



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Seismic Assessment and Strengthening of Reinforced Concrete Buildings							
Course Code		MCE516		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	198 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Providing the details for the seismic assessment and strengthening of reinforced concrete buildings.							
Course Content		Seismic performance objectives, Code design criteria, Types of seismic analyses: linear and nonlinear methods, Procedures for evaluating existing buildings, Vulnerability assessment methods, Strengthening techniques: System improvement and member strengthening.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Project Based Study, Individual Study, Problem Solving					
Name of Lecturer(s)		Assoc. Prof. Mehmet Eren UZ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Final Examination	1	40
Assignment	10	60

Recommended or Required Reading

1	Seismic Rehabilitation of Existing Buildings, ASCE/SEI 41-06, ASCE Standard, 2007.
2	R. Park and T. Paulay, Reinforced Concrete Structures, John Wiley & Sons, 1975.

Week	Weekly Detailed Course Contents	
1	Theoretical	Seismic performance objectives
2	Theoretical	Code design criteria
3	Theoretical	Code design criteria
4	Theoretical	Linear analysis methods
5	Theoretical	Linear analysis methods
6	Theoretical	Nonlinear analysis methods
7	Theoretical	Nonlinear analysis methods
8	Theoretical	Evaluation procedures for existing buildings
9	Theoretical	Evaluation procedures for existing buildings
10	Theoretical	Assessment methods
11	Theoretical	Assessment methods
12	Theoretical	Strengthening: system improvement
13	Theoretical	Strengthening: system improvement
14	Theoretical	Strengthening: member strengthening
15	Theoretical	Strengthening: member strengthening
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	0	3	45
Assignment	10	14	0	140
Final Examination	1	10	3	13
Total Workload (Hours)				198
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	He/She can understand seismic performance objectives
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2	He/She can evaluate, model and analyze an existing building
3	He/She can assess an existing building after a seismic analysis
4	He/She can understand different strengthening methods
5	He/She can provide a strengthening for a vulnerable building
6	He/She can re-assess the strengthened building

Programme Outcomes (Civil Engineering (English) 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
P1	5	4	5	4	5	4
P2	4	5	4	5	4	5
P3	5	4	5	4	5	4
P4	4	5	4	5	4	5
P5	5	4	5	4	5	4
P6	4	5	4	5	4	5
P7	5	4	5	4	5	4
P8	4	5	5	5	4	5
P9	5	4	4	4	5	4
P10	4	5	5	5	4	5
P11	5	4	4	4	5	5
P12	4	5	5	5	4	4
P13	5	4	4	4	5	4

