

1. Course Name:	
Reinforced Concrete Design 1	
2. Course Code:	
CIV31204	
3. Semester / Year:	
1 st / 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: 4	
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	• Introduce students to reinforced concrete design. • Self-regulated learning (i.e., planning, monitoring and evaluating one's own learning process in the classwork / Class team work). • Practice testing (short question answers and exams). • 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	Understanding of the Reinforced concrete behavior	Introduction to reinforced concrete design	Theoretical	Exam
2	4	Properties of concrete and reinforcement	Materials	Theoretical	Quiz
3	4	Flexural analysis and design of beams	Working stresses method	Theoretical	Homework
4	4	Reinforced concrete behavior , Un cracked beam section	Working stresses method	Theoretical	Quiz
5	4	Flexural analysis and design of beams	Analysis and design of singly reinforced sections	Theoretical	Homework
6	4	Learning the advantages and disadvantages of reinforced concrete, the design process, the design codes, types of loadings, the load combinations, and the design methods.	Analysis and design of singly reinforced sections	Theoretical	Exam
7	4		Analysis and design of singly reinforced sections	Theoretical	Quiz
8	4		Analysis and design of singly reinforced sections	Theoretical	Homework
7	4	To develop the ability to analyze and design doubly reinforced beams	Analysis and design of doubly reinforced beams	Theoretical	Exam
9	4		Analysis and design of doubly reinforced beams	Theoretical	Quiz
10	4	To develop the ability to analyze and design T sections	Analysis and design of doubly reinforced beams T-section	Theoretical	Homework
11	4		Analysis and design of doubly reinforced beams T-section	Theoretical	Exam
12	4	To understand the serviceability requirement and to develop the ability of deflections and crack control calculations.	Serviceability requirements	Theoretical	Quiz
13	4		Immediate deflections of beams	Theoretical	Homework
14	4		Crack control	Theoretical	Quiz
15	4	Preparatory	Preparatory week before the final exam	Theoretical	Homework

2. Course Evaluation	
The grade distribution is as follows: Assessment: Formative 40 marks, Mid-term exam 10 marks Final exam: Theory 50 marks.	
3. Learning and Teaching Resources	
Required textbooks (curricular books any)	"Design of concrete structures" by Nilson et al. 2014
Main references (sources)	"Design of reinforced concrete" by Mc Cormac and Russel 2013
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form
(Reinforced Concrete Design 1)