the formulas of equations, knowledge of engineering applications and their analysis and implementation using differential equations as well as other mathematical and analytical methods. Preparing students to become engineers capable of analyzing and interpreting problems and then providing effective solutions that contribute to the development of various engineering systems.

10. Course Structure

Week	Hours	Required Learning	Unit or subject	Learni	Evaluation method

		Outcomes	name	ng metho d	
15	5	1. Students will be able to understand the basic principles of mathematical and engineering analysis including matrices calculations and differential integrals. 2.Students will learn about methods of solving differential equations and their engineering applications. 3. Students will calculate matrices and their field of application. 4. Students will learn about applying numerical methods to solve algebraic and differential equations. 5.Solve partial differential equation problems with finite values numerically.	•First order ordinary differential equations. • Linear differential equations with constant coefficients. • Matrices and their applications. • Simultaneous differential equations. • Numerical solutions of ordinary differential equations. • Finite differences. • Interpolation. • Numerical differentiation • Numerical integration and computer application . • Fourier series. • Finite value partial differential equations. • Numerical solution of partial differential equations.	In person	Exams Home works Class works

11. Course Evaluation

Mid. course exam = 30%
Quiz = 5%
Class and home works = 3%
Daily attendance = 2%
Final exam = 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	....
Main references (sources)	Advanced Engineering Mathematics (9th edition, 2006) - kreyszig
Recommended books and references (scientific journals, reports…)	Ordinary Differential Equations: An Elementary Textbook Students of Engineering, Mathematics, and the sciences edition, 1985)- Tenenbaum and pollard.
Electronic References, Websites	https://www.uomustansiriyah.edu.iq/lectures.php?id_dept=148&id_college=5&level=3

UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
2017
كلية الهندسة

Course Description Form

1. Course Name:
Irrigation Engineering
2. Course Code:
WCV-31-05
3. Semester / Year:
Semester system
4. Description Preparation Date:
2024-9-24
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours (48) (32 theoretical hours - 16 Tutorial) Number of units 2
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Naeem GHazi Email: Zainab.Naeem@uowa.edu.iq
8. Course Objectives

Course Objectives	1-Introducing students to the principles of irrigation and drainage engineering 2-Introducing students to the basics used in the field of designing irrigation networks and drainage networks 3- Definition of the relationship between the Persian Empire 3- Identify the mathematical relationships related to water consumption 5-Identify the different methods
9. Teaching and Learning Strategies	
Strategy	1 Arouse the student's curiosity about the nature of irrigation and drainage engineering 2. How to use various topics as a basis for the process of designing narrative channels 3. Linking the theoretical side with the practical side a transferring students' minds to realistic applications

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction in Irrigation and drainage:	Irrigation Engineering	presence	Daily and monthly tests
2–3	6	Soil and water:	Irrigation Engineering	presence	Daily and monthly tests
4–6	9	Irrigation water:	Irrigation Engineering	presence	Daily and
7-8	6	Infiltration and Intake:	Irrigation Engineering	presence	monthly tests
9	3	Methods of irrigation:	Irrigation Engineering	presence	Daily and
10	3	Border Irrigation:	Irrigation Engineering	presence	monthly tests
11	3	urrow Irrigation:	Irrigation Engineering	presence	Daily and
12	3	Basin Irrigation:	Irrigation Engineering	presence	monthly tests
13-16	9	prinkler and trickle Irrigation:	Irrigation Engineering	presence	Daily and

11. Course Evaluation

10 marks (daily preparation, daily and oral exams, homework, and class activities)
30 marks (monthly exams)
60 marks (final exam)

12. Learning and Teaching Resources

Main references (sources)	Michael A. M., "Irrigation Theory and ,Practice" Vikas Publishing House New Del 1981. Chow , V.T. "Open Channel Hydrauli , McGraw-Hill company ,1973.

