TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Cıvıl Engıneerıng (Englısh)

Course Information

REINFORCED CONCRETE STRUCTURES					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
CVE321	Fall	3	0	3	3

Prerequisites and co-requisites	none
Language of instruction	Turkish
Type	Elective
Level of Course	Bachelor's
Lecturer	Prof. Dr. Mehmet ÇAKIROĞLU
Mode of Delivery	Face to Face
Suggested Subject	none
Professional practise (internship)	None
Objectives of the Course	Teaching the design and the calculation principles of the reinforced concrete structural systems and structural elements
Contents of the Course	Concrete and Reinforced concrete, The basic principles for the behavior of reinforced concrete and calculation, Construction safety, Elements under the effect of axial force, Ultimate strength of the elements under the influence of simple bending, Ultimate strength of the elements under the combined bending and axial compression, Ultimate strength of the elements carrying biaxial bending and axial compression

Learning Outcomes of Course

#	Learning Outcomes
1	Knows concrete and reinforced concrete
2	Learns analysis method and performs the method
3	Performs design of members under axial compression
4	Performs analysis and design of members under bending
5	Performs cross section and reinforcement design of members under combined bending
6	Performs design of slender columns

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	The history of concrete and reinforced concrete, constituent materials of concrete and their properties	Written and oral expression, explanation with presentation, sample analysis
2	Stress-strain relationship of the concrete and mathematical models, reinforcing steel	Written and oral expression, explanation with presentation, sample analysis
3	The basic principles for the behavior of reinforced concrete and calculation, reinforced concrete behavior	Written and oral expression, explanation with presentation, sample analysis
4	The concept of construction safety	Written and oral expression, explanation with presentation, sample analysis
5	Elements under the axial compression	Written and oral expression, explanation with presentation, sample analysis

6	Ultimate strength of the elements under the simple bending, Simple reinforced rectangular section beams, double reinforced rectangular cross-sections	Written and oral expression, explanation with presentation, sample analysis
7	T sections, sections with different geometry, cross-section calculations, detailing	Written and oral expression, explanation with presentation, sample analysis
8	Midterm exam	Written exam
9	ultimate strength of the elements under combined bending-axial compressive and bending	Written and oral expression, explanation with presentation, sample analysis
10	Determination of interaction diagram and properties, two sides symmetrically reinforced sections	Written and oral expression, explanation with presentation, sample analysis
11	Ultimate strength of the sections with intermediate reinforced and non-rectangular cross-sections	Written and oral expression, explanation with presentation, sample analysis
12	Ultimate strength of the elements which carrying biaxial bending and axial compression	Written and oral expression, explanation with presentation, sample analysis
13	Approximate methods, Sizing and reinforcement calculation, curve samples of the column ultimate strength	Written and oral expression, explanation with presentation, sample analysis
14	The effect of slenderness, calculation method, slender column design	Written and oral expression, explanation with presentation, sample analysis
15	The effect of slenderness, calculation method, slender column design	Written and oral expression, explanation with presentation, sample analysis
16	Final Exam	Written exam

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Betonarme, Uğur Ersoy, Güney Özcebe		
2	Betonarme Yapılar, Zekai Celep		
3	Örnek Problemlerle Betonarme, Cengiz Dündar, Serkan Tokgöz, A. Kamil Tanrıkulu		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Knows concrete and reinforced concrete	2	1
2	Learns analysis method and performs the method	2	1
3	Performs design of members under axial compression	2	1
4	Performs analysis and design of members under bending	2	1
5	Performs cross section and reinforcement design of members under combined bending	2	1
6	Performs design of slender columns	2	2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42

2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	0	0	0
8	Midterm Exam	0	0	0
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	5	5
16	Final Exam	1	1	1
				90