

COURSE IDENTIFICATION FORM

Course Code and Name: IM5052 DAMAGE ASSESSMENT AND STRENGTHENING METHODS IN BUILDINGS

Department of : CIVIL ENGINEERING / MASTER PROGRAMME

Semester	Theoretic Hour	Practice Hour	Total Hour	Credits	ECTS	Education Language	Type: Compulsory Elective
Atumn/Spring	3	0	3	3	5	Turkish	Optional

Prerequisite (s)

Instructor

Prof. Dr. Burak YÖN

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Course Assistant

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Groups / Classes

Course Aim

Information will be given and practices will be given about the evaluation of damages caused by structural faults and earthquakes and the repair and strengthening methods to make the damaged structures reusable.

Course Goals

- To teach the student to evaluate structural and non-structural damages caused by various factors and to determine appropriate strengthening methods.

Course Learning Outs and Proficiencies

- Students will be able to identify the types and causes of damage in damaged structures.
- Students will learn how to make structural and non-structural damages reusable through repair and strengthening methods.
- Determining the level and technique of repair and strengthening and preparing projects.

Course Basic and Auxiliary Contexts

- Lecture Notes
- N. Bayülke, Repair and Strengthening of Structures Damaged in Earthquakes (in Turkish).
- Türkiye Building Earthquake Regulation
- Z. Celep, Introduction to Earthquake Engineering and Earthquake Resistant Building Design (in Turkish).
- Z. Celep, Reinforced Concrete Structures (in Turkish)

Methods of Give a Lecture

Face to Face

Assessment Criteria		If Available, to Sign (x)	General Average Percentage (%) Rate
	Midterm Exam	X	50
	1. Quiz		
	2. Quiz		
	3. Quiz		
	4. Quiz		
	Oral Examination		
	Practice Examination (Laboratory, Project etc.)		
	Final Exam	X	50
Semester Course Plan			
Week	Subjects		
1	Introduction, Determination, evaluation and classification of damage types.		
2	Crack and damage types in Reinforced Concrete Structures		
3	Damage types in masonry structures		
4	Determination of building safety		
5	Building reinforcement approaches and element reinforcement details		
6	Methods for evaluating reinforced concrete structure behavior and application to a sample structure		
7	Analysis of masonry structures under vertical and horizontal loads		
8	Midterm Exam		
9	Reinforcement problems in reinforced concrete structures		
10	Strengthening Reinforced Concrete Columns		
11	Strengthening Reinforced Concrete Beams		
12	Strengthening Reinforced Concrete Walls		
13	Repair and strengthening of existing buildings according to TDY-07 and TBDY-2018		
14	Final Exam		