Course Description

Recommended books and references (scientific journals, reports…)	Waller,P., Yitayew,M. "Irrigation and Drainage Engineering" Springer International Publishing, 2016
Electronic References, Websites	Luthin J.N. "Drainage Engineering", Wiley Eastern Private Limited , New Delhi 1970 The university's official website, whose address is https://elearning.uowa.edu.iq

Course Description Form

1. Course Name:
Irrigation Engineering II
2. Course Code:
WCV-32-05
3. Semester / Year:
2 Semester system
4. Description Preparation Date:
2024-10-24
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours (4)hours Number of units 3
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Neam GHazi Email: zainab.naeem@uowa.edu.iq
8. Course Objectives

Course Objectives	1-Introducing students to the principles of irrigation and drainage engineering 2-Introducing students to the basics used in the field of designing irrigation networks and drainage networks 3- Definition of the relationship between the Persian Empire 3- Identify the mathematical relationships related to water consumption 5-Identify the different methods
9. Teaching and Learning Strategies	
Strategy	1 Arouse the student's curiosity about the nature of irrigation and drainage engineering 2. How to use various topics as a basis for the process of designing narrative channels 3. Linking the theoretical side with the practical side a transferring students' minds to realistic applications

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	3	Introduction in Irrigation and drainage:	Irrigation Engineering	presence	Daily and monthly tests
2-3	6	Soil and water:	Irrigation Engineering	presence	Daily and monthly tests
4-6	9	Irrigation water:	Irrigation Engineering	presence	Daily and
7-8	6	Infiltration and Intake:	Irrigation Engineering	presence	monthly tests
٩	3	Methods of irrigation:	Irrigation Engineering	presence	Daily and
١٠	3	Border Irrigation:	Irrigation Engineering	presence	monthly tests
١١	3	urrow Irrigation:	Irrigation Engineering	presence	Daily and
١٢	3	Basin Irrigation:	Irrigation Engineering	presence	monthly tests
13-16	9	prinkler and trickle Irrigation:	Irrigation Engineering	presence	Daily and

11. Course Evaluation

10 marks (daily preparation, daily and oral exams, homework, and class activities)
30 marks (monthly exams)
60 marks (final exam)

12. Learning and Teaching Resources

Main references (sources)	Michael A. M., "Irrigation Theory and ,Practice" Vikas Publishing House New Del 1981. Chow , V.T. "Open Channel Hydrauli , McGraw-Hill company ,1973.

Recommended books and references (scientific journals, reports…)	Waller,P., Yitayew,M. "Irrigation and Drainage Engineering" Springer International Publishing, 2016
Electronic References, Websites	Luthin J.N. "Drainage Engineering", Wiley Eastern Private Limited , New Delhi 1970 The university's official website, whose address is https://elearning.uowa.edu.iq

Course Description Form

1. Course Name:
Reinforced Concrete Design
2. Course Code:
3. Semester / Year:
3rd year
4. Description Preparation Date:
28-09-2024
5. Available Attendance Forms:
Regular students
6. Number of Credit Hours (Total) / Number of Units (Total)
120/6
7. Course administrator's name (mention all, if more than one name)
Name: Mustafa Kareem Hamzah Email: Mustafa.k.hamzah@gmail.com
8. Course Objectives

Course Objectives	**1- Designing reinforced concrete beams in terms of bending, shear and torsion.** **2- Determining the deflection in beams** **3- Designing and analyzing of slabs** **4- Analyzing and designing structural columns.** **5- Being able to know the appropriate length of reinforcing steel and the places where the steel is cut practically.**

9. Teaching and Learning Strategies

Strategy	Homework Feedback Brainstorm

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1–5	20	Introducing students to the basic principles of reinforced concrete designs, identifying the properties of concrete and reinforcing steel, knowing the behavior of beams against the stresses imposed on them, designing a single-reinforced beam.	Introduction to Reinforced Concrete Structures Fundamentals of Reinforced concrete Design Concrete and Steel materials Flexural Beam Behavior Single Reinforcement beam	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
6–10	20	Ability to design Double reinforcement beam , T-beam design, Identify beam behavior against shear stresses, Beam design against shear stress	Double Reinforcement beam T-beam Design Shear behavior in beam Shear design for beam	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
11–15	20	Calculating the torsional moment and the resulting stresses and designing the beam against torsional stresses, designing the beam against combined stresses between shear and torsion, knowing the effect of deflection on the lintel and how to calculate it	Torsion behavior in beam Torsion design for beam Shear-Torsion Design Serviceability and Deflection	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
16–20	20	Study of load transfer between structural elements, knowledge of the slab's behavior against the loads imposed on it, knowledge of the	Load transfer in structural members Behavior of Reinforced concrete slabs under loading	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects

		design of a one-way slab	One-way slab design		
21–25	**20**	Knowing the methods of designing a two-way slab	Two-way slab design	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
26–30	**20**	Knowing the column's behavior towards the loads applied to it, identifying the methods of designing short and long structural columns	Behavior of Reinforced concrete column under loading Short column design Slender Column Design	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	-Design of Reinforced Concrete Structures by Nilson -ACI-Code-318M
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
2017
كلية الهندسة

