Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study	
Analysis of determinate Structures I	
2. Course Code	
CIV303	
3. Semester/Year	
Autumn 2024	
4. Date of preparation of this description	
Autumn 2024	
5. Available Attendance Forms	
Attendance	
6. Number of credit hours (total) / number of units (total)	
3 hours theory / 3 units	
7. Name of the course administrator (if more than one name) and scientific title	
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	Defining the methods used to find stresses in determinate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: The main strategy that will be Define all types of Loadings, Stability and determinacy of structures , defining the methods

	used to find Elastic deformation generated in all types of Loadings under the influence of loads, as well as defining the methods used to find stresses in Determinate Structures , in addition to the methods used to find stresses in Determinate Structures that are subjected to moving loads

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	3	Understanding, application, and analysis	Stability and determinacy of structures	Lecture and discussion	Oral questions and written tests
3	3	Understanding, application, and analysis	Analysis of statically Statically determinate Beams	Lecture and discussion	Oral questions and written tests
4	3	Understanding, application, and analysis	Analysis of statically Statically determinate trusses	Lecture and discussion	Oral questions and written tests
5	3	Understanding, application, and analysis	Analysis of statically Statically determinate rigid frames and composite structures	Lecture and discussion	Oral questions and written tests
6	3	Understanding, application, and analysis	Elastic deformation of structures, conjugate-beam method	Lecture and discussion	Oral questions and written tests
7	3	Understanding, application, and analysis	Method of virtual work (unite-load method) (Beams)	Lecture and discussion	Oral questions and written tests
9 - 8	6	Understanding, application, and analysis	Method of virtual work (unite-load method) (Frames)	Lecture and discussion	Oral questions and written tests
11 - 10	6	Understanding, application, and analysis	Method of virtual work (unite-load method) (Trusses)	Lecture and discussion	Oral questions and written tests

12	3	Understanding, application, and analysis	Castigliano's first theorem (Beams)	Lecture and discussion	Oral questions and written tests
13	3	Understanding, application, and analysis	Castigliano's first theorem (Frames)	Lecture and discussion	Oral questions and written tests
14	3	Understanding, application, and analysis	Castigliano's first theorem (Trusses)	Lecture and discussion	Oral questions and written tests
15	3	Understanding, application, and analysis	Influence line for statically determinate structures	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=zkdGHcilATU&list=PLtHgTYGmlqSMelWXMuPbflyt8Gri6tkEt	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study
Analysis of Indeterminate Structures II
2. Course Code
CIV304
3. Semester/Year
Spring 2024
4. Date of preparation of this description
Spring 2024
5. Available Attendance Forms
Attendance
6. Number of credit hours (total) / number of units (total)
2 hours theory / 2 units
7. Name of the course administrator (if more than one name) and scientific title
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq
8. Course Objectives

Course Objectives	Teaching students how to analysis of Indeterminate Structures (II): defining the methods used to find stresses in Indeterminate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads.
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: • Analysis for statically indeterminate structures. • Analysis of statically indeterminate beam, trusses, rigid frames, and

	composite structures by the method of consistent deformations. • Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of least work. • Analysis of statically indeterminate beams and rigid frames with and without joint translation by the slope-deflection method. • Analysis of statically indeterminate rigid frames without joint translation by moment distribution. • Influence line for statically indeterminate structure.

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	2	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
3-4	**4**	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
5-6	4	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
7	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of least work	Lecture and discussion	Oral questions and written tests
8-9	4	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of least work	Lecture and discussion	Oral questions and written tests
10-11	**4**	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of least work	Lecture and discussion	Oral questions and written tests
12 - 13	**4**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by the slope-deflection method	Lecture and discussion	Oral questions and written tests
14	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by moment distribution	Lecture and discussion	Oral questions and written tests

15	2	Understanding, application, and analysis	Influence line for statically indeterminate structure	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=xcE7JUQqa3g&list=PLtHgTYGmlqSNuiZBooHyltQ_WzVxaYHlj	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

أ.د. يحيى عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University: Connector **College :**Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study	
Transportation Engineering	
2. Course Code	
CIV309	
3. Semester/Year	
Third / 2025-2024	
4. Date of preparation of this description	
2025	
5. Available Attendance Forms	
immanence	
6. Number of credit hours (total) / number of units (total)	
3 Theoretical	
7. Name of the course administrator (if more than one name) and scientific title	
Name: Asst.Prof.Dr. Mohammad Ahmed Humoody **Email: mohammad66ah@uomosul.edu.iq**	
8. Course Objectives	
● **.Formation of engineering skills that ensure design, construction, operations, maintenance** ● **Optimization of transport systems.All (roads and airports ,,,)** ● **Focusing mainly on operating systems more than construction activities**	Course Objectives
9. Teaching and learning strategies	
Lecture, discussion, written tests, practical tests. Posts, Assignments, Software	Strategy

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**3**	Memorization and understanding	Introduction and background	Lecture and discussion	Oral questions and written tests
2	3	Understanding and analysis	Road user: (a) Driver characteristics (b) Pedestrian	Lecture and discussion	Oral questions and written tests
3	**3**	Conservation, understanding and application	Vehicle : Static characteristics and Operational characteristics	Lecture and discussion	Oral questions and written tests
4	3	Understanding, application and design	Road characteristics	Lecture and discussion	Oral questions and written tests
5	**3**	Understanding, application and design	Traffic flow parameters	Lecture and discussion	Oral questions and written tests
6	3	Understanding, application and design	Analysis of speed-flow-density relationships	Lecture and discussion	Oral questions and written tests
7	**3**	Understanding and design	Traffic Flow Models	Lecture and discussion	Oral questions and written tests
9 - 8	**6**	Understanding and application	Spot speed studies : Definitions, Applications & Methods	Lecture and discussion	Oral questions and written tests
11 - 10	**6**	Understanding and application	Volume studies : Definitions, Applications & Methods	Lecture and discussion	Oral questions and written tests
12	3	Understanding and analysis	Travel time and delay studies: Definitions, Applications & Methods	Lecture and discussion	Oral questions and written tests
13	**3**	Conservation, understanding and application	Parking studies : Definitions, Applications and classification	Lecture and discussion	Oral questions and written tests
14	3	Understanding, application and design	Accident studies : Definitions, Applications and classification	Lecture and discussion	Oral questions and written tests
15	**3**	Understanding, application and design	Aviation Study	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
• Nicholas J. Garber and Lester A. Hoel. "Traffic and Highway Engineering". RPK Editorial Services, Inc. 5th edition, 2020.	Required textbooks (methodology, if any)
1. Highway Capacity Manual 2022 , TRB 209 (HCM7)	Key references (sources)
1. ASHTO. A Policy On Geometric Design Of Highways And Streets . American Association Of State Highway And Transportation Officials, Washington, D.C., 2010. 2. American Society For Testing And Materials (ASTM), (2003). Standard Specification, Section 4, Vol. 04-03, West Conshohocken, PA.. 3. The Asphalt Institute, "Laboratory Mixing And Compaction Temperatures" Executive Offices And Research Center, Research Park Drive, P.O.Box. 14052, Lexington, KY 40512-4052, USA. Asphalt Institute Technical Bulletin.	Recommended books and references (scientific journals, reports...)
https://www.nationalacademies.org/trb/transportation-research-board	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder:Asst.Prof.Dr. Mohammad Ahmed Humoody

Name and signature of the head of the department or branch

أ.د. مهند عبد الجليل محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Course Description

1. Course Name:
Applied Numerical Analysis
2. Course Code:
CE309
3. Semester / Year:
2025 -2024-Spring semester
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
4/3
7. Course administrator's name (mention all, if more than one name)
Name: assist. Prof. Dr. Salwa Mubarak Abdullah. Email: salwa_hano@uomosul.edu.iq Lecturer Dr. Nadiya Sadeek Ismaeel Email : Nadiya.alsaffar@uomosul.edu.iq
8. Course Objectives

Course Objectives	To make the students familiar with the use of numerical methods to solve equations, including iterative methods, how to find the completion in different ways, as well as numerical integration and numerical derivative, and the use of matrices to solve the system of equations in different ways, as well as using the numerical solution to solve first and second degree differential equations in numerical ways.

9. Teaching and Learning Strategies	
Strategy	Lectures , Homework and teaching videos

10. Course Structure

Details are shown in the attachment below

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	1	Numerical Methods in General, Introduction.	Attendance	
2, 3	4	1	Solution of Equations by Iteration, fixed point iteration method, Newton Raphson method and Secant method.	Attendance	

Required textbooks (curricular books, if any)	Advanced Engineering Mathematics by Erwin Kreyszig
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Kiusalaas, " Numerical Methods in Engineering with MATLAB", Campridge University press, 2005

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Course Description Form

1. Course Name: Hydraulic Structures
2. Course Code: CIV3161
3. Semester / Year: Second semester – 2025-2024
4. Description Preparation Date: 2025-2024
5. Available Attendance Forms: attendance in class
6. Number of Credit Hours (Total) / Number of Units (Total): 2 hr. / 2 unit
7. Course administrator's name (mention all, if more than one name)
Assistant professor Dr. Ayman Talib Hameed / ayman.th@uomosul.edu.iq Ahmed yhya

8. Course Objectives	
Course Objectives	This course aims to provide civil engineers with basic information about the types of hydraulic structures, their importance, and the various methods used to calculate the pressures generated on the structure and the uplift pressure. It also to provide students with information on the design of some small and large hydraulic structures, with explaining some of the problems that the structure is exposed and how to solve the problems.
9. Teaching and Learning Strategies	
Strategy	The strategy of this course is to encourage student for participation in presentations and exercises, in same times honing and expanding their thinking and skills. This will be achieved through lectures, scholarly resources, interactive tutorials, and by considering the type of simple experiments that include some sampling activities that interest students.

10. Course Structure

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

Course Evaluation and Grade Breakdown:

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation; daily, oral, monthly and written exams, reports, etc.

Percentage%	No.	Tasks
4	1	Attendance and class participation
3	6	Homework
12	2	Daily exams
21	1	Midterm exam
60	1	Final exam
100	**total**	

Learning and Teaching Resources:

1- Varshneny R.S. (1979). " Theory and design of irrigation structures (volume 1&volume2)", 4th, N.C.Jain.

2- Arora K. R. (2006), "Irrigation, Water Power and Water Recourses Engineering ", 4th Reprint Edition, A. K. Jain, For standard Publishers distributors, 1705-B. Nai Sarak. Delhi-110006.

3- Santosh Kumear (1999), "Irrigation Engineering and Hydraulic Structures", 14th Reviers edition in S.I. Units, Hanna Publishers,2-B. Nathmarket. Naisarak, Delhi-110006.

4- Irrigation, Water Power and Water Recourses Engineering, Dr. K. R. Arora, 4th Reprint Edition 2006.

Appendix

Week	Hour	Topic
1	2	Introduction to hydraulic structures, types of hydraulic structures
2	2	Hydraulic jump and it is advantages in the design of hydraulic structures, Draw the water surface profile of hydraulic jump and types of energy dissipators
3	2	Types and designs of stilling basins
4	2	Design of concrete floors using (Bligh's theory + Line's theory), design of concrete floors using (Khosali's theory)
5	2	
6	2	Types of culverts, hydraulic design of culverts
7	2	Spillways, design of Ogee spillway
8	2	Types and design of cross drainage works
9	2	
10	2	Types of syphon, Design of syphon
11	2	Protection works, Design of scour
12	2	Canal regulation works, Types of regulators, Design of regulators
13	2	
14	2	Dams, Design of concrete gravity dam
15	2	

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description

1. Course Name:
Applied Numerical Analysis
2. Course Code:
CE301
3. Semester / Year:
2025 -2024- Autumn semester
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
4/60
7. Course administrator's name (mention all, if more than one name)
Name: assist. Prof. Dr. Salwa Mubarak Abdullah. Email: salwa_hano@uomosul.edu.iq Lecturer Dr. Nadiya Sadeek Ismaeel Email : Nadiya.alsaffar@uomosul.edu.iq
8. Course Objectives

Course Objectives	To make the students familiar with the use of numerical methods to solve equations, including iterative methods, how to find the completion in different ways, as well as numerical integration and numerical derivative, and the use of matrices to solve the system of equations in different ways, as well as using the numerical solution to solve first and second degree differential equations in numerical ways.

