Jordan University of Science and Technology

Faculty of Engineering

Civil Engineering Department

CE531 Reinforced Concrete (2) - JNQF Level: 7

First Semester 2024-2025

Course Catalog
3 Credit Hours. 3 Credit hours (3 h lectures). The course is a design course for reinforced concrete elements and structures that builds on the theory and knowledge transferred to civil engineering students over the first 4 years of their study and especially In the prerequisite course of Reinforced Concrete (1). Topics include design and detailing of continuous beams, two-way slabs, slender columns, footings and building frames in addition to design of beams to resist torsion.
Teaching Method: On Campus

Text Book	
Title	Design of Concrete Structures
Author(s)	Nilson, Darwin and Dolan
Edition	16th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
ACI Code	Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary.	American Concrete Institute.	19th Edition	
PCA Notes	Notes on ACI 318-08 Building Code Requirements for Structural Concrete with design applications.	Portland Cement Association.	1st Edition	
Edward Nawy	Reinforced Concrete: A Fundamental Approach.	Edward Nawy	5th Edition	

Hassoun and Al-Manaseer	Structural Concrete: Theory and Design.	Hassoun and Al-Manaseer.	3rd Edition	
Jordanian Code	Jordanian Code for Loads and Forces.	National Building Council, Ministry of Public Works and Housing.	2nd Edition	

Instructor	
Name	**Prof. Rajai Al rousan**
Office Location	C2L3
Office Hours	
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Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 08:30 - 10:00 Room: C2009

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
234321	CE432 Reinforced Concrete (1)	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Review of design philosophy (strength and serviceability limit states)	From **Text Book**, From **ACI Code**, From **Jordanian Code**
Weeks 2, 3	Continuous beams	From **Text Book**, From **ACI Code**, From **PCA Notes**
Weeks 4, 5	Slender Columns	From **Text Book**, From **ACI Code**, From **PCA Notes**
Weeks 6, 7, 8	Two-way Slabs	From **Text Book**, From **ACI Code**, From **PCA Notes**
Weeks 9, 10	Building Frames	From **ACI Code**, From **Hassoun and Al-Manasee**

Weeks 11, 12	Torsion	From **Text Book**, From **ACI Code**, From **Edward Nawy**
Weeks 13, 14, 15	Footings	From **Text Book**, From **ACI Code**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Identify the role of civil engineering and develop professional ethics. [1SO1] [1L7K1]	10%	
Investigate basic design concepts essential to the understanding of reinforced concrete design. [1SO2] [1L7S1]	20%	
Design of continuous beams and one-way slabs . [1SO2] [1L7S1]	10%	
Design of slender columns [1SO2] [1L7S1]	10%	
Design of two-slab systems [1SO2] [1L7S1]	10%	
Design of building frames [1SO2] [1L7S1]	10%	
Design for torsion [1SO2] [1L7S1]	10%	
Design of footings [1SO2] [1L7S1]	10%	
Encourage teamwork, problem-solving and long-life learning [1SO7] [1L7C4]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
10	80					10

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7C4
10	80	10

Evaluation	
Assessment Tool	**Weight**
First Exam	30%
Second Exam	30%
Final Exam	40%

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