

1. Course Name:	
Reinforced Concrete Design II	
2. Course Code:	
CIV32202	
3. Semester / Year:	
2 nd / third year	
4. Description Preparation Date:	
6-12-2025	
5. Available Attendance Forms:	
Weekly (Theory: 3 hours, Tutorial: 1 hours)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory: 45 Hours Tutorial: 15 hours Total: 60 hours ECTS: 5	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Lect. Hussein Ali Hussein Email: Hussein.a.hilfi@muc.edu.iq	
8. Course Objectives	
Course Objectives	The main objective of a course on reinforced concrete design is to develop, in the civil engineering student, the ability to analyze and design reinforced concrete members under different types of forces in a simple and logical manner using the basic principles of statistics and some empirical formulas based on experimental results. Once the analysis and design procedure are fully understood, their application to different types of structures becomes simple and direct, provided that the student has a good background in mechanics of materials and structural analysis. The material presented in this book is based on the requirements of the American Concrete Institute (ACI) Building Standard 318-19.
9. Teaching and Learning Strategies	
Strategy	1. Introduce students to definition of mechanics of materials. 2. Self-regulated learning (i.e., planning, monitoring and evaluating one's own learning process in the classwork / Class team work). 3. Practice testing (short question answers and exams). 4. Self-explanation (i.e., explaining to oneself how new information is related to old information or explain steps taken when solving a problem or a task).

1. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Behavior of reinforced concrete beams under shear, shear failure mechanism.	Shear of reinforced concrete beams	Theoretical	Exam
2	4		Shear of reinforced concrete beams	Theoretical	Quiz
3	4	Study the Behavior of reinforced concrete beams under pure torsion and combined shear and torsion, torsion failure mechanism, thin-tube theory for torsion) analysis and design of beams against torsion and combined shear and torsion failure.	Torsion of reinforced concrete beams	Theoretical	Homework
4	4		Torsion of reinforced concrete beams	Theoretical	Exam
5	4		Torsion of reinforced concrete beams	Theoretical	Quiz
6	4	understanding of the thermal stress.	Axial Load	Theoretical	Homework
7	4	Describe the methods for design of continuous beams and slabs	Analysis and design of continuous beams and slabs	Theoretical	Exam
8	4	Types of columns, the analysis and design of columns under axial load only. the analysis and design of columns under uniaxial moment	Analysis and design of reinforced concrete columns	Theoretical	Quiz
9	4		Analysis and design of reinforced concrete columns	Theoretical	Homework
10	4		Analysis and design of reinforced concrete columns	Theoretical	Exam
11	4	Bond strength between steel reinforcements and concrete, the design of anchorage	Bond, anchorage, and development length	Theoretical	Quiz
12	4	the calculations of development length of steel bars in tension and compressions	Bond, anchorage, and development length	Theoretical	Homework
13	4	Types of bar anchorage and the design of anchorage	Bond, anchorage, and development length	Theoretical	Exam
14	4	Design of Reinforced concrete stairs	Reinforced concrete stairs	Theoretical	Quiz

15	4	Preparatory	Preparatory week before the final exam	Theoretical	Homework
1. Course Evaluation					
The grade distribution is as follows: Assessment: Formative 40 marks, Mid-term exam 10 marks Final exam: Theory 50 marks.					
2. Learning and Teaching Resources					
Required textbooks (curricular books any)			Hearn, E. J., "Mechanics of Materials" Pergamon Press, Headington Hill Hall, Oxford OX 3 0 BW, UK, 1985.		
Main references (sources)			Hibbeler, R.C., "Mechanics of materials", 9 th Edition, Person, Singapore, 2013.		
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form
(Reinforced Concrete Design II)