HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Reinforced Concrete II				
CODE: CE352	**SEMESTER:** SPRING			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES: - **CO-REQUISITES: -**	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS: 4	4	0	4	5

CONTENT OF THE COURSE:
Design of slabs and different floor systems, one way, two ways. Design of continuous beams. Design of columns under axial and eccentric loadings, short columns and slenderness limits. Types of footings and their structural designs. In addition to practical design project.

OBJECTIVE OF THE COURSE:
To enable students to design different elements of R.C. structures such as slabs, beams, columns and footings.

WEEKLY SCHEDULE	
Week	**Topics**
1	Chapter A: Design of One-Way Slabs
2	Chapter A: Design of One-Way Slabs
3	Chapter B: Design of Short Columns
4	Chapter B: Design of Short Columns
5	Chapter C: Footings
6	Chapter C: Footings
7	Chapter C: Footings
8	Midterm Week
9	Chapter D: Continuous Reinforced Concrete Structures
10	Chapter D: Continuous Reinforced Concrete Structures
11	Chapter E: Two-Way Slabs
12	Chapter E: Two-Way Slabs
13	Chapter E: Two-Way Slabs
14	Chapter E: Two-Way Slabs

- **TEXTBOOK: • Jack McCormac, Russell Brown, "Design of Reinforced Concrete", 10th Edition, John Wiley & Sons, 2015.**

REFERENCE BOOKS

- **James K. Wight, F.E. Richart, Jr., James G. Macgregor, "Reinforced Concrete, Mechanics and Design", 6th Edition, Pearson, 2012.**
- **A.H. Nilson, D. Darwin, C.W. Dolan, "Design of Concrete Structures", 14th Ed McGraw-Hill, 2010.**

- **W.H. Mosley, R. Hulse and J.H Bungey, "Reinforced Concrete Design to Eurocode 2", 7th Edition, Palgrave Macmillan, 2012.**
- ACI 318-14, "Building Code Requirements for Structural Concrete and Commentary", American Concrete Institute, 2014.
- TS 500, "Requirements for Design and Construction of Reinforced Concrete Structures", Turkish Standards, 2000.
- EN 1992-1-1: 2004 (E), "Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings", European Standard, CEN, 2004.

EVALUATION SYSTEM:		
IN-TERM STUDIES	**QUANTITY**	**PERCENTAGE (%)**
Midterm Exam	1	30
Homework	4	20
Laboratory works	0	0
Quiz	0	0
Final Exam	1	50
TOTAL	6	100
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	5	50
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	50
TOTAL	6	100

COURSE CATEGORY:	**PERCENTAGE (%)**
Mathematics and Basic Sciences	20%
Engineering	30%
Engineering Design	50%
Social Sciences	0

TABLE OF ECTS / WORKLOAD:			
Activities	**QUANTITY**	**Duration (Hour)**	**Total Workload**
Course Duration	13	4	52
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Laboratory works	0	0	0
Mid-term	1	2	2
Final examination	1	2	2
Homework	4	2	8
Quiz	0	0	0
Total Work Load			**134**

Total Work Load / 30			**4.5**
ECTS Credit of the Course			**5**

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	0	3	3	2	3	0	0	0	0	0	0
LO2	0	3	3	2	3	0	0	0	0	0	0
LO3	0	3	3	2	3	0	0	0	0	0	0
LO4	0	3	3	2	3	0	0	0	0	0	0
LO5	0	3	3	2	3	0	0	0	0	0	0
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

INSTRUCTOR(S):	Assoc. Prof. Dr. Amjad Khabaz
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:	**PROGRAM OUTCOMES:**
LO1: To analyze and design reinforced concrete sections subjected to combined axial force and bending moment. LO2: To design one-way and two-way slabs LO3: To design RC continuous beams LO4: To design RC short and slender columns LO5: To design different types of reinforced concrete footings	**PO1:** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. **PO2:** Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. **PO3:** Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. **PO4:** Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. **PO5:** Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions. **PO6:** Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. **PO7:** Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective

	presentations, and give and receive clear and intelligible instructions. **PO8:** Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. **PO9:** Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice. **PO10:** Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development. **PO11:** Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.