

## Goals and course structure

The course aims at providing the students with the essential knowledge and skills to face most common seismology problems in engineering and applied geophysical practice. The course splits into two main blocks. In the first module, hints of theoretical seismology are provided, with a special focus on elastic wave propagation, e.g. body and surface wave solution, source representation, attenuation; in the second module, more specialised topics of engineering interest are discussed, such as intensity measures, ground motion prediction equations, seismic hazard assessment (deterministic and probabilistic) and microzonation analysis.

## Practicum

The course is complemented by laboratory in-class activity, a number of selected readings and homework assignments, with a focus on the use of the computer to solve simple problems of seismological interest.

## Prerequisites

Advanced calculus and linear algebra are useful, although not a requirement for the course. The course lab will make use of Python language for some exercises, therefore some familiarity with computer programming is recommended.

## Qualification

The course is concluded by both a practical exercise and a written exam. The practical part consists in the elaboration of a specific topic, freely excerpt from the course program and further developed by using ad-hoc scientific literature. The student is expected to present his elaboration to the class and to the examiner by means of a brief slide show (10min. plus some time for questions). The written exam consists of a multiple-choice test and the solution of an exercise.

## Grading

ACTIVITIES	PERCENTAGE
Class participation	10%
Project presentation	30%
Final Exam	60%

## Reference textbooks

- Stein S., and M. Wysession. An Introduction to Seismology, Earthquakes, and Earth Structure. 1st ed. Malden, MA: Blackwell, September 2002. ISBN 9780865420786.
- Kramer, S.L., Geotechnical Earthquake Engineering, Prentice Hall, 1996, ISBN 0133749436

## Note

The instructor reserves the right to make changes to this syllabus as necessary.