Course Description Form

1. Course Name:
Reinforced Concrete Design II
2. Course Code:
WCV-32-01
3. Semester / Year:
3rd year /2 semester
4. Description Preparation Date:
23-10-2024
5. Available Attendance Forms:
Regular students
6. Number of Credit Hours (Total) / Number of Units (Total)
4 hours/ 3unite
7. Course administrator's name (mention all, if more than one name)
Name: Qassim ail huseen Email: Qassim.ali@uowa.edu.iq
8. Course Objectives

Course Objectives	**1- Designing reinforced concrete beams in terms of bending, shear and torsion.** **2- Determining the deflection in beams** **3- Designing and analyzing of slabs** **4- Analyzing and designing structural columns.** **5- Being able to know the appropriate length of reinforcing steel and the places where the steel is cut practically.**

9. Teaching and Learning Strategies	
Strategy	Homework Feedback Brainstorm

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1–5	**20**	Introducing students to the basic principles of reinforced concrete designs, identifying the properties of concrete and reinforcing steel, knowing the behavior of beams against the stresses imposed on them, designing a single-reinforced beam.	Introduction to Reinforced Concrete Structures Fundamentals of Reinforced concrete Design Concrete and Steel materials Flexural Beam Behavior Single Reinforcement beam	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
6–10	**20**	Ability to design Double reinforcement beam , T-beam design, Identify beam behavior against shear stresses, Beam design against shear stress	Double Reinforcement beam T-beam Design Shear behavior in beam Shear design for beam	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
11–15	**20**	Calculating the torsional moment and the resulting stresses and designing the beam against torsional stresses, designing the beam against combined stresses between shear and torsion, knowing the effect of deflection on the lintel and how to calculate it	Torsion behavior in beam Torsion design for beam Shear-Torsion Design Serviceability and Deflection	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
16–20	**20**	Study of load transfer between structural elements, knowledge of the slab's behavior against the loads imposed on it, knowledge of the design of a one-way slab	Load transfer in structural members Behavior of Reinforced concrete slabs under loading One-way slab design	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects

21–25	**20**	Knowing the methods of designing a two-way slab	Two-way slab design	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects
26–30	**20**	Knowing the column's behavior towards the loads applied to it, identifying the methods of designing short and long structural columns	Behavior of Reinforced concrete column under loading Short column design Slender Column Design	Theoretical + Applied + Movie Show	1. Quizzes 2. Term exams 3.Extracurricular assignments 4. Reports + accounts of various projects

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	-Design of Reinforced Concrete Structures by Nilson -ACI-Code-318M
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
2017
كلية الهندسة

Course Description Form

1. Course Name:
Soil Mechanics
2. Course Code:
3. Semester / Year:
2nd Semester/ 2024
4. Description Preparation Date:
18/3/2024
5. Available Attendance Forms:
In-person classes
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hrs
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Dr. Mustafa Al-saedi Email: Mustafa.al@uowa.edu.iq

8. Course Objectives

Course Objectives	✓ **Studying the seepage behavior under the hydraulic structures** ✓ **Calculate the stresses under the geostatic and structural loading** ✓ **Determine the strength of soils and its parameters** ✓ **Estimating the different types of settlement under the stresses**

9. Teaching and Learning Strategies

Strategy	✓ **Videos and phtted reports about the objectives are the fast and easy strategy to reach the information about the foundation problems and soil behavior.**

10. Course Structure

Week	Hrs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	15	**Learning the seepage under hydraulic structures such as dam**	**Two-Dimensiona Flow**	**Class& laboratory**	**Laboratory reports, daily monthly exams**

5-7	15	**Studying the stresses above soil's layers**	**Stress in a soil mass**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
8-11	15	**Estimating the different types settlement under the effec stresses**	**Compressibilit y of Soil**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
12-14	15	**Determine the Shear Strength of Soil and its parameters**	**Shear Strength of Soil**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
15	15	**Review of the above study**			

