



University of Jordan
School of Engineering
Civil Engineering Department

Reinforced Concrete Design II (0901452)
Syllabus
Spring 2016/2017

Instructors:

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Office Hours: Monday and Wednesday 11:00 am – 12:30 pm

PREREQUISITES:

- Reinforced Concrete I (0901451)
- Structures II (0901342)

TEXT BOOKS:

- Design of Concrete Structures
Nilson, Darwin, and Dolan
14thEd., McGrawHill
- ACI 318M-14
- The Jordanian National Building Code

REFERENCES:

- Reinforced Concrete: Mechanics and Design
MacGregor and Weight
6th edition, Prentice Hall (2011).
- Design of Reinforced Concrete
McCormic and Brown
9thEdition, Wiley

GRADING SYSTEM:

Mid Exam (30%) (Date of Exam:19/3/2017)

Homework/Short Exam (10%)

Project (10%)

Final Exam (50%)

CONTENT:

Week	Topics	Chapter based on first reference
1-2	Revision Load Path Serviceability	Chapters 2-6
3-5	Two-Way Slabs Design Solid and Ribbed Coefficient Method Direct Design Method Equivalent Frame Method	Chapter 13
6-7	Analysis of continuous beams and frames Pattern loading Moment envelopes Moment redistribution	Chapter 12
8-9	Design and Analysis of Columns: Slender Columns Sway vs. Non-sway Biaxial	Chapter 9
10-11	Design of Walls: Shear Walls Retaining Walls Basement Walls	Chapter 17
12-15	Design and Analysis of Foundation: Single Footing Combined Footing Wall Footing Strip and Mat Footings	Chapter 16
16	Final exams week	

HOME WORKS:

- Any solution that does not look professional will not be reviewed and will receive automatically a zero.
- Do not crowd your solutions; start each solution on a separate page.
- Draw your illustrations neatly; use straight edge/ruler/French curves.
- Indicate your sign convention, and relevant parameters, labels, and coordinates on your illustrations.
- Your final answer should be identifiable; underline or draw a box around your final answer. No multiple answers.
- Provide full solutions. If it is not possible to follow your solution logic easily, you may get zero for your solution even if your “final” answer has the right value or expression.

POLICIES:

- **MAKE UP exam policy:** for students who cannot attend regular exams due to serious illness, or family emergency (all with written proof approved from the University of Jordan regulations), a makeup exam may be arranged **AFTER** the regular exam. The instructor must be notified prior to the exam, and no exceptions will be made.
- You are **NOT ALLOWED** to use **CELL PHONE**. Close your phone before you get to class unless you are expecting an emergency call then please let your instructor know before class.
- If you have a course-related question, please see the instructor during office hours or set an appointment by email.
- All cheating in the course will be referred to the Office of the Dean of Students
- You are expected to arrive in class and be seated on time and not leave the classroom before the instructor dismisses class. If you will not be arriving on time or have to leave early then let the instructor know beforehand.
- Individuals engaged in any activity that disturbs the attention of the class will be asked to leave the classroom immediately.

LEARNING OUTCOMES

When this course has been completed the student should be able to

- 1 Get familiar and understand conceptually topics of reinforced concrete elements/frames design.
- 2 Apply the methods of solving reinforced concrete elements/frames design problems that leads to the first insights into the rudiments of related fields in structural engineering sciences.
- 3 Analyze the reinforced concrete elements/frames design problems in two dimensions and three dimensions according to acceptable rules, regulation and ACI structural codes
- 4 Apply the different methods of reinforced concrete elements/frames design due to applied loads
- 5 Apply and integrate the basic reinforced concrete elements/frames design including different types of beams, columns slabs, frames and the principles of engineering sciences into working practical knowledge.

ABET OUTCOMES:

- An ability to apply knowledge of mathematics, science and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to function on multi-disciplinary teams.
- An ability to identify, formulate and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global and societal context.
- Recognition of the need for, and an ability to engage in life-long learning.
- A knowledge of contemporary issues
- An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.