9. Teaching and Learning Strategies	
Strategy	Lectures , Homework and teaching videos

10. Course Structure

Details are shown in the attachment below

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	1	Second order Linear Differential Equation	Attendance	
2	4	1	Solve Problems and applications Higher Order Linear Differential Equation	Attendance	

3	4	1	Solve Problems and applications	Attendance	
4	4	1	Eigen value and Eigen vectors	Attendance	
5	4	1	Solution of simultaneous DES using the operator D	Attendance	
6	4	1	Fourier Series and solve problems	Attendance	
7	4	1	Even and odd function half range expansions	Attendance	
8	4	1	Fourier series Applications	Attendance	
9	4	1	Fourier series Applications	Attendance	
10	4	1	Partial Differential Equation, Wave Equation	Attendance	
11	4	1	Partial Differential Equation, Heat Equation	Attendance	
12	4	1	Partial Differential Equation, Laplace Equation	Attendance	
13	4	1	Partial Differential Equation, Consolidation Equation	Attendance	
14	4	1	Solve Problems	Attendance	
15	4	1	Final exam	Attendance	

11. Course Evaluation

Final Exam (Theoretical+ laboratory)	1	60
Total		**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1. Erwin Kreyszig, "Advanced engineering mathematics"John wiley & sons, sixth edition, 1988 2. C. Ray Wylie, " Advanced engineering mathematics" McGRAW-Hill ,INC, Ltd., fourth edition, 1975.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name: Hydrology – Third Class
2. Course Code: CE3081
3. Semester / Year: First semester / 2025 - 2024
4. Description Preparation Date: 2024-2025
5. Available Attendance Forms: attendance in class
6. Number of Credit Hours (Total) / Number of Units (Total) : 2 hr. / 2 unit
7. Course administrator's name (mention all, if more than one name)
Assistant professor Dr. Ayman Talib Hameed / ayman.th@uomosul.edu.iq

8. Course Objectives	
Course Objectives	This course aims to describe hydrology and explain the information related to hydrology, explaining the various instruments and methods used to calculate water quantities in surface and subsurface flow. Then explains how this information can be used in various fields, such as design and operation of hydraulic structures, flood risk forecasting, and prediction of water quantities and levels during floods.
9. Teaching and Learning Strategies	
Strategy	1- The student learning important information about hydrology. 2- The student connects the topics of this subject with other subjects. 3- The student acquires knowledge of the practical aspects related to the subject. 4- The student acquires knowledge of using

	various sources for the subject's topics.

10. Course Structure

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

Course Evaluation and Grade Breakdown:

Percentage%	No.	Tasks
4	1	Attendance and class participation
3	6	Homework
12	2	Daily exams
21	1	Midterm exam
60	1	Final exam
100	**total**	

Learning and Teaching Resources:

1- Mohammead soliman et. al., (1992), "Engineering Hydrology" Arabic version, 1st edition, Home books for printer and Publisher –Mosul.

2- Arora K. R. (2006), "Irrigation, Water Power and Water Recourses Engineering ", 4th Reprint Edition, A. K. Jain, For standard Publishers distributors, 1705-B. Nai Sarak. Delhi-110006.

3- Santosh Kumear (1999), "Irrigation Engineering and Hydraulic Structures", 14th Reviers edition in S.I. Units, Hanna Publishers,2-B. Nathmarket. Naisarak, Delhi-110006.

4- Irrigation, Water Power and Water Recourses Engineering, Dr. K. R. Arora, 4th Reprint Edition 2006.

Appendix

Week	Hour	Topic
1	2	Introduction ,Hydrological cycle ,Practical application of Hydrology in engineering
2	2	Precipitation, type of precipitation ,Measurement of precipitation, Type of gauges
3	2	
4	2	Preparation of data, double mass curve method, Presentation of rainfall data, Estimating missing precipitation data, Determination of average precipitation over area
5	2	Stream flow, Water stage measurement in river ,Discharge measurement, Stage-Discharge relationship
6	2	
7	2	Extension of rating curve
8	2	Run Off
9	2	Hydrograph, Components of Hydrograph, Factors affecting on hydrograph, Base flow separation, Analysis of complex hydrograph
10	2	Unit hydrograph, Derivation of unit hydrograph, Conversion of unit hydrograph
11	2	Synthetic unit hydrograph
12	2	Flood routing, Reservoir routing
13	2	Channel routing
14	2	Ground water
15	2	Wells

أ.د. مجتن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name: Hydrology – Third Class
2. Course Code: CE3081
3. Semester / Year: First semester / 2025 - 2024
4. Description Preparation Date: 2024-2025
5. Available Attendance Forms: attendance in class
6. Number of Credit Hours (Total) / Number of Units (Total) : 2 hr. / 2 unit
7. Course administrator's name (mention all, if more than one name)
Assistant professor Dr. Ayman Talib Hameed / ayman.th@uomosul.edu.iq

8. Course Objectives	
Course Objectives	This course aims to describe hydrology and explain the information related to hydrology, explaining the various instruments and methods used to calculate water quantities in surface and subsurface flow. Then explains how this information can be used in various fields, such as design and operation of hydraulic structures, flood risk forecasting, and prediction of water quantities and levels during floods.
9. Teaching and Learning Strategies	
Strategy	1- The student learning important information about hydrology. 2- The student connects the topics of this subject with other subjects. 3- The student acquires knowledge of the practical aspects related to the subject. 4- The student acquires knowledge of using

	various sources for the subject's topics.

10. Course Structure

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

Course Evaluation and Grade Breakdown:

Percentage%	No.	Tasks
4	1	Attendance and class participation
3	6	Homework
12	2	Daily exams
21	1	Midterm exam
60	1	Final exam
100	**total**	

Learning and Teaching Resources:

1- Mohammead soliman et. al., (1992), "Engineering Hydrology" Arabic version, 1st edition, Home books for printer and Publisher –Mosul.

2- Arora K. R. (2006), "Irrigation, Water Power and Water Recourses Engineering ", 4th Reprint Edition, A. K. Jain, For standard Publishers distributors, 1705-B. Nai Sarak. Delhi-110006.

3- Santosh Kumear (1999), "Irrigation Engineering and Hydraulic Structures", 14th Reviers edition in S.I. Units, Hanna Publishers,2-B. Nathmarket. Naisarak, Delhi-110006.

4- Irrigation, Water Power and Water Recourses Engineering, Dr. K. R. Arora, 4th Reprint Edition 2006.

Appendix

Week	Hour	Topic
1	2	Introduction ,Hydrological cycle ,Practical application of Hydrology in engineering
2	2	Precipitation, type of precipitation ,Measurement of precipitation, Type of gauges
3	2	
4	2	Preparation of data, double mass curve method, Presentation of rainfall data, Estimating missing precipitation data, Determination of average precipitation over area
5	2	Stream flow, Water stage measurement in river ,Discharge measurement, Stage-Discharge relationship
6	2	
7	2	Extension of rating curve
8	2	Run Off
9	2	Hydrograph, Components of Hydrograph, Factors affecting on hydrograph, Base flow separation, Analysis of complex hydrograph
10	2	Unit hydrograph, Derivation of unit hydrograph, Conversion of unit hydrograph
11	2	Synthetic unit hydrograph
12	2	Flood routing, Reservoir routing
13	2	Channel routing
14	2	Ground water
15	2	Wells

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Course Description

1. Course Name:
Engineering Economics
2. Course Code:
ENGC 426
3. Semester / Year:
Second Semester / 2024/2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Theoretical Lecturers and Tutorials
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Rakan Farooq Qasim Email: **Ra_fa99@yahoo.com**
8. Course Objectives

Course Objectives	1- ntroducing the student to the importar of studying the engineering econom course. 2- Introducing the student to the importar of controlling costs Engineering projects. 3- Training students to conduct econon studies Comparisons and alternatives.

9. Teaching and Learning Strategies	
Strategy	Theoretical , Practical , Tutorial and Field lecturers

10. Course Structure

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

			sustainability		
2,3,4	2 for each week	Learning and solving problems	Costs, annual cost bonus and inflation	Learning and discussion	Discussion and homework
5,6	2 for each week	Learning and solving problems	Compound interest and economic relations	Learning and discussion	Discussion and homework
7,8	2 for each week	Learning and solving problems	Analysis of cash flow and time value of capital	Learning and discussion	Discussion and homework
9,10,11	2 for each week	Learning and solving problems	Comparisons and alternatives - present value - future value - internal rate of return	Learning and discussion	Home works
12,13	2 for each week	Learning and solving problems	Consumption - ways to find extinction	Learning and discussion	Home works
14,15	2 for each week	Learning	Economic feasibility of projects and sensitivity analysis	Learning and discussion	Discussion and homework

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)	Engineering economics
Main references (sources)	Project Evaluation
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. يونس عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description

1. Course Name:
Reinforced Concrete II
2. Course Code:
CE312
3. Semester / Year:
2025 -2024- الفصل الربيعي
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
4/2
7. Course administrator's name (mention all, if more than one name)
Name: assist. Prof. dr. rabi M. najem Emai :dr.rabi.najem@uomosul.edu.iq Name: assist. Prof. dr. halla J. Mohammed Emai :engrehal.1984@uomosul.edu.iq
8. Course Objectives

Course Objectives	Teaching the students how to make a safe and economical design for different structural members (slabs, beams, columns and foundations), through the restriction of the used designed code (ACI code 2008), and providing them with experience to handle different designing and construction problems in site.

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Details are shown in the attachment below

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

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)	Basics of Reinforced concrete. Saad Al Taan, 1991
Main references (sources)	Building Code Requirements for Structural Concrete (ACI 318M-19) and Commentary
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

MOSUL UNIVERSITY
FACULTY OF ENGINEERING
Department of CIVIL ENGINEERING,
Spring 2025
Course Information for CE312 Reinforced Concrete II

Course Name:	**Reinforced Concrete**					
Code	**Course type**	**Regular Semester**	**Theoretical**	**Practical**	**Credits**	**ECTS**
CE312			**4**	**0**	**2**	
Name of Lecturer(s)-Academic Title:	Ass. Prof. Rabi M. Najim. Ass. Prof. Dr. Halla Jasem Mohamad .					
Teaching Assistant(s):	N/A					
Course Language:	English					
Course Type:	Main					
Office Hours	11:30 to 1:30 Tuesday, 10:30-12:30 Thursday, 8:30 to 10:30 Thursday					
Contact:	Email: dr.rabi.najem@uomosul.edu.iq engrehal.1984@uomosul.edu.iq Tel: N/A					
Teacher's academic profile:	Dr. Rabi M. Najim: : B.Sc./ Civil Engineering 1998, M.Sc./ Structural Engineering 2001, Ph.D./ Structural Engineering 2013. Dr. Halla: B.Sc./ Civil Engineering 2006 (Iraq), M.Sc./ Structural Engineering 2010 (Iraq), Ph.D./ Structural Engineering 2021 (Iraq).					
Course Objectives:						
Course Description (Course overview):	-The course aims to acquaint students of the third stage (civil engineering) with the basics of reinforced concrete and the theories of analysis and design approved by the international ACI Code					

1	4	27-02-2025	Beam design for torsion
2	4	06-03-2025	Beam design for torsion
3	4	13-03-2025	Beam design for torsion
4	4	20-03-2025	Beam design for torsion
5	4	27-03-2025	Analysis and design of short columns
6	4	03-04-2025	Analysis and design of short columns
7	4	10-04-2025	Analysis and design of short columns
8	4	17-04-2025	Analysis and design of short columns
9	4	24-04-2025	Midterm Exam
10	4	01-05-2025	Analysis and design of long columns
11	4	08-05-2025	Analysis and design of long columns
12	4	15-05-2025	Analysis and design of long columns
13	4	22-05-2025	Development and lap splices.
14	4	29-05-2025	Development and lap splices.
15	4	05-06-2025	Development and lap splices.
16	4	12-06-2025	Final Exam

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. وعدنان عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Environmental Engineering I
2. Course Code:
CE306
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
In-person (inside the classroom)
6. Number of Credit Hours (Total) / Number of Units (Total)
4 hours / 3 units
7. Course administrator's name (mention all, if more than one name)
Name: Yousif Hassan Najim - Aya Thamer Ibrahem - Thura Azzam Abed Email: engyousif123@uomosul.edu.iq Aya.thamer@uomosul.edu.iq thura.azzam@uomosul.edu.iq

8. Course Objectives	
Course Objectives	On successful completion of this course students will be able to: 1-Identify the most common types of pollution in environment like (Air pollution, Noise pollution, Thermal pollution …Etc)(i). 2- Identify Physical and Chemical Properties of Water (i). 3- Identify Mass Balance Approach To Solve Environmental Problems (i) 4. Determine the Factors controlling the eutrophication (i). 5- Identify Solid Waste management- collection (i) 6- perform measurements and tests, and make conclusions based on engineering requirements (iii).