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	✓ Soil Mechanics R.F.Graig ✓ Soil Mechanics T.W.Lamb.R.V.Whitman ✓ Soil Mechanics Basic Concepts and Engineering Application. A.Aysen
Main references (sources)	✓ Advanced Soil Mechanics, Das ✓ Soil Mechanics Fundamentals
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Google schooler; YouTube

Course Description Form

1. Course Name:
Soil Mechanics II
2. Course Code:
WCV-32-02
3. Semester / Year:
2nd Semester/ 2024
4. Description Preparation Date:
23/10/2024
5. Available Attendance Forms:
In-person classes
6. Number of Credit Hours (Total) / Number of Units (Total)
5 hrs. / 3 Unite
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Dr. Mustafa Al-saedi Email: Mustafa.al@uowa.edu.iq
8. Course Objectives

Course Objectives	✓ **Studying the seepage behavior under the hydraulic structures** ✓ **Calculate the stresses under the geostatic and structural loading** ✓ **Determine the strength of soils and its parameters** ✓ **Estimating the different types of settlement under the stresses**

9. Teaching and Learning Strategies

Strategy	✓ **Videos and photted reports about the objectives are the fast and easy strategy to reach the information about the foundation problems and soil behavior.**

10. Course Structure

Week	Hrs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	15	**Learning the seepage under hydraulic structures such as dam**	**Two-Dimensiona Flow**	**Class& laboratory**	**Laboratory reports, daily monthly exams**

5-7	15	**Studying the stresses above soil's layers**	**Stress in a soil mass**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
8-11	15	**Estimating the different types settlement under the effec stresses**	**Compressibilit y of Soil**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
12-14	15	**Determine the Shear Strength of Soil and its parameters**	**Shear Strength of Soil**	**Class& laboratory**	**Laboratory reports, daily monthly exams**
15	15	**Review of the above study**			

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	✓ Soil Mechanics R.F.Graig ✓ Soil Mechanics T.W.Lamb.R.V.Whitman ✓ Soil Mechanics Basic Concepts and Engineering Application. A.Aysen
Main references (sources)	✓ Advanced Soil Mechanics, Das ✓ Soil Mechanics Fundamentals
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Google schooler; YouTube

UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
2017
كليـــة الهندســـــة

Course Description Form

1. Course Name:
Theory of Structure I
2. Course Code:
WCV-31-04
3. Semester / Year:
1st Semester / 3rd Stage
4. Description Preparation Date:
23/9/2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
Theoretical 60 hrs. Credits: 4
7. Course administrator's name (mention all, if more than one name)
Name: Qassim Ali Husain PhD Email: Qassim.ali@uowa.edu.iq
8. Course Objectives

Course Objectives	• Providing students with a general knowledge skill about analyzing statically determinate and indeterminate structures • Teaching the student, the skill of analyzing statically determinate structures (trusses, beams, and frame structures) and drawing the shear forces and bending moment diagrams for beams and frames. • Teaching the student, how to draw the influence line by different methods and recognizing him the purpose of using the influence line. • Teaching him to analyze statically indeterminate structures using approximate methods.

9. Teaching and Learning Strategies

Strategy	Explaining topics and directing continuous questions to students to continue their participation, using electronic means to clarify various topics, conducting surprise and monthly written tests, and giving homework for each topic that is explained.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Introduction	Introduction	Attendance	Discussion
2	4	Types of Structures and Loads	Identify the types of structures and loads	Attendance	Exam
4-3	8	Teaching the criteria of stability and determinacy of structures	Criteria of stability and determinacy of structures	Attendance	Exam
7-5	12	Finding reactions and drawing shear force and bending moments diagrams	Analysis of determinate structures	Attendance	Exam
11-8	16	Teaching the influence lines for statically determinate structures by different methods	Influence Lines for Statically Determinate Structures	Attendance	Exam
15-12	16	Teaching Approximate Analysis of Statically Indeterminate Structures by different methods	Approximate Analysis of Statically Indeterminate Structures	Attendance	Exam

11. Course Evaluation

Quizzes: 5%	Homework: 5%	Class activity: 5%	1st Exam: 12.5%	2nd Exam: 12.5%	Final Exam: 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Structural Analysis by R. C. Hibbeler, Tenth edition
Main references (sources)	
Recommended books and references (scientific journals, reports…)	• Elementary theory of structures by Yuan-Yu Hsieh, second edition. Structural Analysis by Jack C. McCormac.
Electronic References, Websites	• https://www.youtube.com/watch?v=MJL1QPNtwGQ

