**The Hashemite University**
**Faculty of Engineering**
**Civil Engineering Program**
**Course Syllabus**

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|---|---|---|
| **Course Title:** | **Reinforced Concrete II** | **Course Number:110401422** |
| **Designation:** | Compulsory | **Prerequisite(s): 110401421** |
| **Instructor:** | Dr. Husam Qablan | **Instructor's e-mail:** hqablan@hu.edu.jo |
| **Office Hours:** | | |

**Course Description (catalog):** Teach the students about slender columns, moment magnification, design of isolated and wall footings, axially loaded footings, Combined footings, eccentrically loaded footings, continuous beams and frames, pattern loading, moment envelopes, moment redistribution, estimation of dead and live loads, structural layout, deflections, crack control, design of bearing walls, detailing of reinforcement.

**Textbook(s) and/or Other Supplementary Materials:**
MacGregor, J. G. and Wight, J. K. "Reinforced Concrete: Mechanics and Design." Prentice-Hall, latest edition.

**References:**
Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary (ACI 318R-08), American Concrete Institute, 2008.

**Major Topics Covered:**

| Topics | No. of Weeks | Contact hours* |
|---|---|---|
| One-Way Joist Slab System | 1 | 3 |
| Serviceability: Deflections and Crack Control | 3 | 9 |
| Approximate Methods for Two-Way Slabs (Direct Design Method) | 4 | 12 |
| Design for Torsion | 2 | 6 |
| Design for Slender Columns | 2 | 6 |
| Design for Biaxial Columns | 1 | 3 |
| Design of Footings and Detailing of Reinforcement | 2 | 6 |
| **Total** | **15** | **45** |

*Contact hours include lectures, quizzes and exams

**Specific Outcomes of Instruction (Course Learning Outcomes):**

**After completing the course, the student will be able to:**

1. Review of moment of inertia for composite sections, crack control and deflection of structures per ACI-Code limitations, shear stresses in thin-walled members subjected to torsion. (1)
2. Design various reinforced concrete members (slabs, beams, columns and footings) to support the applied loads. (2)

**Student Outcomes (SO) Addressed by the Course:**

| # | Outcome Description | Contribution |
|---|---|---|
| | **General Engineering Student Outcomes** | |
| 1 | an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics | M |
| 2 | an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors | H |

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| **H**=High, **M**= Medium, **L**=Low | | |

**Grading Plan:**

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|---|---|
| 1st Exam | 30 Points |
| 2nd Exam | 30 Points |
| Final exam | 40 points |

**General Notes:** Beware of Plagiarism: copying and handing in for credit someone else's work
Any plagiarism case will result in an automatic 'F' for the course

**Prepared by:** Dr. Husam Qablan **Date: 19th Sep. 2022**