9. Teaching and Learning Strategies	
Strategy	The strategy is achieved through lectures, e-learning platforms, a homework and classroom assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2	4	I	Water pollution	Power point lecture	exam (Daily+term+ Final)

2	4	I	Biochemical Oxygen Demand	Power point lecture	exam (Daily+term+ Final)
2	4	I	Mass Balance Approach To Solve Environmental Problems	Power point lecture	exam (Daily+term+ Final)
1	2	I	The effect of demanding waste on river	Power point lecture	exam (Daily+term+ Final)
1	2	I	Rate of deoxygenation	Power point lecture	exam (Daily+term+ Final)
2	4	I	Air pollution	Power point lecture	exams (Daily+term+ Final)
2	4	I	Solid Waste management	Power point lecture	exam (Daily+term+ Final)
1	2	I	Thermal pollution	Power point lecture	exam (Daily+term+ Final)
1	2	I	Nose pollution	Power point lecture	exam (Daily+term+ Final)
1	2	I	**Examination**	Paper exam	Exam term
Lab. Syllabus					
2	2	III	Turbidity experiment	laboratory experiment	Report+(term +final) exams

4	2	III	Total Solid experiment	laboratory experiment	Report+(term +final) exams
2	2	III	PH experiment	laboratory experiment	Report+(term +final) exams
2	2	III	Electrical Conductivity experiment	laboratory experiment	Report+(term +final) exams
2	2	III	Hardness experiment	laboratory experiment	Report+(term final) exams
2	2	III	Jar Test experiment	laboratory experiment	Report+(term final) exams
1	2	III	**Examination**		term exam

11. Course Evaluation

Quizes	6
monthly exam	27
H.w	1
C.w	1
lab. Term Exam	7
lab. Reports	8
lab. Final Exam	10
Final Exam	40

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Environmental Engineering	Gerard Kiely
Introduction to Environmental Engineering	Mackenzie L. Gornwell
علم وتكنلوجيا البيئة	

د. طارق احمد محمود

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

1. Course Name:
Environmental Engineering II
2. Course Code:
CE314
3. Semester / Year:
Second semester (spring) / 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
In-person (inside the classroom)
6. Number of Credit Hours (Total) / Number of Units (Total)
4/3
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Salim Mahmood - Thura Azzam Abed- Aya Thamer Email: mohammedsalim@uomosul.edu.iq thura.azzam@uomosul.edu.iq Aya.thamer@uomosul.edu.iq
8. Course Objectives

Course Objectives	After successfully completing this course, students will be able to: 1- Identify environmental pollution in lakes (i). 2- Study the units of drinking water treatment plants and wastewater treatment plants (i). 3- Identify green buildings and their basic requirements (i). 4- Conduct practical tests, draw conclusions, and discuss them (iii).
9. Teaching and Learning Strategies	
Strategy	The strategy is achieved through lectures, e-learning platforms, and homewo and classroom assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	I	Variation in water consumption.	Power point lecture	exam (Daily+term+Final)

3	6	I	Water treatment- Characteristics - water treatment methods.	Power point lecture	exam (Daily+term+Final)
2	4	I	Water quality in lakes and reservoirs	Power point lecture	exam (Daily+term+Final)
2	4	I	Wastewater treatment- - pretreatment units	Power point lecture	exam (Daily+term+Final)
2	4	I	Wastewater treatment- - Secondary units	Power point lecture	exam (Daily+term+Final)
2	4	I	Wastewater treatment- - Tertiary units	Power point lecture	exams (Daily+term+Final)
2	4	I	Green bulding	Power point lecture	exam (Daily+term+Final)
1	2	I	**Examination**	Paper exam	Exam term
Lab. Syllabus					
4	8	III	Chloride experiment	laboratory experiment	Report+(term +final) exams
4	8	III	Alkalinity experiment	laboratory experiment	Report+(term +final) exams
4	8	III	Total number of bacteria in water	laboratory experiment	Report+(term +final) exams
2	4	III	BOD experiment	laboratory experiment	Report+(term +final) exams

1	2	III	**Examination**		term exam

11. Course Evaluation

Quizes	6
monthly exam	27
H.w	1
C.w	1
lab. Term Exam	7
lab. Reports	8
lab. Final Exam	10
Final Exam	40

12. Learning and Teaching Resources

Required textbooks (curricular books, any)	علم وتكنلوجيا البيئة- د. طارق احمد محمود
Main references (sources)	1-Environmental Engineering- Gerard Kiely 2-Introduction to Environmental Engineering - Mackenzie L. Gornwell
Recommended supporting books and references (scientific journals, reports...)	
Electronic references, websites	المبنى الأخضر المستدام- د. قاسم محمد عباس

أ.د. مؤيد عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study	
Analysis of determinate Structures I	
2. Course Code	
CIV303	
3. Semester/Year	
Autumn 2024	
4. Date of preparation of this description	
Autumn 2024	
5. Available Attendance Forms	
Attendance	
6. Number of credit hours (total) / number of units (total)	
3 hours theory / 3 units	
7. Name of the course administrator (if more than one name) and scientific title	
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	Defining the methods used to find stresses in determinate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: The main strategy that will be Define all types of Loadings, Stability and determinacy of structures , defining the methods

	used to find Elastic deformation generated in all types of Loadings under the influence of loads, as well as defining the methods used to find stresses in Determinate Structures , in addition to the methods used to find stresses in Determinate Structures that are subjected to moving loads

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	3	Understanding, application, and analysis	Stability and determinacy of structures	Lecture and discussion	Oral questions and written tests
3	3	Understanding, application, and analysis	Analysis of statically Statically determinate Beams	Lecture and discussion	Oral questions and written tests
4	3	Understanding, application, and analysis	Analysis of statically Statically determinate trusses	Lecture and discussion	Oral questions and written tests
5	3	Understanding, application, and analysis	Analysis of statically Statically determinate rigid frames and composite structures	Lecture and discussion	Oral questions and written tests
6	3	Understanding, application, and analysis	Elastic deformation of structures, conjugate-beam method	Lecture and discussion	Oral questions and written tests
7	3	Understanding, application, and analysis	Method of virtual work (unite-load method) (Beams)	Lecture and discussion	Oral questions and written tests
9 - 8	6	Understanding, application, and analysis	Method of virtual work (unite-load method) (Frames)	Lecture and discussion	Oral questions and written tests
11 - 10	6	Understanding, application, and analysis	Method of virtual work (unite-load method) (Trusses)	Lecture and discussion	Oral questions and written tests

12	3	Understanding, application, and analysis	Castigliano's first theorem (Beams)	Lecture and discussion	Oral questions and written tests
13	3	Understanding, application, and analysis	Castigliano's first theorem (Frames)	Lecture and discussion	Oral questions and written tests
14	3	Understanding, application, and analysis	Castigliano's first theorem (Trusses)	Lecture and discussion	Oral questions and written tests
15	3	Understanding, application, and analysis	Influence line for statically determinate structures	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=zkdGHcilATU&list=PLtHgTYGmlqSMelWXMuPbflyt8Gri6tkEt	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study
Analysis of Indeterminate Structures II
2. Course Code
CIV304
3. Semester/Year
Spring 2024
4. Date of preparation of this description
Spring 2024
5. Available Attendance Forms
Attendance
6. Number of credit hours (total) / number of units (total)
2 hours theory / 2 units
7. Name of the course administrator (if more than one name) and scientific title
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq
8. Course Objectives

Course Objectives	Teaching students how to analysis of Indeterminate Structures (II): defining the methods used to find stresses in Indeterminate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads.
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: • Analysis for statically indeterminate structures. • Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of consistent deformations.

	• Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of least work. • Analysis of statically indeterminate beams and rigid frames with and without joint translation by the slope-deflection method. • Analysis of statically indeterminate rigid frames without joint translation by moment distribution. • Influence line for statically indeterminate structure.

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	2	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
3-4	**4**	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
5-6	4	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
7	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of least work	Lecture and discussion	Oral questions and written tests
8-9	4	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of least work	Lecture and discussion	Oral questions and written tests
10-11	**4**	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of least work	Lecture and discussion	Oral questions and written tests
12 - 13	**4**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by the slope-deflection method	Lecture and discussion	Oral questions and written tests
14	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by moment distribution	Lecture and discussion	Oral questions and written tests
15	2	Understanding, application, and analysis	Influence line for statically indeterminate structure	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=xcE7JUQqa3g&list=PLtHgTYGmlqSNuiZBooHyltQ_WzVxaYHlj	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study
Highway Engineering 1
2. Course Code
CIV309
3. Semester/Year
Third /2024-2025
4. Date of preparation of this description
4/20/2025
5. Available Attendance Forms
immanence
6. Number of credit hours (total) / number of units (total)
2 theoretical + 1 applied + 2 practical
7. Name of the course administrator (if more than one name) and scientific title
Name: Asst.Prof.Dr. Mohammad Ahmed Humoody **Email: mohammad66ah@uomosul.edu.iq**
8. Course Objectives

● .**Formation of engineering skills that ensure design, construction, operations, maintenance** ● **Optimizing road and transport systems** ● **Mainly focused on the engineering design of roads from a technical point of view**	Course Objectives
9. Teaching and learning strategies	
Lecture, discussion, written tests, practical tests. Posts, Assignments, Software	Strategy
10. Course Structure	

The week	Hours	Evaluation method	Required Learning Outcomes	Unit or subject name	Learning method
1	3	Oral questions and written tests	Memoriza-tion and under-standing	HIGHWAYS as PART of the TRANSPORTATION SYSTEM Transportation Engineering, Transportation System , Traffic or (Transportation) Engineering, Highway Transportation Elements	Lecture and discussion
2	3	Oral questions and written tests	Under-standing and analysis	ROAD USER Driver Characteristics and Senses, Visual Critical Characteristics, Fields of Vision, Perception-Reaction Time, Pedestrian Characteristics	Lecture and discussion
3	3	Oral questions and written	Conservation , under-standing	VEHICLE (A) Static Characteristics,(B) Operational Characteristics(C) Environmental Characteristics, VEHICLE VARIABLE	Lecture and discussion
4	3	Oral	Under-	ROAD CHARACTERISTICS	Lecture and

		questions and written tests	standing, application and design	Highway Functional Classifications,HighwayClassifications , Sight Distance Type, Stopping Sight Distance,Passing Sight DistanceHighway Design Manual Classification	discussion
5	**3**	Oral questions and written tests	Under-standing, application and design	Highway Surveys and Location Office Study of Existing Information,Reconnaissance Survey ,Preliminary Location Survey,Final Location Survey,Location of Recreational and Scenic Routes,Location of Highways in Urban Areas Principles of Bridge Location, Survey Methods	Lecture and discussion
6	3	Oral questions and written tests	Under-standing, application and design	HIGHWAY EARTHWORK5 General Method of Procedure,Volume of Earthwork ,Haul and Overhaul,Computing Ordinates of the Mass Diagram,Interpretation of the Mass Diagram,	Lecture, discussion and class assignments
7	**3**	Oral questions and written tests	Under-standing and design	Geometric Design Principles of Highway Factors Influencing Highway Design,Volume and Flow Rate,Daily Volumes.,Hourly Volumes.DESIGN OF THE ALIGNMENTGeometric Design Elements, Vertical Alignment, Horizontal Alignment,Cross-section	Lecture and discussion
7 - 10	**3**	Oral questions and written tests	Under-standing and design and application	VERTICAL ALIGNMENT Types of Vertical Curves,Length of Crest Vertical Curves,Minimum Length of Sag Vertical Curves Based on SSD , Based on Comfort Based on Appearance , Drainage Based Length of Crest and Sag Vertical Curves Based on K,Sight Distance at Undercrossing,Turning point ,Combined Sag and Crest Vertical Curves,Grades,General for Vertical Alignment,	Lecture, discussion , classroom and homework
11 - 14	**3**	Oral questions and written tests	Under-standing and design and application	HORIZONTAL ALIGNMENT Vehicle Cornering and Superelevation,Simple Curves (dynamic & geometry),Formulas for Simple Curves. Field Location of a Simple Horizontal Curve,Transition Curves, Length of Spiral Curves. Length of Superelevation Runoff, Attainment of Superelevation. Curve Widening of Horizontal Curves, Curve Radii Based on Stopping Sight Distance, Cross-Section Elements,Width, Medians, Barriers.,Cross,	Lecture, discussion , classroom and homework
15	3	Oral Questions	Under-standing,	CHANNELIZATION	Lecture and discussion

