

**General course information:**

<b>Course title:</b>	Reinforced Concrete Special Topics	<b>Course code:</b>	CE09_S06
<b>Credits:</b>	5	<b>Work load (hours):</b>	125
<b>Course level:</b>	Undergraduate <input checked="" type="checkbox"/>	Graduate	<input type="checkbox"/>
<b>Course type:</b>	Mandatory <input type="checkbox"/>	Selective	<input checked="" type="checkbox"/>
<b>Course category:</b>	Basic <input type="checkbox"/>	Orientation	<input checked="" type="checkbox"/>
<b>Semester:</b>	9 <sup>th</sup>	<b>Hours per week:</b>	4
<b>Course objectives (capabilities pursued and learning results):</b>			
Design and reinforcement details of specific R/C elements. Design of straight and spiral stairs. Design of deep beams and corbels. Static method for aseismic design. Designing a R/C tank. Design of strip-footings. Design concepts and basic methods of intervention. Appropriate materials for intervention. Load transfer mechanisms between old and new materials. Design of dowels, anchors, and jackets. Supporting scaffolding. Slides on earthquake -comments.			
<b>Prerequisites:</b>			
1. Reinforced Concrete Design I 2. Mechanics I			

**Instructor's data:**

<b>Name:</b>	Christos Papakonstantinou
<b>Level:</b>	Assistant Professor
<b>Office:</b>	-
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<b>Other tutors:</b>	-

**Specific course information:**

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Deep Beam Design	4	2
2	Corbel Design	4	2
3	R-C linear Stair Design(1)	4	3
4	R-C linear Stair Design(2)	4	3
5	Spiral Stair Design (support at ends)	4	3

6	Spiral Stair Design (support along the side)	4	3
7	Design concepts and basic methods of rehabilitation (methods and materials)	4	3
8	Performance requirements and compliance criteria	4	4
9	Welding. Transfer mechanisms between old and new reinforcement.	4	2
10	Dowel Design	4	2
11	Anchor Design	4	2
12	RC Jacket Design	4	2
13	Frame strengthening methods. Infill walls.	4	1
14	Supporting scaffolding. Possible damages from earthquakes	4	2

<b>Additional hours for:</b>			
<b>Class project</b>	<b>Examinations</b>	<b>Preparation for examinations</b>	<b>Educational visit</b>
60	-	-	-

<b>Suggested literature:</b>
1. Greek Code for Design of R/C Structures
2. Greek Code for Seismic Design
3. The art of reinforcement detailing (F.Leonhard – E.Monning)

<b>Teaching method (select and describe if necessary - weight):</b>		
Teaching	<input checked="" type="checkbox"/>	55%
Seminars	<input checked="" type="checkbox"/>	5 %
Demonstrations	<input type="checkbox"/>	-
Laboratory	<input type="checkbox"/>	-
Exercises	<input checked="" type="checkbox"/>	40%
Visits at facilities	<input type="checkbox"/>	-
Other (describe): .....	<input type="checkbox"/>	-
<b>Total</b>		<b>100%</b>

<b>Evaluation method (select)- weight:</b>				
	<u>written</u>	<u>%</u>	<u>Oral</u>	<u>%</u>
Homework	<input type="checkbox"/>		<input type="checkbox"/>	
Class project	<input checked="" type="checkbox"/>	60	<input checked="" type="checkbox"/>	25
Interim examination	<input type="checkbox"/>		<input type="checkbox"/>	
Final examinations	<input checked="" type="checkbox"/>	15	<input type="checkbox"/>	
Other (describe): .....	<input type="checkbox"/>		<input type="checkbox"/>	