Course Description Form

1. Course Name:
Theory of Structure II
2. Course Code:
WCV-32-04
3. Semester / Year:
2st Semester / 3rd Stage
4. Description Preparation Date:
23/١٠/202٣
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
4 hrs. 3 Unite.
7. Course administrator's name (mention all, if more than one name)
Name: Qassim Ali Husain PhD Email: Qassim.ali@uowa.edu.iq
8. Course Objectives

Course Objectives	• Providing students with a general knowledge skill about analyzing statically determinate and indeterminate structures • Teaching the student, the skill of analyzing statically determinate structures (trusses, beams, and frame structures) and drawing the shear forces and bending moment diagrams for beams and frames. • Teaching the student, how to draw the influence line by different methods and recognizing him the purpose of using the influence line. • Teaching him to analyze statically indeterminate structures using approximate methods.

9. Teaching and Learning Strategies

Strategy	Explaining topics and directing continuous questions to students to continue their participation, using electronic means to clarify various topics, conducting surprise and monthly written tests, and giving homework for each topic that is explained.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٤	Introduction	Introduction	Attendance	Discussion
٢	٤	Types of Structures and Loads	Identify the types of structures and loads	Attendance	Exam
٤-٣	8	Teaching the criteria of stability and determinacy of structures	Criteria of stability and determinacy of structures	Attendance	Exam
٧-٥	١٢	Finding reactions and drawing shear force and bending moments diagrams	Analysis of determinate structures	Attendance	Exam
١١-٨	16	Teaching the influence lines for statically determinate structures by different methods	Influence Lines for Statically Determinate Structures	Attendance	Exam
١٥-١٢	16	Teaching Approximate Analysis of Statically Indeterminate Structures by different methods	Approximate Analysis of Statically Indeterminate Structures	Attendance	Exam

11. Course Evaluation

Quizzes: 5%	Homework: 5%	Class activity: 5%	1st Exam: 12.5%	2nd Exam: 12.5%	Final Exam: 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Structural Analysis by R. C. Hibbeler, Tenth edition
Main references (sources)	
Recommended books and references (scientific journals, reports…)	• Elementary theory of structures by Yuan-Yu Hsieh, second edition. Structural Analysis by Jack C. McCormac.
Electronic References, Websites	• https://www.youtube.com/watch?v=MJL1QPNtwGQ

Course Description Form

1. Course Name:	
Traffic Engineering I	
2. Course Code:	
WCV-31-03	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
23 / 9 / 2024	
5. Available Attendance Forms:	
Students that are interested in learning	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours per week / number of units (3 units)	
7. Course administrator's name (mention all, if more than one name)	
MSc. Ghazi Jalal Kashesh Ghazi.alsady@uowa.edu.iq	
8. Course Objectives	
Course Objectives	This course discusses the fundamental concepts of traffic engineering by introduce students to cover the technical details of traffic characteristics, elements of roads and highways, and analysis and design the highway section according to vehicle operation.
9. Teaching and Learning Strategies	
Strategy	1. Providing a comprehensive introduction to each study topic and connecting the current topic to previous ones. 2. Delivering theoretical lectures. 3. Presenting short scientific films. 4. Providing and explaining sufficient examples. 5. Using brainstorming to convey the material.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	6	1. Demonstrate understanding of the need for developing highway engineering. 2. Outline the behaviour of drivers and vehicle characteristics on roads and highways. 3. Outline the principal means of speed, sight distances on roads and highways. 4. Roadways and their geometric characteristics. 5. Outline the principal means of Traffic stream characteristics (relations of speed-flow-density). 6. Illustrate the ethics of traffic design. 7. Demonstrated the responsibility of traffic operators.	**Introduction to traffic engineering** • General definitions • Objectives of traffic engineering • Responsibility, ethics, and liability in traffic engineering • Transportation systems and their function • Concepts of mobility and accessibility • Transportation modes • Elements of traffic engineering • Modern problems for the traffic engineer	Theoretical	1. Participation within the classroom. 2. Short written tests. 3. Assigning homework at the end of each topic. 4. Presenting posters about some taffic problems and their solutions. 5. Attendance. 6. Monthly written exams. 7. Final semester exam.
3+4+5	9		**Road user and vehicle characteristics** • Overview of traffic stream components • Dealing with diversity • Road users ▪ Visual characteristics of drivers ▪ Perception-reaction time ▪ Reaction distance ▪ Pedestrian characteristics • Vehicles ▪ Concept of the design vehicle ▪ Turning characteristics of vehicles ▪ Low-speed turns ▪ High-speed turns ▪ Braking characteristics ▪ Acceleration characteristics ▪ Decision sight distance ▪ Passing sight distance ▪ Intersection sight distance	Theoretical	
6+7+8+9	12		**Roadways and their geometric characteristics** • Highway functions and classification ▪ Highway classification ▪ Preserving the function of a facility • Highway design elements • Horizontal alignment ▪ Quantifying the severity of horizontal curves: radius and degree of curvature ▪ Review of trigonometric functions ▪ Critical characteristics of horizontal curves ▪ Superelevation of horizontal curves ▪ Spiral transition curves ▪ Sight distance on horizontal curves	Theoretical	