11. Course Evaluation and Grade Divisions	
Distribution of the grade out of 100 according to the tasks assigned to the student, daily preparation, daily oral and written exams, as well as monthly, homework, class discussions... etc	
12. Learning and Teaching Resources	
• Nicholas J. Garber and Lester A. Hoel. "Traffic and Highway Engineering". RPK Editorial Services, Inc. 5th edition, 2020.	Required textbooks (methodology, if any)
AASHTO. A Policy On Geometric Design Of Highways And Streets . American Association Of State Highway And Transportation Officials, Washington, D.C., 2014.	Key references (sources)
1. American Society for Testing and Materials (ASTM), (2003). Standard Specification, Section 4, Vol. 04-03, West Conshohocken, PA.. 2. The Asphalt Institute, "Laboratory Mixing and Compaction Temperatures" Executive Offices And Research Center, Research Park Drive, P.O.Box. 14052, Lexington, KY 40512-4052, USA. Asphalt Institute Technical Bulletin.	Recommended books and references (scientific journals, reports...)
https://www.nationalacademies.org/trb/transportation-research-board	Electronic References, Websites
15%	Curriculum update rate or description

Name and signature of the course holder:Asst. Prof. Dr. Mohamed Ahmed Humoody

Name and signature of the head of the department or branch

أ.د. معتز عبد الجبار محمد عوض
رئيس قسم الهندسة المدنية

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study	
Highway Engineering 2	
2. Course Code	
CIV310	
3. Semester/Year	
Third /2024-2025	
4. Date of preparation of this description	
2025	
5. Available Attendance Forms	
immanence	
6. Number of credit hours (total) / number of units (total)	
2 theoretical + 1 applied + 2 practical	
7. Name of the course administrator (if more than one name) and scientific title	
Name: Asst.Prof.Dr. Mohammad Ahmed Humoody **Email: mohammad66ah@uomosul.edu.iq**	
8. Course Objectives	
● **.Formation of engineering skills that ensure design, construction, operations, maintenance** ● **Optimizing road and transport systems** ● **Mainly focused on the engineering design of roads from a technical point of view**	Course Objectives
9. Teaching and learning strategies	
Lecture, discussion, written tests, practical tests. Posts, Assignments, **Software**	Strategy
10. Course Structure	

The week	Hours	Evaluation method	Required Learning Outcomes	Unit or subject name	Learning method
1	**3**	Oral questions and tests	under-standing ,description	Pavement Types and Design Factors Historical Developments Pavement Types, Design Elements for Flexible versus Rigid	Lecture and discussion
2	3	Oral questions	Under-standing	Definition of Flexible Pavement, Advantages and Disadvantages of Flexible Pavement,	Lecture and discussion
3	**3**	Oral questions	Under-standing	Definition of Rigid Pavement: Advantages and Disadvantages of Rigid Pavement,	Lecture and discussion
4	3	Oral questions and tests	Under-standing, application	Stresses and Strains in flexible Pavements Stresses in a homogeneous mass, Layered Systems,Fundamental design concepts	Lecture and discussion
5	**3**	Oral questions and written tests	Under-standing, application and design	Pavement Performance Distresses in flexible pavements, Types of flexible pavements failure, Subgrade failure Type, Temperature failure Type Precipitation, Methods of measuring distress	Lecture and discussion
6	3	Oral questions and written tests	Under-standing, application and design	Pavement Design Procedures Material Characterization ,Characterizations of Subgrade,Subbase Courses ,Base Courses , Asphaltic Layers	Lecture, discussion and class assignments
7	**3**	Oral questions and written tests	Under-standing and design	Analysis of Traffic Loading for Pavement Design Wheel Load Influence on Pavements, Tire Contact Pressure on Pavement,Vehicle Speed, Axle Configuration, Repetition of Loads, Equivalent Single Axle Load Approach, Concepts of Reliability in Pavement Design, Drainage Design	Lecture and discussion
7 - 10	**3**	Oral questions and written tests	Under-standing and design and application	Design of Flexible Pavement (AASHTO Method) AASHTO DESIGN EQUATION FOR FLEXIBLE PAVEMENT ,Required Structural Number (SNR),Layer Coefficient (ai), Drainage Coefficient (mi), Equivalent Single Axle Load ($W18$), Reliability (%R), Standard Deviate (ZR) , Standard Deviation (SO), Resilient Modulus (MR), Change In Serviceability (ΔPSI)	Lecture, discussion , classroom and homework
11 - 12	**3**	Oral questions and written tests	Under-standing and design and application	Design of Flexible Pavement (Asphalt Institute Method) Asphalt Institute Method, AI Fatigue Cracking Model ,AI Rutting Failure Model, ASPHALT INSTITUTE PAVEMENT DESIGN METHODOLOGY, Determination of cumulative ESAL, Selection of subgrade resilient modulus, Selection of layer materials, Selection of bitumen grade, Thickness determination (procedure)	Lecture, discussion , classroom and homework
13	**3**	Oral questions tests	Under-standing , application	Pavement Construction & Maintenance Surface Course, Binder Course, Base Course , Subbase Course, Subgrade, Seal Coat, Tack Coat, Prime Coat	Lecture, discussion, homework
14	**3**	Oral questions tests	Under-standing and design application	Design of Rigid Pavements Design Considerations, Modulus of Subgrade Reaction, Drainage, Joint load transfer coefficient (J), Thickness Design of Rigid Pavements	Lecture, discussion , classroom , homework
15	3	Oral Questions	Under-standing, application	Joints in Concrete Pavements Expansion Joints,Contraction Joints, Hinge Joints, Construction Joints, Dowel Bars , Tie Bars	Lecture and discussion

11. Course Evaluation and Grade Divisions	
Distribution of the grade out of 100 according to the tasks assigned to the student, daily preparation, daily oral and written exams, as well as monthly, homework, class discussions... etc	
12. Learning and Teaching Resources	
• Nicholas J. Garber and Lester A. Hoel. "Traffic and Highway Engineering". RPK Editorial Services, Inc. 5th edition, 2020.	Required textbooks (methodology, if any)
AASHTO. A Policy On Geometric Design Of Highways And Streets . American Association Of State Highway And Transportation Officials, Washington, D.C., 2014.	Key references (sources)
1. American Society for Testing and Materials (ASTM), (2003). Standard Specification, Section 4, Vol. 04-03, West Conshohocken, PA.. 2. The Asphalt Institute, "Laboratory Mixing and Compaction Temperatures" Executive Offices And Research Center, Research Park Drive, P.O.Box. 14052, Lexington, KY 40512-4052, USA. Asphalt Institute Technical Bulletin.	Recommended books and references (scientific journals, reports...)
https://www.nationalacademies.org/trb/transportation-research-board	Electronic References, Websites
15%	Curriculum update rate or description

Name and signature of the course holder:Asst. Prof. Dr. Mohamed Ahmed Humoody

Name and signature of the head of the department or branch

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study
Theory of Structures I
2. Course Code
CE303
3. Semester/Year
Autumn 2024
4. Date of preparation of this description
Autumn 2024
5. Available Attendance Forms
Attendance
6. Number of credit hours (total) / number of units (total)
3 hours theory / 3 units
7. Name of the course administrator (if more than one name) and scientific title
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq
8. Course Objectives

Course Objectives	Defining the methods used to find stresses in determinate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: The main strategy that will be Define all types of Loadings, Stability and determinacy of structures , defining the methods

	used to find Elastic deformation generated in all types of Loadings under the influence of loads, as well as defining the methods used to find stresses in Determinate Structures , in addition to the methods used to find stresses in Determinate Structures that are subjected to moving loads

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	3	Understanding, application, and analysis	Stability and determinacy of structures	Lecture and discussion	Oral questions and written tests
3	3	Understanding, application, and analysis	Analysis of statically Statically determinate Beams	Lecture and discussion	Oral questions and written tests
4	3	Understanding, application, and analysis	Analysis of statically Statically determinate trusses	Lecture and discussion	Oral questions and written tests
5	3	Understanding, application, and analysis	Analysis of statically Statically determinate rigid frames and composite structures	Lecture and discussion	Oral questions and written tests
6	3	Understanding, application, and analysis	Elastic deformation of structures, conjugate-beam method	Lecture and discussion	Oral questions and written tests
7	3	Understanding, application, and analysis	Method of virtual work (unite-load method) (Beams)	Lecture and discussion	Oral questions and written tests
9 - 8	6	Understanding, application, and analysis	Method of virtual work (unite-load method) (Frames)	Lecture and discussion	Oral questions and written tests

13	3	Understanding, application, and analysis	Castigliano's first theorem (Frames)	Lecture and discussion	Oral questions and written tests
14	3	Understanding, application, and analysis	Castigliano's first theorem (Trusses)	Lecture and discussion	Oral questions and written tests
15	3	Understanding, application, and analysis	Influence line for statically determinate structures	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=zkdGHcilATU&list=PLtHgTYGmlqSMelWXMuPbflyt8Gri6tkEt	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University: Mosul **College :** Engineering **Department or Branch:** Civil

1. Course Name and Stage of Study
Theory of Structures II
2. Course Code
CE310
3. Semester/Year
Spring 2024
4. Date of preparation of this description
Spring 2024
5. Available Attendance Forms
Attendance
6. Number of credit hours (total) / number of units (total)
2 hours theory / 2 units
7. Name of the course administrator (if more than one name) and scientific title
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq
8. Course Objectives

Course Objectives	Teaching students how to analysis of Indeterminate Structures (II): defining the methods used to find stresses in Indeterminate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads.
9. Teaching and learning strategies	
Strategy	The main strategy that will be adopted: • Analysis for statically indeterminate structures. • Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of consistent deformations. • Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of least work. • Analysis of statically indeterminate beams and rigid frames with and

	without joint translation by the slope-deflection method. • Analysis of statically indeterminate rigid frames without joint translation by moment distribution. • Influence line for statically indeterminate structure.

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	Understanding, application, and analysis	Introduction and background	Lecture and discussion	Oral questions and written tests
2	2	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
3-4	**4**	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
5-6	4	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of consistent deformations	Lecture and discussion	Oral questions and written tests
7	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams by the method of least work	Lecture and discussion	Oral questions and written tests
8-9	4	Understanding, application, and analysis	Analysis of statically indeterminate trusses by the method of least work	Lecture and discussion	Oral questions and written tests
10-11	**4**	Understanding, application, and analysis	Analysis of statically indeterminate rigid frames by the method of least work	Lecture and discussion	Oral questions and written tests
12 - 13	**4**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by the slope-deflection method	Lecture and discussion	Oral questions and written tests
14	**2**	Understanding, application, and analysis	Analysis of statically indeterminate beams and rigid frames without joint translation by moment distribution	Lecture and discussion	Oral questions and written tests

11. Course Evaluation and Grade Divisions	
Distribution of the score out of 100 according to the tasks assigned to the student , daily preparation, daily, oral, monthly, written exams, reports... etc	
12. Learning and Teaching Resources	
1-Russell C. Hibbeler. " Structural Analysis " 8th ed.	Required textbooks (methodology, if any)
2-Yuan-Yu Hsieh, "Elementary Theory of Structures".	Key references (sources)
	Recommended books and references (scientific journals, reports...)
https://www.youtube.com/watch?v=xcE7JUQqa3g&list=PLtHgTYGmlqSNuiZBooHyItQ_WzVxaYHlj	Electronic References, Websites
10%	Curriculum update rate or description

Name and signature of the course holder: Asst.Prof.Dr. Oday Asal Salih

Name and signature of the head of the department or branch

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. يونس عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Fundamental of Soil Mechanics
2. Course Code:
CIV307
3. Semester / Year:
Fall Semester / 2025-2024
4. Description Preparation Date:
2025
5. Available Attendance Forms:
In-person (Classrooms for the theoretical part and laboratory for the practical part)
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours of theory, 2 hours of practical / 3 credits
7. Course administrator's name (mention all, if more than one name)
Name: Moataz A. M. Alobaydi Amina Ahmead Khaleel Email: dralobaydi@uomosul.edu.iq amina.alshumam@uomosul.edu.iq
8. Course Objectives 5

