



Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
Second Semester 2024/2025

Course Information

Title:	Reinforced Concrete II (0670412) Sat, Mon 12:40-1:55 Classroom: 704
Prerequisite:	Reinforced Concrete I (0670411)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Nilson, A.H., Darwin, D., and Dolan, C.W. (2013). "Design of Concrete Structures", 14 th edition , McGraw Hill, 2009
References:	• ACI Code (ACI 318 M -11). • Design of Reinforced Concrete by J. C. McCormac and R.H. Brown, 8th Edition, John Wiley & Sons.
Course Description:	Serviceability requirements of flexural members. Members subjected to Torsion and combined Shear and torsion. Design of slender (Long) columns, sway and non-sway frames. Two-way slab design: Solid and Ribbed, Coefficient Method, Direct Design Method, and Equivalent Frame Method. Stairs design. Foundation design (wall, isolated, eccentric, combined). Structural walls design: Shear walls, retaining walls.
Website:	https://www.philadelphia.edu.jo/academics/maldwaik/
Instructor:	Dr. Mais Aldwaik Email: maldwaik@philadelphia.edu.jo Office: Faculty of Engineering, room 815 Office hours: Sat, Mon: 10:35-12:40. Sun, Tue: 12:30-1:30

Course Outline

Week	Topic
1,2	Introduction, Serviceability analysis: deflection
3,4	Serviceability: Crack width
5,6,7	Beam torsion analysis and design
8,9,10	Design of slender (Long) columns, sway and non-sway frames
11,12,13,14	Foundation design (wall, isolated, eccentric, combined)
15	Stairs design

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, students should:

1.	Understand and apply serviceability requirements for RC beams and slabs	1,2
2.	Analyze and design members subjected to torsion, and combined shear and torsion.	1,2
3.	Distinguish between sway and nonsway frames, short and long (slender) columns.	2
4.	Decide of which foundation system is required for vertical elements, and design of single and combined foundations.	2
5.	Apply the basic principles of the ACI provisions to RC elements design.	7

Assessment Guidance

Evaluation of the student performance during the semester (total final grade) will be conducted according to the following activities:

- Exams:** Students will be subjected to a midterm exam during the semester.
- Quizzes:** Two-four quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
- Homework:** One-three homeworks will be assigned during the semester. You are usually given one week to submit each home work. Homework should be solved individually and submitted before or on a set agreed date.
- Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
- Collective Participation:** Brain storming and collective discussions will be carried out during any lecture. Individual students will be assessed accordingly.
- Final Exam:** Students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy

Midterm Exam	30%
Home works, Quizzes, and term work	30%
Final Exam	40%
Total:	100%

Attendance Regulation

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.