			▪ Compound horizontal curves: ▪ Reverse horizontal curve • Vertical alignment of highways ▪ Grades ▪ Geometric characteristics of vertical curves ▪ Sight distance on vertical curves ▪ Other minimum controls on length of vertical curves • Cross-section elements of highways ▪ Travel lanes and pavement ▪ Shoulders ▪ Side-slopes for cuts and embankments ▪ Guardrail		
10+11	6		**Traffic stream characteristics** • Types of facilities • Traffic stream parameters ▪ Volume and rate of flow ▪ Speed and travel time ▪ Density and occupancy ▪ Spacing and headway: microscopic parameters • Relationships among flow rate, speed, and density	Theoretical	
12+13+ 14+15	12		**Volume, speed, travel time and delay studies and characteristics** • Volume ▪ Critical volume parameters ▪ Volume, demand, and capacity ▪ Volume characteristics ▪ Intersection volume studies ▪ Types of volume counts ▪ Traffic volume data presentation • Spot speed studies • Locations for spot speed studies ▪ Time of day and duration of spot speed studies ▪ Sample size for spot speed studies ▪ Methods for conducting spot speed studies ▪ Presentation and analysis of spot speed data • Travel time and delay studies ▪ Methods for conducting travel time and delay studies • Its advanced technologies	Theoretical	

11. Course Evaluation

1. **Participation within the classroom 5%.**
2. **Short written tests 5%.**
3. **Assigning homework at the end of each topic 5%.**
4. **Attendance 5%.**
5. **Monthly written exams 20%.**
6. **Final semester exam 60%.**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• R. P. Roess, E. S. Prassas, and W. R. McShane " Traffic Engineering", 4th edition • N.J. Garber & L.A. Houel "traffic & Highway engineering" 4th edition • Traffic Engineering Handbook, 6th edition
Main references (sources)	• Uniform Vehicle Code and Model Traffic Ordinance • Manual on Uniform Traffic Control Devices, 2003(new edition anticipated in 2009-2010) • Highway Capacity Manual, 4th edition (5th edition anticipated in 2010) • A Policy on Geometric Design of Highways and Streets (The AASHTO Green Book), 7th edition • Traffic Signal Timing Manual, 1st edition • Transportation Planning Handbook, 3rd edition • Trip Generation, 8th edition • Parking Generation, 3rd edition
Recommended books and references (scientific journals, reports…)	Ministry of housing and construction " Highway design Manual'' 2003
Electronic References, Websites	-------

Course Description Form

1. Course Name:
Traffic Engineering II
2. Course Code:
WCV-32-03
3. Semester / Year:
2 Semester
4. Description Preparation Date:
٢٣ / 10 / 2024
5. Available Attendance Forms:
Students that are interested in learning
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours per week / number of units (٣ units)
7. Course administrator's name (mention all, if more than one name)
MSc. Ghazi Jalal Kashesh Ghazi.alsady@uowa.edu.iq
8. Course Objectives