Course Objectives	The course aims to: Provide students with knowledge of the fundamentals of soil mechanics, its problems, and composition, as well as an understanding of its volumetric and weight relationships and their applications. Additionally, it covers the calculations of hydraulic properties and water movement within the soil. Furthermore, the curriculum includes methods for calculating internal pressures in the soil, the impact of groundwater levels, and the transfer and distribution of stresses within the soil. These aspects are essential for evaluating its bearing capacity and compressibility. Finally, the course explains soil compressibility and the calculations of total settlement in its various forms over time, as well as differential settlement, which is a critical factor in the design, safety, and structural integrity of buildings.
9. Teaching and Learning Strategies	
Strategy	Encouraging students to think critically, analyze, and draw conclusions in problem-solving and solving engineering problems. This is achieved through lectures, practical demonstrations, hands-on lessons, problem-solving exercises, and discussions in small groups. Additionally, students are trained to take responsibility.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3	First	Volumetric and weight relationships	Attendance	Exam
2	3	First and third	Physical and engineering properties of soil, soil plasticity, Atterberg limits (plastic limit, liquidity limit, plasticity index), clay activity, relative density, sensitivity, flow curve, flow index, shrinkage limit and index, compaction test.	Attendance	Exam and report
3	3	First and fifth	Grain gradation and soil classification (Unified Soil Classification System, AASHTO classification, MIT classification, and triangular classification).	Attendance	Exam and report
4	3	Third	Hydraulic properties	Attendance	Exam and report
5	3	First	Introduction to flow in porous media	Attendance	Exam and assignment
6	3	First	Capillary properties and surface tension	Attendance	Exam and assignment
7	3	First	Soil permeability	Attendance	Exam and assignment
8	3	First	Water seepage through soil (Laplace equation, flow network, drawing a flow network, flow lines, equipotential lines, calculating the amount of water seeped through a flow network in heterogeneous soils, seepage pressure, critical hydraulic gradient, calculating seepage pressure and uplift force)	Attendance	Exam
9	3	First	Seepage beneath and through earth structures, soil boiling phenomena, critical conditions in water structures, piping phenomenon, seepage through earth structures, and determining the free surface of flow in embankment dams, sand filter design for earth filters.	Attendance	Exam

10	3	Fifth	Stresses in soil mass (total and effective)	Attendance	Exam and report
11	3	First and third	Internal stresses in soil mass (total pressure, effective pressure, and neutral pressure in soil).	Attendance	Exam and assignment
12	3	First and third	Stresses due to external loads under different loading areas.	Attendance	Exam and assignment
13	3	First and third	Stresses due to a single or multiple concentrated loads, stresses from homogeneous linear loads.	Attendance	Exam and assignment
14	3	First and third	Stresses from regular strip loads.	Attendance	Exam
15				Attendance	

Course Evaluation and Grade Breakdown:	Here is the distribution of grades based on the student's assigned tasks: Daily exams and assignments for the theoretical part (5): 12 points Reports for the practical part and exams (6): 15 points Midterm exam (1): 23 points Final exam (1): 50 points

Learning and Teaching Resources:

Required Textbooks (Curriculum, if available):

1. **Primary References (Sources):**
   - Principles of Geotechnical Engineering ,(2004), Braja M. Das, 5th edition 2002, copyright by Wadsworth Group/United Stated.
2. **Supplementary References (Books, Journals, Reports, etc.):**
   - العشو، محمد عمر ، 1991" مبادئ ميكانيك التربة" ، كلية الهندسة ، جامعة الموصل.
3. **Recommended Additional Resources:**
   - Bowels J.E. (1978): Engineering properties of soils and their measure mends, second edition. McGraw-Hill books company.
4. **Electronic Resources:**
   - Whitlow, R. (1983): Basic soil mechanics, Construction Press, London and New York.
   - Annual Book of ASTM Standards, volume 04.08 : Soil and Rock (I) Published by ASTM in 2000

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description

1. Course Name:
Engineering management
2. Course Code:
ENGC 425
3. Semester / Year:
Second Semester / 2025-2024
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Theoretical Lecturers and Tutorials
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / 2 units
7. Course administrator's name (mention all, if more than one name)
Name: Rakan Farooq Qasim Email: **rakanalmola75@uomosul.edu.iq**
8. Course Objectives

Course Objectives	1- Introducing the student to the importance studying the engineering management course. 2- Introducing the student to the importance of ti control in engineering projects. 3- Training the student to create work progr tables 4- Training the student to make tables of quantit 5- Teach the student the importance of control quality in projects

9. Teaching and Learning Strategies

Strategy	Theoretical , Practical , Tutorial and Field lecturers

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Learning	General concepts about engineering management	Learning and discussion	Discussion
2,3,4	2 for each week	Learning and solving problems	Engineering contracts	Learning and discussion	Discussion and homework
5,6	2 for each week	Learning and solving problems	Bar chart and frequency distribution	Learning and discussion	Discussion and homework
7,8	2 for each week	Learning and solving problems	How to calculate the critical path by contract	Learning and discussion	Discussion and homework
9,10,11	2 for each week	Learning and solving problems	PERT path method	Learning and discussion	Home works
12,13	2 for each week	Learning and solving problems	Primavera	Learning and discussion	Home works
14,15	2 for each week	Learning	Tables of quantities and cost calculations	Learning and discussion	Discussion and homework

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)	

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description

1. Course Name:
Soil mechanics / Shear strength & its applications
2. Course Code:
CIV308
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Excel lists
6. Number of Credit Hours (Total) / Number of Units (Total)
3/3
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed N. Jaro Mohammed K. Faris Email: m.jaro@uomosul.edu.iq mohammed.kamil@uomosul.edu.iq
8. Course Objectives

Course Objectives The course aims to give students the knowledge to understand shear strength of the soil and calculation of parameters (cohesion and internal friction). Shear strength of the soil considered an important introduction to calculate the bearing capacity of different soils and behavior the soil under load	....

9. Teaching and Learning Strategies	
Strategy	The course is designed to finish the student with knowledge on the basic of shear strength of soil. It starts with introduction to shear strength of soil, Hydraulic properties of soil, lateral earth pressure subjected to earth structures such as retaining walls. This supposed to give the students the basics that will be useful in the course of foundation design in the forth class.

10. Course Structure

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

1	2	General introduction	General introduction	Lecture explanation with student participation	Quizzes & Mid. Exams
2	2	Soil shear strength	Soil shear strength	Lecture explanation with student participation	Quizzes & Mid. Exams
3	2	Shear strength of the soil and factors affecting, failure planes and principals stresses, normal and shear stress calculation	Shear strength of the soil and factors affecting, failure planes and principals stresses, normal and shear stress calculation	Lecture explanation with student participation	Quizzes & Mid. Exams
4	2	Representation the failure plane on Mohr's Circle, properties of Mohr's Circle, failure theory and Mohr Envelope, factors affecting on shear strength of soil, type of shear strength testing	Representation the failure plane on Mohr's Circle, properties of Mohr's Circle, failure theory and Mohr Envelope, factors affecting on shear strength of soil, type of shear strength testing	Lecture explanation with student participation	Quizzes & Mid. Exams
5	2	Shear strength of cohesive soil	Shear strength of cohesive soil	Lecture explanation with student participation	Quizzes & Mid. Exams
6	2	Shear strength of cohesionless soil	Shear strength of cohesionless soil	Lecture explanation with student participation	Quizzes & Mid. Exams

7	2	Failure theory and Mohr Envelope, lab shear strength testing	Failure theory and Mohr Envelope, lab shear strength testing	Lecture explanation with student participation	Quizzes & Mid. Exams
8	2	Retaining structures and lateral earth pressure	Retaining structures and lateral earth pressure	Lecture explanation with student participation	Quizzes & Mid. Exams
9	2	General introduction, types of lateral earth pressure, lateral earth pressure coefficients,	General introduction, types of lateral earth pressure, lateral earth pressure coefficients,	Lecture explanation with student participation	Quizzes & Mid. Exams
10	2	Lateral earth pressure at rest	Lateral earth pressure at rest	Lecture explanation with student participation	Quizzes & Mid. Exams
11	2	Active lateral earth pressure	Active lateral earth pressure	Lecture explanation with student participation	Quizzes & Mid. Exams
12	2	passive lateral earth pressure	passive lateral earth pressure	Lecture explanation with student participation	Quizzes & Mid. Exams
13	2	Factors affecting on the lateral earth pressure coefficients, lateral earth pressure distribution on the retaining structures,	Factors affecting on the lateral earth pressure coefficients, lateral earth pressure distribution on the retaining structures,	Lecture explanation with student participation	Quizzes & Mid. Exams

		lateral earth pressure calculation, lateral earth pressure calculation using Rankine's theory	lateral earth pressure calculation, lateral earth pressure calculation using Rankine's theory		
14	2	lateral earth pressure calculation using Coulomb's theory	lateral earth pressure calculation using Coulomb's theory	Lecture explanation with student participation	Quizzes & Mid. Exams
15	2	Application on lateral earth pressure	Application on lateral earth pressure	Lecture explanation with student participation	Quizzes & Mid. Exams

11. Course Evaluation
Mid Exam 20 Quizzes 10 preparations & H.W 5 Practical Part 15 Total 50% Final 50%

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." Elements of Soil Mechanics", (1988), G. N. Smith and Ion G. N. Smith, USA.

2." Problem Solving in Soil Mechanics", (2003), A. Aysen, Swets & Zeitlinger B.V

Dr. Mohammed N. Jaro

Dr. Mohammed K. Faris

Course Description Form

1. Course Name:
Quantity Survey
2. Course Code:
CIV 413
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / units (2)
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Ghanim Email:mohammed_g72@uomosul.edu.iq
8. Course Objectives

Course Objectives	Identify the types of estimation Train students to calculate quantities for construction work Train students to create quantity tables Explain how to create engineering arms
9. Teaching and Learning Strategies	
Strategy	Dividing construction work into sections, calculating the quantities of each section and the quantities of construction materials, teaching and training students to calculate the quantities of construction materials needed for various civil engineering works, and teaching students to create quantity tables and include the appropriate sections for construction work.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Interdiction of Quantity survey & Rough estimation	Quantity survey	Explanation with data show	Daily tests
3-4	4	Quantities of Building Materials (concrete block, Bricks, thermostone & Stone construction	Construction work	Explanation with data show	Daily tests

7-8	4	Reinforced concrete works estimate	Reinforced concrete	Explanation with data show	Daily tests
9-12	8	Earth work Estimation	Earth work	Explanation with data show	Daily tests
13-14	4	Technical specifications for construction works	Specification work	Explanation with data show	Daily tests
Course Evaluation and Grade Breakdown:			Quiz: Classwork Midterm Exam(s) Final Exam		10% 10% 20% 60%
Learning and Teaching Resources: "التخمين والمواصفات" مدحت فضيل "التخمين والمواصفات القياسية" م.د. لوى محمد عباس الشذر / جامعة الكوفة					

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. محسن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Prestressed Concrete and Bridge Design
2. Course Code:
CIV417
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr, Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the analysis and design prestressed reinforced concrete members, and RC bridges considering the international codes in design as ACI and AASHTO codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Analysis of prestress flexural members, • Design of prestress flexural members, and • Design of RC Bridges.
9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

Week	Hours	Required Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	2	Introduction:	Lecture	

2	**2**	2	Review the principles of precast reinforced concrete design	Lecture	
3	**2**	2	Precast construction advantages and disadvantages.	Lecture	
4	**2**	2	Design Examples	Lecture	
5	**2**	2	Brackets.	Lecture	
6	**2**	2	End beam.	Lecture	
7	**2**	2	Homework, Tutorial, Quiz	In-person	
8	**2**	2	The principles of prestressing, theory and method of load applying.	Lecture	
9	**2**	2	Material properties and types, prestressed and ordinary steel high strength concrete.	Lecture	
10	**2**	2	Types and methods of prestressing.	Lecture	
11	**2**	2	Tutorial, Quiz	In-person	
12	**2**	2	Type of loading used for bridges design.	Lecture	
13	**2**	2	Design of slab bridge and edge beam.	Lecture	
14	**2**	2	Deck girder bridges, span length, minimum depth, loading criteria.	Lecture	
15	**2**	2	Shear and flexural stress calculation at different sections along the span.	In-person	

Course Evaluation and Grade Breakdown:	Method	
	Attendance and participation	6
	Midterm Exam(s)	20
	Quiz	10
	Homework	4
	Final Exam	60

• **Main references (sources)**	2. Design of Prestressed Concrete, A.H Nilson, 2nd Edition.
• Recommended **supporting books and references (scientific journals, reports...)**	
• **Electronic references, websites**	
• **Curriculum or course description update rate**	15%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr, Muna M. A

Head of Department

أ.د. محسن عبد الجبار محمد عون

رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Reinforced Concrete Design
2. Course Code:
CIV402
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr, Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the fundamentals for reinforced concrete design floors, beams considering the international codes in design as ACI codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Design of one-way RC slabs and continuous beams, • Design of two-way RC slabs supported on edge beams, • Design of one-way ribbed slabs and voided slabs, and • Design of flat slabs.

