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Department of Building Engineering	
Earthquake Resistant Building Design (68411)	
Total Credits	**3**
major compulsory	
Prerequisites	P1 : Design of Reinforced Concrete Structures II (61412) OR Architectural Structural Systems I (68421)

Course Contents

Introduction to Seismology, Site effect factors. (Local geology and soil conditions), Introduction to Earthquake Engineering and Structural Dynamics, Dynamic response of structures, The influence of architectural and structural configuration on seismic performance of Buildings, Eccentricity and torsional consequences in structures, Seismic forces and building codes, Seismic design of reinforced concrete frames, Seismic design of reinforced concrete shear walls, Special topics on earthquake engineering) seismic retrofit and upgrading fundamentals,..etc).

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	1. Understanding the phenomenon of earthquakes: causes, seismic waves, earthquake hypocenters and epicenters, types of earthquakes, types of tectonic faults, ground motion characteristics, the scale of earthquakes and the seismicity of Palestine.	J	10 %
2	2. Understanding the importance of local geology and site conditions on the seismic performance of buildings (faulting systems, seismic amplification, landslides and liquefaction), and developing knowledge to avoid their effects.	C	15 %
3	3. Understanding the mechanisms of earthquakes on buildings, the dynamic response of structures and their dynamic modes.	C	15 %
4	4. Understanding the seismic performance of buildings and the effect of architectural and structural configurations on the seismic vulnerability of buildings in general and of common Palestinian buildings in particular.	E	20 %
5	5. Developing knowledge of seismic building codes and the earthquake design of buildings in general and common Palestinian buildings in particular.	C	25 %
6	6. Understanding the reinforcement concept and reinforced concrete details of the structural elements of the frames and sheer walls structural elements.	K	15 %

Textbook and/ or Refrences

1. Architectural and structural configuration and seismic Performance of Buildings, Dabbeek Jalal, 2010. 2- T. Paulay, M. Priestly,. "Seismic Design of Reinforced concrete and Masonry Buildings". John Wiley and Sons, INC 3. ( ) - Add to Doucet book and the references listed above have a cylinder containing a number of topics, including: IBC, UBC-97- - Codes FEMA 303, FEMA 302, FEMA 274, FEMA 273 - SAP Manual 2007 :SAP 2000, version 14.2.4 - There are electronic files will be provided to students through the Learning platform, or through the Urban Planning and Disaster Risk Reduction Center at the University of An-Najah National. www.najah.edu.

Assessment Criteria	Percent (%)
First Exam	15 %
Second Exam	15 %

Quizzes	5 %
Homeworks	5 %
Projects	20 %
Final Exam	40 %

Course Plan

Week	Topic
1 &2	Introduction to Seismology
3	Site effect factors and Introduction to Earthquake Engineering and Structural Dynamics
4	Site effect factors and Introduction to Earthquake Engineering and Structural Dynamics
5	Introduction to Earthquake Engineering and Structural Dynamics
6 &7	Seismic forces and building codes and First Exam
8	Dynamic response of structures.
9	Dynamic response of structures.
10 &11	The influence of architectural configuration on seismic performance of Buildings.
12	Eccentricity and torsional consequences in structures
13	Eccentricity and torsional consequences in structures and second exam
14	Seismic design of reinforced concrete frames
15	Seismic design of reinforced concrete shear walls
16	Final Exam