**Reinforced Concrete Design II**

**Course Description Form**

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| 1. Course Name: | | | | | | | | |
| **Reinforced Concrete Design II** | | | | | | | | |
| 1. Course Code: | | | | | | | | |
|  | | | | | | | | |
| 1. Semester / Year: | | | | | | | | |
| Second semester / third year | | | | | | | | |
| 1. Description Preparation Date: | | | | | | | | |
| 29-3-2024 | | | | | | | | |
| 1. Available Attendance Forms: | | | | | | | | |
| class | | | | | | | | |
| 1. Number of Credit Hours (Total) / Number of Units (Total) | | | | | | | | |
| 4 hours / 3 unit | | | | | | | | |
| 1. Course administrator's name (mention all, if more than one name) | | | | | | | | |
| Name: Bashar Abdelkarim  Email: bashar.faisal@muc.edu.iq | | | | | | | | |
| 1. Course Objectives | | | | | | | | |
| **Course Objectives** | | | | | | **Serviceability (cracking-deflection), Bond – Anchorage and development length, One-way slab , Two-way slab , short columns, Slender columns.** | | |
| 1. Teaching and Learning Strategies | | | | | | | | |
| **Strategy** | | Present and discuss real-life cases  Presenting and discussing exceptional cases  Raising mathematical problems and dilemmas, discussing them, solving them in more than one way, and comparing different methods  Establish discussion groups  Asking students to submit scientific reports on topics of their choice | | | | | | |
| 1. Course Structure | | | | | | | | |
| **Week** | **Hours** | | **Required Learning Outcomes** | **Unit or subject name** | | | **Learning method** | **Evaluation method** |
| **1** | **4** | | Understand the concept of serviceability in reinforced concrete structures, including cracking and deflection behavior. | Serviceability (cracking-deflection) | | | **Lectures** | Tests, quizzes and reports |
| **2** | **4** | | Serviceability (cracking-deflection) | | | **Lectures** | Tests, quizzes and reports |
| **3** | **4** | | Serviceability (cracking-deflection) | | | **Lectures** | Tests, quizzes and reports |
| **4** | **4** | | Analyze and design structural elements to meet serviceability requirements. | Bond – Anchorage and development length | | | **Lectures** | Tests, quizzes and reports |
| **5** | **4** | | Apply principles of bond, anchorage, and development length in the design of reinforced concrete members. | Bond – Anchorage and development length | | | **Lectures** | Tests, quizzes and reports |
| **6** | **4** | | Bond – Anchorage and development length | | | **Lectures** | Tests, quizzes and reports |
| **7** | **4** | | Design and analyze one-way slabs for bending and deflection. | One-way slab | | | **Lectures** | Tests, quizzes and reports |
| **8** | **4** | | One-way slab | | | **Lectures** | Tests, quizzes and reports |
| **9** | **4** | | Design and analyze two-way slabs for various loading and support conditions. | Two-way slab | | | **Lectures** | Tests, quizzes and reports |
| **10** | **4** | | Two-way slab | | | **Lectures** | Tests, quizzes and reports |
| **11** | **4** | | Differentiate between short and slender columns in terms of behavior and design principles. | short columns | | | **Lectures** | Tests, quizzes and reports |
| **12** | **4** | | Design short columns for axial loads and combined axial loads with bending moments. | short columns | | | **Lectures** | Tests, quizzes and reports |
| **13** | **4** | | short columns | | | **Lectures** | Tests, quizzes and reports |
| **14** | **4** | | Design slender columns considering additional moments due to slenderness effects. | Slender columns | | | **Lectures** | Tests, quizzes and reports |
| **15** | **4** | | Slender columns | | | **Lectures** | Tests, quizzes and reports |
| 16 | **4** | | Apply relevant codes and standards in the design of slabs, columns, and other structural elements. | Slender columns | | | **Lectures** | Tests, quizzes and reports |
| 1. Course Evaluation | | | | | | | | |
| Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc | | | | | | | | |
| Quizzes and reports 10%  Monthly tests 40%  Final exam. 50% | | | | | | | | |
| 1. Learning and Teaching Resources | | | | | | | | |
| Required textbooks (curricular books, if any) | | | | | Design of Concrete Structures, Fifteen Edition, by Nilson, Darwin, and Dolan | | | |
| Main references (sources) | | | | | ACI Committee 318 (2014). Building code requirements for structural concrete, (ACI 318M-14) and commentary (318R-19). American Concrete Institute, Farmington Hills, Michigan, USA | | | |
| Recommended books and references (scientific journals, reports...) | | | | | Design of Reinforced Concrete, Ninth Edition, by JACK C. McCORMAK , and RUSSELL H. BROWN  Reinforced Concrete Design, Eighth Edition, by Abi O. Aghayere, and George F. Limbrunner.  Design of Reinforced Concrete Structures, Second Edition, by M. A. Ghoneim, and M. T. El –Mihilmy | | | |
| Electronic References, Websites | | | | |  | | | |