9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

Week	Hours	Required Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	2	Introduction: Review the principles of reinforced concrete design	Lecture	

2	**2**	2	Design of One-way slab and continuous beams	Lecture	
3	**2**	2	- Design area of steel reinforcement and minimum area for shrinkage and temp. in slab and flexure for beams. - Approximate bent or cutoff points and maximum spacing for main and secondary reinforcement.	Lecture	
4	**2**	2	- Beam loads and critical moment and shear sections in beams. - Detailing for reinforcement continuous beams and slabs.	Lecture	
5	**2**	2	Detailing for reinforcement continuous beams and slabs. Homework; Tutorial; Quiz Two-way edge supported slabs - Minimum slab thickness.	Lecture	
6	**2**	2	- Direct design method and limitations. - Total static moment (panel moment). - Middle and edge strip width and moment distribution.	Lecture	
7	**2**	2	- Check for shear strength and flexure and calculation of steel reinforcement, checking minimum area and max spacing. - Design for beam supporting two-way slabs. - Design by moment coefficient method. - Homework - Quiz	Lecture	
8	**2**	2	Mid-term exam	In-person	
9	**2**	2	Flat slabs and flat plates - Minimum thickness of beamless slab according to ACI code. - Effective span length and minimum drop panel dimension. - The drop panel dimensions and requirements.	Lecture	
10	**2**	2	- Check for punching shear strength and diagonal shear. - Application of direct design method. - Design of flexural reinforcement at all critical moment section. Check the minimum and maximum spacing.	Lecture	
11	**2**	2	- Design by moment coefficient method. - Openings in flat slab construction. - Detailing of reinforcing steel considering minimum extension bars lengths. - Homework	Lecture	
12	**2**	2	One-way ribbed slabs - Code limitations and dimension. - Diagonal shear, solid part. - Voided slabs, equivalent rib width.	Lecture	

			- Quiz		
14	2	2	Course review		
15	2	2	Final exam	In-person	

Course Evaluation and Grade Breakdown:	Method	
	Attendance and participation	6
	Midterm Exam(s)	20
	Quiz	10
	Homework	4
	Final Exam	60

Learning and Teaching Resources:

Prescribed textbooks (syllabus books, if available)	Arthur H. Nilson, David Darwin, Charles W. Dol Design of concrete structures", McGraw-Hill Edu
• **Main references (sources)**	ACI Committee 318. (2014). Building code requi for structural concrete: (ACI 318-14); and comme (ACI 318R-14). Farmington Hills, MI: American Institute.
• Recommended **supporting books and references (scientific journals, reports...)**	
• **Electronic references, websites**	
• **Curriculum or course description update rate**	10%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr, Muna M. A

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Head of Department

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Special Topics in Structural Analysis and Design
2. Course Code:
CIV407
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr. Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq 3- Dr. Eman K. Ibrahem Lecturer E-mail : emankhalid33@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the analysis and design prestressed reinforced concrete members, and RC bridges considering the international codes in design as ACI and AASHTO codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Analysis of multistory frames, • Design of reinforced concrete stairs, and • Design of RC slabs using yield line method. .

9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

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

1	2	2	Introduction: Review the principles of precast reinforced concrete design	Lecture	
2	2	2	Design of reinforced concrete stairs Stair types and stair limitations.	Lecture	
3	2	2	Design stairs mainly reinforcement in transverse direction. Design stairs longitudinally reinforced.	Lecture	
4	2	2	Effective spans, loading and moment calculation. The calculations of the positive and negative moments.	Lecture	
5	2	2	Checking shear in stairs. Reinforcement and structural details of the stair	Lecture	
6	2	2	Homework, Tutorial, Quiz	In-person	
7	2	2	Yield line theory of slab analysis - Yielding slabs and development of plastic hinges. - Guide lines to established patterns of yield lines and axis of rotations slabs.	Lecture	
8	2	2	- Axes of rotations and failure shape. - Analysis by equilibrium method.	Lecture	
9	2	2	- Virtual work method. - Isotropically and orthotropically reinforced slabs. - Components of work methods. - Different types of loading.	Lecture	
10	2	2	- Circular and polygon slab panels. - Slabs with large opening.	Lecture	
11	2	2	- Optimization method for load calculation. -Circular and prismatic slabs. -Slabs with large openings.	Lecture	
12	2	2	Tutorial, Quiz	In-person	
13	2	2	Multistory building frames - Behavior of building frames under partial gravity loads. - Methods of maximum stress calculation in beams and columns of multistory building frame.	Lecture	
14	2	2	- Stresses produced from wind load. - Computer programs used in analysis and deign of multistory. -Sub-frames analysis by ACI codes.	Lecture	
15	2	2	Tutorial, Quiz	In-person	

Course Evaluation and Grade Breakdown:	Method	
	Attendance and participation	6
	Midterm Exam(s)	20
	Quiz	10
	Homework	4
	Final Exam	60

	concrete structures", McGraw-Hill Education.
• Main references (sources)	ACI Committee 318. (2014). Building code requi for structural concrete: (ACI 318-14); and comme (ACI 318R-14). Farmington Hills, MI: American Institute.
• Recommended supporting books and references (scientific journals, reports...)	
• Electronic references, websites	
• Curriculum or course description update rate	10%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr. Muna M. A

3- Dr. Eman K. Ibrahim

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Head of Department

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University : Mosul **College : Engineering** **Department : Civil**

1. Course name and academic level
Selected Topics in Traffic Engineering / Fourth level
2. Course code
CIV421
3. Semester/Year
Spring / 2025- 2024
4. Date this description was prepared
2025
5. Available forms of attendance
Attendance in the classroom according to the weekly lesson schedule
6. Number of study hours (total) / Number of units (total)
2 hours of theory per week(30 hours totai) / 2 units
7. Name of the course supervisor and academic title
Dr. Mohammed Yasseen Taha / AssistantProfessor Email: mohammedtaha@uomosul.edu.iq
8. Scientific course objectives

Subject objectives	▪ Understand the general principles of traffic engineering and the characteristics of traffic engineering ▪ Identify the role of traffic engineering within transportation engineering in life ▪ Analyze and design data for traffic characteristics and find the level of service for freeways ▪ Analyze and design data for traffic characteristics and find the level of service for multi-lane highways ▪ Study and classify intersections of all types on the road network ▪ Analyze and evaluate the signalized intersections performance.

9. Teaching and learning strategies
The student acquires knowledge of the characteristics of traffic engineering and the ability to distinguish, define, analyze and address the most important engineering and mathematical problems and issues in the field of traffic engineering and for specific types of roads distributed on the urban and rural road network and the method of finding the necessary immediate and future solutions and developing the appropriate design and planning for each of them.

10. Course Structure

Week	Hours	Required learning outcomes		Learning method	Evaluation method
1	2	Learn about the methods of evaluating and analyzing the types of roads found in the urban and rural road network and how to find their capacity and level of service with the most important principles of design and future planning.	Introduction to Traffic Engineering	Students' attendance in the classroom and through the educational tools available inside the classroom, with some site visits.	According to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, and reports.
2	2		Study the main characteristics in traffic engineering		
3	2		Definition and classification of freeways and identification of their parts		
4	2		Study the factors affecting freeway traffic		
5	2		Analysis of traffic characteristics in basic segment freeway		
6	2		Finding the level of service in basic segment freeway		
7	2		Design and planning of traffic in basic segment freeway		
8	2		Definition and classification of multi-lane roads and their sections		
9	2		Analysis of traffic characteristics in multi-lane highways		
10	2		Finding the level of service in multi-lane highways		
11	2		Design and planning of traffic in multi-lane highways		
12	2		Definition and classification of traffic intersections and their functions		
13	2		Study of methods of analyzing the signalized intersections		
14	2		Finding the level of service for the signalized intersections		
15	2		Study of vehicle parking, their types, importance and impact on traffic		

11. Course Evaluation and Grade Divisions

Daily attendance and preparation = 10 marks Daily homework and exam = 10 marks
Reports = 5 marks Monthly exams = 15 marks Final exam = 60 marks

12. Learning and teaching references

Required textbooks (methodology if any)	Highway Capacity Manual 2010, 2016 (Fifth & Sixth editions)
Main References (Sources)	Nicholas J. Garber, and Lester A. Hoel," *Traffic and Highway Engineering*", Fourth Edition, Cengage Learning, Toronto, Canada, pp. 99-150, 2009.
Recommended supporting books and references (scientific journals, reports...)	Not specified only within the field of traffic engineering and according to the titles
Electronic references, Internet sites	Not specified only within the field of traffic engineering and according to the titles
Curriculum update rate or description	20 %

Name and signature of the course owner **Name and signature of the head of the department**

أ.د. معتز عبد الجبار محمد عوض
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name: English language – Upper Intermediate

2. Course Code: CE406

3. Semester / Year: First / 2024 and Second/2025

4. Description Preparation Date: **2024-2025**

5. Available Attendance Forms: In class

6. Number of Credit Hours (Total) / Number of Units (Total) 2/2

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

Name: Muna Mubark Hano hanom2020@uomosul.edu.iq

Name: Eman Khalid Ibrahim emankhalid33@uomosul.edu.iq

8. Course Objectives

Course Objectives	The aim of this course is to develop the academic skills, reading comprehension, writing proficiency, and study techniques of students. It provides comprehensive instruction and practice to enhance reading skills through exposure to authentic academic texts, focusing on comprehension, vocabulary acquisition, and critical analysis. It also guides students in various types of academic writing, emphasizing organization, clarity, and grammar usage. Additionally, it equips students with essential study skills, including paraphrasing, academic presentation, note-taking, time management, critical thinking, and research techniques.

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students such as academic presentation for a specific subject selected by students.

10. Course Structure

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

Attached				
Course Evaluation and Grade Breakdown:		**Formative assessment**	**Quizzes**	6
			Presentation	10
			Assignments	5
			Attendance and participation	4
		Summative assessment	**Midterm Exam**	15
			Final Exam	60
		Total assessment	100% (100 Marks)	

Learning and Teaching Resources:

https://www.wiley.com/en-us/network/publishing/research-publishing/writing-and-conducting-research/6-tips-for-giving-a-fabulous-academic-presentation

https://novoresume.com/career-blog/how-to-write-a-cv

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. يونس عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Environmental &Sanitary Engineering
2. Course Code:
CIV414
3. Semester / Year:
Spring semester 2024−2025
4. Description Preparation Date
2025
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total):
3 hr / week (Credit)/ 3(units)
7. Course administrator's name (mention all, if more than one name)
Name: **Abeer Hashim Hassan** Email: Abeerhashim2014@uomosul.edu.iq Name: Dr.**Riyadh Mahmood Saleh** Email: Riy_sal@uomosul.edu.iq
8. Course Objectives

Course Objectives	Course objectives is to provide students the necessary background information for Sanitary Engineering and Environmental. On completion of the course the student will be able to: • Demonstrate understanding of the formation of Basic water supply demands and criteria,. • Determine the quantities and the types of water consumption • Calculate the quantity of fire demand . • Classify the types of impurities in water . • Determine the quality of water(criteria and standards). • Understand the principles of water treatment methods . • Design of water treatment plant units. • Design water supply networks. • Design of sewerage systems.
9. Teaching and Learning Strategies	
Strategy	Blended learning is achieved through the following methods :- i. Use multiple and varied teaching methods such as lectures and discussions. ii. Use illustrative and applied examples to enrich the scientific material iii. Use electronic platforms to communicate with students, such as Google Classroom.
10. Course Structure	

Course Description Form

University : Mosul **College : Engineering** **Department : Civil**

1. Course name and academic level
Selected Topics in Traffic Engineering / Fourth level
2. Course code
CIV421
3. Semester/Year
Spring / 2024- 2025
4. Date this description was prepared
2025
5. Available forms of attendance
Attendance in the classroom according to the weekly lesson schedule
6. Number of study hours (total) / Number of units (total)
2 hours of theory per week(30 hours totai) / 2 units
7. Name of the course supervisor and academic title
Dr. Mohammed Yasseen Taha / AssistantProfessor Email: mohammedtaha@uomosul.edu.iq
8. Scientific course objectives

Subject objectives	▪ Understand the general principles of traffic engineering and the characteristics of traffic engineering ▪ Identify the role of traffic engineering within transportation engineering in life ▪ Analyze and design data for traffic characteristics and find the LOS for freeways ▪ Analyze and design data for traffic characteristics and find the LOS for multi-lane highways ▪ Study and classify intersections of all types on the road network ▪ Analyze and evaluate the signalized intersections performance. ▪ Analyze and design of parking.

9. Teaching and learning strategies
The student acquires knowledge of the characteristics of traffic engineering and the ability to distinguish, define, analyze and address the most important engineering and mathematical problems and issues in the field of traffic engineering and for specific types of roads distributed on the urban and rural road network and the method of finding the necessary immediate and future solutions and developing the appropriate design and planning for each of them.