Course Objectives	This course discusses the fundamental concepts of traffic engineering by introduce students to cover the technical details of traffic characteristics, elements of roads and highways, and analysis and design the highway section according to vehicle operation.
9. Teaching and Learning Strategies	
Strategy	1. Providing a comprehensive introduction to each study topic and connecting the current topic to previous ones. 2. Delivering theoretical lectures. 3. Presenting short scientific films. 4. Providing and explaining sufficient examples. ٥. Using brainstorming to convey the material.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	6	1. Demonstrate understanding of the need for developing highway engineering. 2. Outline the behaviour of drivers and vehicle characteristics on roads and highways. 3. Outline the principal means of speed, sight distances on roads and highways. 4. Roadways and their geometric characteristics. 5. Outline the principal means of Traffic stream characteristics (relations of speed-flow-density). 6. Illustrate the ethics of traffic design. 7. Demonstrated the responsibility of traffic operators.	**Introduction to traffic engineering** • General definitions • Objectives of traffic engineering • Responsibility, ethics, and liability in traffic engineering • Transportation systems and their function • Concepts of mobility and accessibility • Transportation modes • Elements of traffic engineering • Modern problems for the traffic engineer	Theoretical	1. Participation within the classroom. 2. Short written tests. 3. Assigning homework at the end of each topic. 4. Presenting posters about some taffic problems and their solutions. 5. Attendance. 6. Monthly written exams. 7. Final semester exam.
3+4+5	9		**Road user and vehicle characteristics** • Overview of traffic stream components • Dealing with diversity • Road users ▪ Visual characteristics of drivers ▪ Perception-reaction time ▪ Reaction distance ▪ Pedestrian characteristics • Vehicles ▪ Concept of the design vehicle ▪ Turning characteristics of vehicles ▪ Low-speed turns ▪ High-speed turns ▪ Braking characteristics ▪ Acceleration characteristics ▪ Decision sight distance ▪ Passing sight distance ▪ Intersection sight distance	Theoretical	
6+7+8+9	١٢		**Roadways and their geometric characteristics** • Highway functions and classification ▪ Highway classification ▪ Preserving the function of a facility • Highway design elements • Horizontal alignment ▪ Quantifying the severity of horizontal curves: radius and degree of curvature ▪ Review of trigonometric functions ▪ Critical characteristics of horizontal curves ▪ Superelevation of horizontal curves ▪ Spiral transition curves ▪ Sight distance on horizontal curves	Theoretical	

			▪ Compound horizontal curves: ▪ Reverse horizontal curve • Vertical alignment of highways ▪ Grades ▪ Geometric characteristics of vertical curves ▪ Sight distance on vertical curves ▪ Other minimum controls on length of vertical curves • Cross-section elements of highways ▪ Travel lanes and pavement ▪ Shoulders ▪ Side-slopes for cuts and embankments ▪ Guardrail		
10+11	6		**Traffic stream characteristics** • Types of facilities • Traffic stream parameters ▪ Volume and rate of flow ▪ Speed and travel time ▪ Density and occupancy ▪ Spacing and headway: microscopic parameters • Relationships among flow rate, speed, and density	Theoretical	
12+13+ 14+15	12		**Volume, speed, travel time and delay studies and characteristics** • Volume ▪ Critical volume parameters ▪ Volume, demand, and capacity ▪ Volume characteristics ▪ Intersection volume studies ▪ Types of volume counts ▪ Traffic volume data presentation • Spot speed studies • Locations for spot speed studies ▪ Time of day and duration of spot speed studies ▪ Sample size for spot speed studies ▪ Methods for conducting spot speed studies ▪ Presentation and analysis of spot speed data • Travel time and delay studies ▪ Methods for conducting travel time and delay studies • Its advanced technologies	Theoretical	

11. Course Evaluation

1. **Participation within the classroom 5%.**
2. **Short written tests 5%.**
3. **Assigning homework at the end of each topic 5%.**
4. **Attendance 5%.**
5. **Monthly written exams 20%.**
6. **Final semester exam 60%.**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• R. P. Roess, E. S. Prassas, and W. R. McShane " Traffic Engineering", 4th edition • N.J. Garber & L.A. Houel "traffic & Highway engineering" 4th edition • Traffic Engineering Handbook, 6th edition
Main references (sources)	• Uniform Vehicle Code and Model Traffic Ordinance • Manual on Uniform Traffic Control Devices, 2003(new edition anticipated in 2009-2010) • Highway Capacity Manual, 4th edition (5th edition anticipated in 2010) • A Policy on Geometric Design of Highways and Streets (The AASHTO Green Book), ٧th edition • Traffic Signal Timing Manual, 1st edition • Transportation Planning Handbook, 3rd edition • Trip Generation, 8th edition • Parking Generation, 3rd edition
Recommended books and references (scientific journals, reports…)	Ministry of housing and construction " Highway design Manual'' 2003
Electronic References, Websites	-------