

COURSE IDENTIFICATION FORM

Course Code and Name: IM5050 EARTHQUAKE RESISTANT BUILDING DESIGN

Department of : CIVIL ENGINEERING / MASTER PROGRAMME

Semester	Theoretic Hour	Practice Hour	Total Hour	Credits	ECTS	Education Language	Type: Compulsory Elective
Autumn/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

To teach the rules to be followed in earthquake-resistant building design and the methods used in this design.

Course Goals

- To give students basic information about earthquakes, seismic waves and the behavior of structures against these waves.
- To teach the basic principles that should be taken into consideration in earthquake resistant building design.
- Examining national and international standards, regulations and best practice examples in earthquake-resistant building design.

Course Learning Outcomes and Proficiencies

- Students will be able to apply the rules to be followed in architectural design for earthquake-resistant building design.
- Students will be able to compare building load-bearing systems used in earthquake-resistant building design.
- Students will be able to use equivalent horizontal load, mode coupling and time history calculation methods.

Course Basic and Auxiliary Contexts

- ASCE 7 Minimum Design Loads for buildings and other Structures.
- Chopra, A. K., "Dynamics of Structures, Theory and Applications to Earthquake Engineering", Prentice Hall, 2001
- Earthquake Engineering Handbook, W.-F. Chen and C. Scawthorn, CRC Press, 2003
- Türkiye Building Earthquake Regulation
- Z. Celep, Introduction to Earthquake Engineering and Earthquake Resistant Building Design (in Turkish).
- Newmark, N. M., Rosenblueth, E.; Fundamentals of Earthquake Engineering, Prentice Hall, 1971
- Geotechnical Earthquake Engineering, S. L. Kramer, Prentice Hall,

1996

Methods of Give a Lecture

Face to Face

Assessment Criteria**Midterm Exam****If Available, to
Sign (x)****General Average
Percentage (%) Rate****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

2

Earthquake Causes and Types

3

Earthquake Parameters

4

Rules to be followed in Architectural Project

5

Rules to be followed in Architectural Project

6

Load Carrying System Elements

7

Building Carrier Systems

8

Midterm Exam

9

Obtaining Response Spectra

10

Türkiye Building Earthquake Regulation

11

Equivalent Horizontal Load Method

12

Mode Combination Method

13

Calculation Method in the Time Domain

14

Final Exam

