

Higher Institute of Earthquake studies and Research

COURSE : Strong ground motion
CONTACT HOURS: 6 hours weekly

Text books & References:

Description:

The course is 11 chapters. It starts by the elementary principals of seismology, then the properties of strong ground motion, and their parameters, the recording systems and the processing methods. The next chapters present the topics of seismic response in sites, and buildings, measurement methods and processing, the seismic risk and vulnerability. A chapter on the topic of the site selection for critical constructions. The last chapter discusses the topics of seismic hazard assessment.

Aims & Objectives:

The purpose of this course is to present the essential theoretical background of the strong ground motions and their effects on sites and buildings.

Syllabus:

Chapter 1: The elementary principals of seismology
Chapter 2: The properties of strong ground motion, and their parameters
Chapter 3: The recording systems of strong ground motion
Chapter 4: The processing methods (1)
Chapter 5: The processing methods (2)
Chapter 6: A program for signal processing
Chapter 7: The seismic site response
Chapter 8: The seismic building response
Chapter 9: The seismic risk and vulnerability
Chapter 10: The integration of earthquake sciences with the geological and geophysical methods in the site selection for critical constructions
Chapter 11: The seismic hazard assessment methods

Course Outline:

Week 1: The elementary principals of seismology
Week 2: The elementary principals of seismology
Week 3: The properties of strong ground motion, and their parameters
Week 4: The properties of strong ground motion, and their parameters
Week 5: The recording systems of strong ground motion
Week 6: The processing methods (1)
Week 7: The processing methods (2)
Week 8: A program for signal processing
Week 9: The seismic site response
Week 10: The seismic building response
Week 11: The seismic risk and vulnerability
Week 12: The integration of earthquake sciences with the geological and geophysical methods in the site selection for critical constructions
Week 13: The seismic hazard assessment methods
Week 14: field application
Week 15: discussion of application reports

Instructional Methodology & Teaching Resources:

Lectures, Lab for computer processing, Field applications

Head of Department:

Date:

Vice dean:

Date:

Dean:

Date: