

identification	Department	Civil Engineering		
	Program	Undergraduate		
	Subject	Engineering Seismology, 6 ECTS credits		
	Term	Fall, 2019		
	Instructor	Mehdi Bashiri		
	E-mail	mbashiri@khazar.org		
	Phone:			
Prerequisites	Structural Mechanics, Physics, Math.			
Language	English			
Compulsory/Elective	Compulsory			
Textbooks and course materials	R W Clough and J Penzien, 1993, Dynamics of structures, McGraw-Hill, NY Chopra, A.K., "Dynamics of Structures – Theory and Applications to Earthquake ASCE Standard Class notes and presentation slides			
Teaching methods	Case analysis			x
	Group discussion			x
	Assignment(s)			x
	Lecture			x
	Course paper			
	Others			
Evaluation Criteria	Methods	Date/deadlines	Percentage (%)	
	Midterm Exam		30	
	Case studies			
	Class Participation		10	
	Quizzes		20	
	Laboratory Work (Assignments)			
	Final Exam		40	
	Other			
Total		100%		
Course objectives	provide insights into the earthquake concepts, learning the methods of analyzing structures subjected to the earthquake and keep them safe from it.			
Learning outcomes	After taking this course, students will have the background knowledge about what the earthquake is and how it works. The students learn how to determine the probable earthquake load and analyze the structures subjected to the earthquake and also the methods that exists to reduction of the earthquake damages			
Course outline	The main objective of this course is to introduce the basic knowledge on earthquake engineering and analysis of structures subjected to earthquake			
Policy	<p>Preparation for class The structure of this course makes your individual study and preparation outside the class extremely important. The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. After the lecture, you should study your notes and work relevant problems and cases from the end of the chapter and sample exam questions.</p> <p>1. Withdrawal (pass/fail) This course strictly follows grading policy of the School of Engineering and Applied Science. Thus, a student is normally expected to achieve a mark of at least 60% to pass. In case of failure, he/she will be required to repeat the course the following term or year.</p> <p>2. Cheating/plagiarism Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinations will lead to paper cancellation. In this case, the student will automatically get zero (0), without any considerations.</p>			

	<p>3. Professional behavior guidelines The students shall behave in the way to create favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.</p> <p>4. Ethics Students should not arrive in late to class. All cell phones must be turned off and stowed away before entering class. Use of any electronic devices is not allowed in the classroom and violators will be punished accordingly.</p> <p>Lessons are conducted in English that's why questions and their answers must be in English.</p>
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Tentative Schedule			
Week	Date	Topics	Textbook/Assignments
1		Introduction to earthquake hazards; strong ground motions and site effects; landslides; liquefaction and tsunami damages	
2		Early Engineering seismology and understanding of earthquakes	
3		Introduction to engineering seismology; Terminologies and definitions; Earthquake types	
4		Overview of plate tectonics; Earthquake source mechanisms; Source models; Types of faults; Activity and fault studies	
5		Concepts of magnitudes and intensity, earthquake size, different magnitude scales and relations	
6		Earthquake recording instrumentations; Concept of seismograph, Seismic station: Sensors and data loggers; Mechanical and digital sensors; Build your own seismograph,	
7		Interpretation of Seismic Records - acceleration, velocity and displacement; Frequency and Time Domain parameters: Response Spectra and Spectral parameters; Epicenter and magnitude determination	
8		Instruction to seismic zones and codes, Global and National seismic hazard assessment mapping programs	
9		Midterm exam	
10		Seismic analysis: linear static, linear dynamic, nonlinear static, nonlinear dynamic	
11		Equivalent static method of seismic analysis	
12		Equivalent static method of seismic analysis	
13		Torsional analysis of structures subjected to the earthquake	
14		Reduction of the earthquake acceleration: base isolations, dampers	
15		Final Exam	