



The Hashemite University
Faculty of Engineering
Civil Engineering Program
Course Syllabus



Course Title: Introduction to earthquake engineering **Course Number:** 110401525
Designation: Elective **Prerequisite(s):** 110401315
Instructor: E. Yousef Almashakbeh **Instructor's e-mail:** yousefalmashakbeh@hu.edu.jo
Office Hours: Announced on the Moodle.

Textbook:	Paulay, T. and Priestley, M.J.N. "Seismic Design of Reinforced Concrete and Masonry Buildings." John Wiley & Sons, Inc., 1992.
Course Description:	Effects of earthquakes on structures and of design of structures to resist earthquake motions; earthquake mechanisms and ground motions; response of structures to earthquake motions; behavior of materials, structural elements and assemblages subjected to earthquakes; principles of earthquake-resistant design practice; soil-structure interaction; and special topics.
Specific Outcomes of Instruction (Course Learning Outcomes)	<ol style="list-style-type: none"> 1. An ability to apply knowledge of mathematics, science, and engineering . (a) 2. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. (c) 3. An ability to identify, formulate, and solve engineering problems . (e)
Important material	<ul style="list-style-type: none"> - Lecture notes - References - Internet resources

References:
- Jordan Seismic Code, First Edition, Amman 2005.

Major Topics Covered and Schedule in Weeks:

Topic	# Weeks	# Contact hours*
Introduction to earthquake engineering	2	6
Introduction to earthquake seismology	3	9
Dynamics of structures – linear analysis	3	9
Dynamics of structures – nonlinear analysis	2	6
Design response spectra	2	6
Method of analysis – Force based (equivalent lateral force)	2	6
beam, column and joint design issues	1	3
Total	15	45

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
<i>General Engineering Student Outcomes</i>		



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(a)	An ability to apply knowledge of mathematics, science, and engineering	H
(b)	An ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	H
(d)	An ability to function on multidisciplinary teams	
(e)	An ability to identify, formulate, and solve engineering problems	H
(f)	An understanding of professional and ethical responsibility	
(g)	An ability to communicate effectively	
(h)	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	A recognition of the need for, and an ability to engage in life-long learning	
(j)	A knowledge of contemporary issues	
(k)	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	

H=High, M= Medium, L=Low

Course Policy

- The course will follow selected subjects as listed on the course schedule. Additional lecture notes and examples will be given and discussed in class as much as time permits.
- Course Website (Moodle): <http://www.mlms.hu.edu.jo/>. Students are asked to check the website regularly for announcements.
- Students are responsible for the reading assignments from the text and handouts
- Students are responsible for following up the lecture materials
- Students are responsible for reading additional information and examples in order to understand the materials discussed in the lectures.
- Homework should be submitted on time and you may work together on your homework, but your final product should be your individual work.
- Homework must be done on high quality paper with neat sketches. Neatness will count and messy unorganized problems will reduce credit and may require rework. When more than one page, homework should be stapled and numbered
- If you miss more than 15% of classes you will automatically fail the class.
- The following grading scale will be applied to each students accumulated course metric values:
100% - 90% A+, 90% - 85% A, 85% - 80% A-, 80% - 75% B+, 75% - 72% B, 72% - 68% B-, 68% - 65% C+, 65% - 60% C, 60% - 55% C-, 55% - 50% D+, 50% - 45% D, 45% - 0% F

Prepared By: E. yousef almashakbeh

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