10. Course Structure

Week	Hours	Required learning outcomes		Learning method	Evaluation method
1	2	Learn about the methods of evaluating and analyzing the types of roads found in the urban and rural road network and how to find their capacity and level of service with the most important principles of design and future planning.	Introduction to Traffic Engineering	Students' attendance in the classroom and through the educational tools available inside the classroom, with some site visits.	According to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, and reports.
2	2		Study the main characteristics in traffic engineering		
3	2		Definition and classification of freeways and identification of their parts		
4	2		Study the factors affecting freeway traffic		
5	2		Analysis of traffic characteristics in basic segment freeway		
6	2		Finding the level of service in basic segment freeway		
7	2		Design and planning of traffic in basic segment freeway		
8	2		Definition and classification of multi-lane roads and their sections		
9	2		Analysis of traffic characteristics in multi-lane highways		
10	2		Finding the level of service in multi-lane highways		
11	2		Design and planning of traffic in multi-lane highways		
12	2		Definition and classification of traffic intersections and their functions		
13	2		Study of methods of analyzing the signalized intersections		
14	2		Design and timinig for the signalized intersections		
15	2		Study of parking, their types, design, importance and impact on traffic		

11. Course Evaluation and Grade Divisions

Daily attendance and preparation = 10 marks Daily homework and exam = 10 marks
Reports = 5 marks Monthly exams = 15 marks Final exam = 60 marks

12. Learning and teaching references

Required textbooks (methodology if any)	Highway Capacity Manual 2010, 2016 (Fifth & Sixth editions)
Main References (Sources)	Nicholas J. Garber, and Lester A. Hoel," *Traffic and Highway Engineering*", Fourth Edition, Cengage Learning, Toronto, Canada, pp. 99-150, 2009.
Recommended supporting books and references (scientific journals, reports...)	Not specified only within the field of traffic engineering and according to the titles
Electronic references, Internet sites	Not specified only within the field of traffic engineering and according to the titles
Curriculum update rate or description	10 %

Name and signature of the course owner
Dr. Mohammed Y. Taha

Name and signature of the head of the department
أ.د. محسن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Fundamentals of Foundation Engineering
2. Course Code:
CIV403
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Attendance List (Excel)
6. Number of Credit Hours (Total) / Number of Units (Total)
3/3
7. Course administrator's name (mention all, if more than one name)
Dr. Qutayba N. Al-Saffar Email: dr.qutayba@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Introduce students to the most important field investigations for various civil engineering projects • Provide students with sufficient information on studying the bearing capacity of soil under foundations. • Provide students with sufficient information to calculate and estimate settlement in various structures. • Introduce students to the design of various types of foundations.
9. Teaching and Learning Strategies	
Strategy	• Sustainable Education Strategy. • Strategy for linking theoretical aspects with practical application.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction and General Information (Definition of foundation engineering and types of foundations)	Fundamentals of Foundation Engineering	• A logical explanation of the subject being taught. • Informational sustainability through recalling previous topics and linking them to the new topic. • Attempting to link the theoretical aspect with the practical aspect.	• Daily exams (4). • Monthly exams (2). • Final exam.
2+3	6	Introduction to field investigations			
4+5	6	Calculating soil bearing capacity for different types of foundations			
6	3	bearing capacity of clay soil			
7	3	bearing capacity of sandy soil			
8	3	Calculate the settlement under the foundations			
9	3	Introduction to foundation designs			
10	3	Structural design of single column foundations			
11	3	Design of reinforced and unreinforced wall foundations			
12	3	Rectangular continuous foundation design			
13+ 14+15	9	Mat foundation design with applications			

11. Course Evaluation and Grade Breakdown:	Daily exams (12) + monthly exams (20) + attendance, participation and assignments (8) = annual effort (40%)

Learning and Teaching Resources:

- "Principles of Foundation Engineering" , 9th_Edition,_SI_Edition By Braja-M. Dass . (2019).
- Foundation Design & Analysis By Bowels

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Dr. Qutayba N. Al-Saffar

أ.د. محسن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description

1. Course Name:
Construction Drawing **4th Level**
2. Course Code:
CIV415
3. Semester / Year:
Spring 2025
4. Description Preparation Date:
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours/1 unit
7. Course administrator's name (mention all, if more than one name)
Name: Ahmed A. Mohammed Ali Email: a.aldubony@uomosul.edu.iq Name: Revan N. Wadie ..... Emai: revan.nahith@uomosul.edu.iq .....
8. Course Objectives

Course Objectives	In this course, students will gain proficiency: 1. Learning how to use the ACI Detailing Manual 2. Enabling students to draw structural and architectural plans. **3.** Enabling students to read structural and architectural plans

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Details are shown in the attachment below

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

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

Exams (hour mid exam 25%, three hours final exam 50%, homework 13%, quiz 12%)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	1. " Construction Drawing by Dr. Rabe Moayed (2020) 2. ACI Detailing Manual.
Electronic References, Websites	

Course Description:

The details for the description are listed in the table below.

References:

- " Construction Drawing by Dr. Rabe Moayed (2020)
- ACI Detailing Manual.

Course Details:

Subject	Week
• General review of the Engineering Drawing with an Introduction to the Topic. • Types of lines used in structural drawing. • Naming the drawing sheets.	1
• R.C. footing with the descriptions of different types. • Wall footings. • Isolated footings.	2
• Continuous footing. • Combined footing.	3
• Raft foundation	4
• R.C. Columns. • Columns key plan. • Columns Schedule.	5
• R.C. slabs – one-way slabs and two-way slabs. • Slab plans. • Slab sections. • Slab Dimensions and reinforcement.	6
Beams and girders and their details	7

Beams and girders and their details	7
• Stairs (types of stairs). • Stair's plan and positions.	8
• Stairs Sections.	9
Steel structures and its connections.	10
Column – column connections.	11
Beam – column connections.	12
Steel column – footing	13
Power point presentation.	14
Practical lecture for reading sheet plan samples	15

. Class/laboratory Schedule:

10:30 to 12:30 Sunday, 10:30 to 12:30 & 12:30 to 2:30 Monday.

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. وعد عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Quantity Survey
2. Course Code:
CIV 413
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / units (2)
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Ghanim Email:mohammed_g72@uomosul.edu.iq
8. Course Objectives

Course Objectives	Identify the types of estimation Train students to calculate quantities for construction work Train students to create quantity tables Explain how to create engineering arms
9. Teaching and Learning Strategies	
Strategy	Dividing construction work into sections, calculating the quantities of each section and the quantities of construction materials, teaching and training students to calculate the quantities of construction materials needed for various civil engineering works, and teaching students to create quantity tables and include the appropriate sections for construction work.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Interdiction of Quantity survey & Rough estimation	Quantity survey	Explanation with data show	Daily tests
3-4	4	Quantities of Building Materials (concrete block, Bricks, thermostone & Stone construction	Construction work	Explanation with data show	Daily tests

5-6	4	Construction works and Bill of Quantities	Bill of quantity	Explanation with data show	Daily tests
7-8	4	Reinforced concrete works estimate	Reinforced concrete	Explanation with data show	Daily tests
9-12	8	Earth work Estimation	Earth work	Explanation with data show	Daily tests
13-14	4	Technical specifications for construction works	Specification work	Explanation with data show	Daily tests
Course Evaluation and Grade Breakdown:			Quiz: Classwork Midterm Exam(s) Final Exam		10% 10% 20% 60%
Learning and Teaching Resources: "التخمين والمواصفات" مدحت فضيل "التخمين والمواصفات القياسية" م.د. لوى محمد عباس الشذر / جامعة الكوفة					

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description

1. Course Name:
Flexible Pavement Design – 4th class
2. Course Code:
CIV410
3. Semester / Year:
2nd Semester, 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
presence
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / units (2)
7. Course administrator's name (mention all, if more than one name)
Name: Ayman Abdulhadi & Mohammed Ganam Email: aymanmawjoud@uomosul.edu.iq mohammed_g72@uomosul.edu.iq
8. Course Objectives

Course Objectives ● Understand the basic principles of asphalt material behavior ● Understand the basic principles of aggregate used in road construction works ● Determine the thickness of paving layers	• • ….. • …..

9. Teaching and Learning Strategies	
Strategy	The teaching and learning strategy requires a combination of theoretical and practical methods, given the nature of the subject which combines basic engineering concepts with practical applications in pavement design and construction.

10. Course Structure

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

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-5	10	Basic principles of asphalt material	Asphalt material	Explanation with data show	Daily tests
6-10	10	Basic principles of aggregates used in road construction works	Aggregate	Explanation with data show	Daily tests
11-15	10	Pavement thickness	Design methods	Explanation with data show	Daily tests

11. course Evaluation	
Quiz:	10%
Classwork	10%
Midterm Exam(s)	20%
Final Exam	60%

12. Learning and Teaching Resources	
Required textbooks (curricular books)	
Main references	Garber and Hoel "Traffic and Highway Engineering" Fifth edition, 2020
Recommended books and references	ASTM standards FHA, "Superpave Fundamentals. NATIONAL HIGHWAY INSTITUTE.," Asphalt-Institute-MS2-7th-Edition-Asphalt-Institute-Mix-Design.
Electronic references	https://almerja.net/reading.php?idm=197435&utm_source=chatgpt.com https://www.dr-myoussef.com/design-aashto/?utm_source=chatgpt.com

جامعة الموصل - كلية الهندسة - قسم الهندسة المدنية

أ.د. مؤتمن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name: Analysis and Design of Deep Foundations
2. Course Code: CIV419
3. Semester / Year: 2024-2025
4. Description Preparation Date: 2025
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
30
7. Course administrator's name (mention all, if more than one name)
abdulrahman.aldaood@uomosul.edu.iq Dr. Abdulrahman Hand Aldaood mfqawad2015@uomosul.edu.iq Dr. Muwafaq Awad
8. Course Objectives

Course Objectives	Calculating ultimate pile load capacity, understanding analysis and design of deep foundation, design problem solving techniques, processing pile load test results, calculating settlement of pile foundation.

9. Teaching and Learning Strategies

Strategy	Encourage students to express their opinions. Being able to explain their solutions. Variety of teaching methods used to achieve objectives. Cooperative learning increases students' ability to develop diverse solutions. Use real-life examples of engineering problems and provide appropriate solutions.

10. Course Structure

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

Course Evaluation and Grade Breakdown:	Homework, classwork and quizzes worth 20%, mid-term exam worths 20%, and final exam worths 60%
Learning and Teaching Resources:	
Principles of foundation engineering. Ninth Edition, Das, B. M., & Sivakugan, N. Cengage learning.	
Peck, R. B., Hanson, W. E., & Thornburn, T. H. (1991). *Foundation engineering*. John Wiley & Sons. Bowles, J. E., & Guo, Y. (1996). *Foundation analysis and design* (Vol. 5, p. 127). New York: McGraw-hill.	
Poulos, H. G., & Davis, E. H. (1980). *Pile foundation analysis and design*.	

Course Description Form

1. Course Name:
Special topics in geotechnics
2. Course Code:
CIV408
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
30
7. Course administrator's name (mention all, if more than one name)
mfqawad2015@uomosul.edu.iq Dr. Muwafaq Awad mohammed.kamil@uomosul.edu.iq Dr. Mohammed Kamil Faris
8. Course Objectives

Course Objectives	Stability analysis of retaining walls and structural design of retaining walls, slope stability analysis using different methods and for different soil conditions, understanding the geotechnical design of sanitary landfills and studying compaction and permeability criteria of lining layers.

9. Teaching and Learning Strategies

Strategy	Encourage students to express their opinions. Being able to explain their solutions. Variety of teaching methods used to achieve objectives. Cooperative learning increases students' ability to develop diverse solutions. Use real-life examples of engineering problems and provide appropriate solutions.

10. Course Structure

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

Course Evaluation and Grade Breakdown:	Homework, classwork and quizzes worth 20%, mid-term exam worths 20%, and final exam worths 60%
Learning and Teaching Resources:	
Principles of foundation engineering. Ninth Edition, Das, B. M., & Sivakugan, N. Cengage earning.	
Soil strength and slope stability. Second Edition, Duncan, J. M., Wright, S. G., & Brandon, T. L., John Wiley & Sons. Geotechnical aspects of landfill design and construction. Qian, X., Koerner, R. M., & Gray, D. H.	
Principles of foundation engineering. Ninth Edition, Das, B. M., & Sivakugan, N. Cengage earning.	

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Prestressed Concrete and Bridge Design
2. Course Code:
CIV417
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr, Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the analysis and design prestressed reinforced concrete members, and RC bridges considering the international codes in design as ACI and AASHTO codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Analysis of prestress flexural members, • Design of prestress flexural members, and • Design of RC Bridges.

