

Higher Institute of Earthquake studies and Research

Department: Earthquake Structural Engineering
Course: Advanced Math - Modeling and Numerical Analysis
Hours: (2 Hours Theoretical+2hours Practical) Weekly
Teaching Staff:

Syllabus:

Chapter 1: Introduction
Chapter 2: Applied multivariable mathematics.
Chapter 3: Advanced mathematics for physical sciences
Chapter 4: Numerical Linear algebra
Chapter 5: Numerical modeling and discretization of structural systems.
Chapter 6: modeling techniques
Chapter 7: Analysis procedures
Chapter 8: Solutions and methods of analysis

Course Outline:

Week 1: Introduction
Week 2 + Week 3: Applied multivariable mathematics.
Week 4 + Week 5: Advanced mathematics for physical sciences
Week 6 + Week 7: Numerical Linear algebra
Week 8: Numerical modeling and discretization of structural systems.
Week 9: modeling techniques
Week 10: Analysis procedures
Week 11: Solutions and methods of analysis
Week 12: examples

Instructional Methodology & Teaching Resources:

Lectures, examples, applications

Head of Department:

Date:

Vice Dean: o

Date:

Dean: o

Date: