



The Islamic University of Gaza
Civil Engineering Department

COURSE TITLE: DESIGN OF REINFORCED CONCRETE STRUCTURES (II), ECIV 4316

SEMESTER: First Semester 2026-2027

TEXT BOOK: Reinforced Concrete Design According to ACI 318-25 (SI Units), 1st Edition, by Samir Shihada, and Mohammed Arafa, 1st Ed., Taylor & Francis Group, 2026

REFERENCE:

- Building Code Requirements for Reinforced Concrete and commentary (ACI 318-25), American Concrete Institute, 2025 .
- Design of Reinforced Concrete, 9th edition, McCormac and Nelson.
- Reinforced Concrete, Mechanics and Design”, by J.K. Wight and J.G. MacGregor, 6th Ed., Pearson Education, 2012.

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PREREQUISITE: Design of Reinforced Concrete Structures I (ECIV 3315)

COURSE AIMS:

This Course aims at providing the students more advanced design topics that are essential for reinforced concrete design of structures. The students will ultimately learn how to use these design skills in analyzing and designing a comprehensive reinforced concrete project.

COURSE INTENDED LEARNING OUTCOMES:

- Analyzing and design of Concrete structures for Torsion.
- Design of RC Beam-Column members
- Design of RC two-way slabs with different methods.
- Considering code serviceability requirements
- Design of RC shallow foundation systems
- Analyzing and designing of real RC structure problems.
- Pre-requisite of the: Advance Design of Reinforced Concrete Structures.

COURSE OUTLINES:

- Design of Beam-Columns
- Design for Torsion
- Design of Two-Way Slabs
- Serviceability Requirements
- Design of Some Footing Systems
- Reinforcement Details
- Applications: Comprehensive design project

EXAMS AND GRADING POLICY:

Midterm Exam	25 points
HW & Quizzes	10 points
Course Project	15 points
Final Exam	50 points
Total	100 Points

EXAMS DATE: Midterm Exam Will be announced by the Civil Engineering Department
Final Exam Will be announced by the Civil Engineering Department

POLICIES:

Penalty will be assigned for late delivery. (Homework may **not be accepted** after deadline)

Detailed Course Outline and Homework Assignment

Chapter	Chapter	HW Problems
6	Torsion Design of RC Beams	6.1, 6.2
8	Serviceability Requirements	8.1, 8.2, 8.3
10	Design of Two-Way Slabs	10.2, 10.3
11	Design of Short Column	11.3, 11.4
	11.10 Short column subjected to axial load and bending	
12	Design of Slender Column	12.1, 12.2
14	Footings	14.2, 14.3, 14.6,
	Eccentrically-loaded isolated footings	
	Wall footings	
	Combined footings, Continuous footings	
	Strap footings	
7	Reinforcement Details	7.3, 7.6
	Bar Cutoffs and Bent-up Reinforcement	
13	Staircases	13.1, 13.2

Good Luck