9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

Week	Hours	Required Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	2	Introduction:	Lecture	
2	**2**	2	Review the principles of precast reinforced concrete design	Lecture	

Learning and Teaching Resources:	
Prescribed textbooks (syllabus books, if available)	1. Design of reinforced concrete structures, A.H N 2010.
• **Main references (sources)**	2. Design of Prestressed Concrete, A.H. Nilson, 2 Edition.
• Recommended **supporting books and references (scientific journals, reports...)**	
• **Electronic references, websites**	
• **Curriculum or course description update rate**	15%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr, Muna M. A

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Head of Department

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Reinforced Concrete Design
2. Course Code:
CIV402
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr, Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the fundamentals for reinforced concrete design floors, beams considering the international codes in design as ACI codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Design of one-way RC slabs and continuous beams, • Design of two-way RC slabs supported on edge beams, • Design of one-way ribbed slabs and voided slabs, and • Design of flat slabs.

9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

Week	Hours	Required Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**	2	Introduction: Review the principles of reinforced concrete design	Lecture	

2	**2**	2	Design of One-way slab and continuous beams	Lecture	
3	**2**	2	- Design area of steel reinforcement and minimum area for shrinkage and temp. in slab and flexure for beams. - Approximate bent or cutoff points and maximum spacing for main and secondary reinforcement.	Lecture	
4	**2**	2	- Beam loads and critical moment and shear sections in beams. - Detailing for reinforcement continuous beams and slabs.	Lecture	
5	**2**	2	Detailing for reinforcement continuous beams and slabs. Homework; Tutorial; Quiz Two-way edge supported slabs - Minimum slab thickness.	Lecture	
6	**2**	2	- Direct design method and limitations. - Total static moment (panel moment). - Middle and edge strip width and moment distribution.	Lecture	
7	**2**	2	- Check for shear strength and flexure and calculation of steel reinforcement, checking minimum area and max spacing. - Design for beam supporting two-way slabs. - Design by moment coefficient method. - Homework - Quiz	Lecture	
8	**2**	2	Mid-term exam	In-person	
9	**2**	2	Flat slabs and flat plates - Minimum thickness of beamless slab according to ACI code. - Effective span length and minimum drop panel dimension. - The drop panel dimensions and requirements.	Lecture	
10	**2**	2	- Check for punching shear strength and diagonal shear. - Application of direct design method. - Design of flexural reinforcement at all critical moment section. Check the minimum and maximum spacing.	Lecture	
11	**2**	2	- Design by moment coefficient method. - Openings in flat slab construction. - Detailing of reinforcing steel considering minimum extension bars lengths. - Homework	Lecture	
12	**2**	2	One-way ribbed slabs - Code limitations and dimension. - Diagonal shear, solid part. - Voided slabs, equivalent rib width.	Lecture	

14	2	2	Course review		
15	2	2	Final exam	In-person	

Course Evaluation and Grade Breakdown:	Method	
	Attendance and participation	6
	Midterm Exam(s)	20
	Quiz	10
	Homework	4
	Final Exam	60

Learning and Teaching Resources:

Prescribed textbooks (syllabus books, if available)	Arthur H. Nilson, David Darwin, Charles W. Dol Design of concrete structures", McGraw-Hill Edu
• **Main references (sources)**	ACI Committee 318. (2014). Building code requi for structural concrete: (ACI 318-14); and comme (ACI 318R-14). Farmington Hills, MI: American Institute.
• Recommended **supporting books and references (scientific journals, reports...)**	
• **Electronic references, websites**	
• **Curriculum or course description update rate**	10%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr, Muna M. A

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Head of Department

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name:
Special Topics in Structural Analysis and Design
2. Course Code:
CIV407
3. Semester / Year:
2025-2024
4. Description Preparation Date:
2025-2024
5. Available Attendance Forms
In-person
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
1- Dr. Suhaib Y. Kasim Professor E-mail : suhaib.qasim@uomosul.edu.iq 2- Dr. Muna M. A. Lecturer E-mail : hanom2020@uomosul.edu.iq 3- Dr. Eman K. Ibrahem Lecturer E-mail : emankhalid33@uomosul.edu.iq
8. Course Objectives

Course Objectives	The students will be familiar with the analysis and design prestressed reinforced concrete members, and RC bridges considering the international codes in design as ACI and AASHTO codes to make the student able to understand and start working in the design field. On completion of the course the student will be able to: • Analysis of multistory frames, • Design of reinforced concrete stairs, and • Design of RC slabs using yield line method. .

9. Teaching and Learning Strategies	
Strategy	Lectures, Videos, Assignments

10. Course Structure

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

1	2	2	Introduction: Review the principles of precast reinforced concrete design	Lecture	
2	2	2	Design of reinforced concrete stairs Stair types and stair limitations.	Lecture	
3	2	2	Design stairs mainly reinforcement in transverse direction. Design stairs longitudinally reinforced.	Lecture	
4	2	2	Effective spans, loading and moment calculation. The calculations of the positive and negative moments.	Lecture	
5	2	2	Checking shear in stairs. Reinforcement and structural details of the stair	Lecture	
6	2	2	Homework, Tutorial, Quiz	In-person	
7	2	2	Yield line theory of slab analysis - Yielding slabs and development of plastic hinges. - Guide lines to established patterns of yield lines and axis of rotations slabs.	Lecture	
8	2	2	- Axes of rotations and failure shape. - Analysis by equilibrium method.	Lecture	
9	2	2	- Virtual work method. - Isotropically and orthotropically reinforced slabs. - Components of work methods. - Different types of loading.	Lecture	
10	2	2	- Circular and polygon slab panels. - Slabs with large opening.	Lecture	
11	2	2	- Optimization method for load calculation. -Circular and prismatic slabs. -Slabs with large openings.	Lecture	
12	2	2	Tutorial, Quiz	In-person	
13	2	2	Multistory building frames - Behavior of building frames under partial gravity loads. - Methods of maximum stress calculation in beams and columns of multistory building frame.	Lecture	
14	2	2	- Stresses produced from wind load. - Computer programs used in analysis and deign of multistory. -Sub-frames analysis by ACI codes.	Lecture	
15	2	2	Tutorial, Quiz	In-person	

Course Evaluation and Grade Breakdown:	Method	
	Attendance and participation	6
	Midterm Exam(s)	20
	Quiz	10
	Homework	4
	Final Exam	60

Learning and Teaching Resources:	
Prescribed textbooks (syllabus books, if available)	Arthur H. Nilson, David Darwin, Charles W. Dol Design of concrete structures", McGraw-Hill Education.
• Main references (sources)	ACI Committee 318. (2014). Building code requi for structural concrete: (ACI 318-14); and comme (ACI 318R-14). Farmington Hills, MI: American Institute.
• Recommended supporting books and references (scientific journals, reports...)	
• Electronic references, websites	
• Curriculum or course description update rate	10%

Course Instructor

1- Dr. Suhaib Y. Kasim

2- Dr. Muna M. A

3- Dr. Eman K. Ibrahim

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

Head of Department

أ.د. يونس عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

University : Mosul College : Engineering Department : Civil

1. Course name and academic level
Selected Topics in Traffic Engineering / Fourth level
2. Course code
CIV421
3. Semester/Year
Spring / 2024- 2025
4. Date this description was prepared
2025
5. Available forms of attendance
Attendance in the classroom according to the weekly lesson schedule
6. Number of study hours (total) / Number of units (total)
2 hours of theory per week(30 hours totai) / 2 units
7. Name of the course supervisor and academic title
Dr. Mohammed Yasseen Taha / AssistantProfessor Email: mohammedtaha@uomosul.edu.iq
8. Scientific course objectives

Subject objectives	▪ Understand the general principles of traffic engineering and the characteristics of traffic engineering ▪ Identify the role of traffic engineering within transportation engineering in life ▪ Analyze and design data for traffic characteristics and find the LOS for freeways ▪ Analyze and design data for traffic characteristics and find the LOS for multi-lane highways ▪ Study and classify intersections of all types on the road network ▪ Analyze and evaluate the signalized intersections performance. ▪ Analyze and design of parking.

9. Teaching and learning strategies
The student acquires knowledge of the characteristics of traffic engineering and the ability to distinguish, define, analyze and address the most important engineering and mathematical problems and issues in the field of traffic engineering and for specific types of roads distributed on the urban and rural road network and the method of finding the necessary immediate and future solutions and developing the appropriate design and planning for each of them.

10. Course Structure

Week	Hours	Required learning outcomes		Learning method	Evaluation method
1	2	Learn about the methods of evaluating and analyzing the types of roads found in the urban and rural road network and how to find their capacity and level of service with the most important principles of design and future planning.	Introduction to Traffic Engineering	Students' attendance in the classroom and through the educational tools available inside the classroom, with some site visits.	According to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, and reports.
2	2		Study the main characteristics in traffic engineering		
3	2		Definition and classification of freeways and identification of their parts		
4	2		Study the factors affecting freeway traffic		
5	2		Analysis of traffic characteristics in basic segment freeway		
6	2		Finding the level of service in basic segment freeway		
7	2		Design and planning of traffic in basic segment freeway		
8	2		Definition and classification of multi-lane roads and their sections		
9	2		Analysis of traffic characteristics in multi-lane highways		
10	2		Finding the level of service in multi-lane highways		
11	2		Design and planning of traffic in multi-lane highways		
12	2		Definition and classification of traffic intersections and their functions		
13	2		Study of methods of analyzing the signalized intersections		
14	2		Design and timinig for the signalized intersections		
15	2		Study of parking, their types, design, importance and impact on traffic		

11. Course Evaluation and Grade Divisions

Daily attendance and preparation = 10 marks Daily homework and exam = 10 marks
Reports = 5 marks Monthly exams = 15 marks Final exam = 60 marks

12. Learning and teaching references

Required textbooks (methodology if any)	Highway Capacity Manual 2010, 2016 (Fifth & Sixth editions)
Main References (Sources)	Nicholas J. Garber, and Lester A. Hoel," *Traffic and Highway Engineering*", Fourth Edition, Cengage Learning, Toronto, Canada, pp. 99-150, 2009.
Recommended supporting books and references (scientific journals, reports...)	Not specified only within the field of traffic engineering and according to the titles
Electronic references, Internet sites	Not specified only within the field of traffic engineering and according to the titles
Curriculum update rate or description	10 %

Name and signature of the course owner
Dr. Mohammed Y. Taha

Name and signature of the head of the department
أ.د. محسن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

Course Description Form

1. Course Name: English language – Upper Intermediate

2. Course Code: CE406

3. Semester / Year: First / 2024 and Second/2025

4. Description Preparation Date: **2024-2025**

5. Available Attendance Forms: In class

6. Number of Credit Hours (Total) / Number of Units (Total) 2/2

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

Name: Muna Mubark Hano hanom2020@uomosul.edu.iq

Name: Eman Khalid Ibrahim emankhalid33@uomosul.edu.iq

8. Course Objectives

Course Objectives	The aim of this course is to develop the academic skills, reading comprehension, writing proficiency, and study techniques of students. It provides comprehensive instruction and practice to enhance reading skills through exposure to authentic academic texts, focusing on comprehension, vocabulary acquisition, and critical analysis. It also guides students in various types of academic writing, emphasizing organization, clarity, and grammar usage. Additionally, it equips students with essential study skills, including paraphrasing, academic presentation, note-taking, time management, critical thinking, and research techniques.

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students such as academic presentation for a specific subject selected by students.

10. Course Structure

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

Attached				
Course Evaluation and Grade Breakdown:	**Formative assessment**		**Quizzes**	6
			Presentation	10
			Assignments	5
			Attendance and participation	4
	Summative assessment		**Midterm Exam**	15
			Final Exam	60
	Total assessment		100% (100 Marks)	

Learning and Teaching Resources:

https://www.wiley.com/en-us/network/publishing/research-publishing/writing-and-conducting-research/6-tips-for-giving-a-fabulous-academic-presentation

https://novoresume.com/career-blog/how-to-write-a-cv

Course Evaluation and Grade Breakdown:	**Formative assessment**	**Quizzes**	6
		Presentation	10
		Assignments	5
		Attendance and participation	4
	Summative assessment	**Midterm Exam**	15
		Final Exam	60
	Total assessment	100% (100 Marks)	

Learning and Teaching Resources:

https://www.wiley.com/en-us/network/publishing/research-publishing/writing-and-conducting-research/6-tips-for-giving-a-fabulous-academic-presentation

https://novoresume.com/career-blog/how-to-write-a-cv