AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Advanced Reinforced Concrete								
Course Code	MCE510		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Providing an understanding over advanced topics in reinforced concrete structures.								
Course Content	Behavior of Reinforced Concrete Sections (Moment-curvature relationship, N-M interaction diagram), Torsion (Equilibrium torsion, compatibility torsion), Punching, Combined Axial Load and Biaxial Bending, Capacity Design, Seismic Design Principles for Reinforced Concrete Structures, Effect of Infill Walls in Lateral Response.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)	Assoc. Prof. Mehmet Eren UZ								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	25
Final Examination	1	35
Assignment	5	15
Project	1	25

Recommended or Required Reading	
1	U. Ersoy, G. Özcebe and T. Tankut, Reinforced Concrete, METU Press, 2008.
2	R. Park and T. Paulay, Reinforced Concrete Structures, John Wiley & Sons, 1975
3	E. G. Nawy, Reinforced Concrete : A Fundamental Approach, Pearson Prentice Hall, 6th Edition 2005.

Week	Weekly Detailed Course Contents	
1	Theoretical	Behavior of Reinforced Concrete Sections (Moment-curvature relationship)
2	Theoretical	Behavior of Reinforced Concrete Sections (N-M interaction diagram)
3	Theoretical	Torsion
4	Theoretical	Torsion
5	Theoretical	Torsion
6	Theoretical	Punching
7	Theoretical	Punching
8	Theoretical	Combined Axial Load and Biaxial Bending
9	Theoretical	Combined Axial Load and Biaxial Bending
10	Theoretical	Capacity Design
11	Theoretical	Capacity Design
12	Theoretical	Seismic Design Principles for Reinforced Concrete Structures
13	Theoretical	Seismic Design Principles for Reinforced Concrete Structures
14	Theoretical	Seismic Design Principles for Reinforced Concrete Structures
15	Theoretical	Effect of Infill Walls in Lateral Response
16	Final Exam	Final Examination

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	5	3	112
Assignment	5	8	0	40
Project	1	16	0	16
Midterm Examination	1	15	2	17

Final Examination	1	12	3	15
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	He/She can understand the general behavior of reinforced concrete sections
2	He/She can understand the response of reinforced concrete members subjected to torsional moments
3	He/She can comprehend the punching problem
4	He/She can understand the response of reinforced concrete members under combined axial load and biaxial bending
5	He/She can have an understanding over the capacity design
6	He/She can understand the principles for seismic design of reinforced concrete structures
7	He/She can understand the possible effects of infill walls in lateral response of reinforced concrete structures

Programme Outcomes *(Civil Engineering Master)*	
1	To be able to develop expertise knowledge in a Civil engineering area founded on their graduate competence.
2	To be able to use the theoretical and practical expertise knowledge gained in their specialty area.
3	To be able to use the information, problem solving and / or practical skills from the field, in interdisciplinary studies.
4	To be able to create new knowledge by integrating their knowledge area with the knowledge coming from different disciplines; and solve problems that need expertise by using scientific research methods
5	To be able to solve the problems related to his/her area by using appropriate research methods
6	To be able to devise a problem in their specialty area, develop a solution methodology, solve the problem, and interpret the results and take action if necessary
7	To be able to criticize the knowledge in their specialty area, guide the learning process, and independently direct high level studies
8	To be able to systematically communicate the recent developments in their specialty area and their own studies to groups both inside and outside their specialty area, orally, in writing and visually
9	To be able to use computer software at a level required by their specialty area with drawing upon information and communication technology at a high level
10	To be able to introduce scientific, technological, social and cultural advancements in the field of civil engineering and to contribute to the process of being an information of the society and to sustain it.
11	To be conscious of professional and ethical responsibility and contribute to the establishment of this consciousness.
12	To be able to protect social, scientific, and ethical values during collection, interpretation, and dissemination stages of the data associated with their specialty area; instruct and supervise these values
13	To be able to use at least one foreign language in a level to follow current developments related to the field.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6	L7
P1	5	5	5	5	5	4	5
P2	4	4	4	4	4	5	4
P3	5	5	5	5	5	4	5
P4	4	4	4	4	4	5	4
P5	5	5	5	5	5	4	5
P6	4	4	4	4	4	5	4
P7	5	5	5	5	5	4	5
P8	4	4	4	4	4	5	4
P9	5	5	5	5	5	4	5
P10	4	4	4	4	4	5	4
P11	5	5	5	5	5	4	5
P12	4	4	4	4	4	5	4
P13	5	5	5	5	5	4	5