



UE Engineering seismology

 ECTS
6 credits

 Component
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)

 Semester
Automne

- > **Teaching language(s):** French
- > **Open to exchange students:** Yes
- > **Code d'export Apogée:** PAX9RIAA

Presentation

Description

The Engineering Seismology course aims to provide students with an overview of the latest issues and methods for quantitative estimation of seismic hazard and risk. A basic knowledge of seismology is required. The course develops these specific topics: seismic wave radiation at the earthquake source, wave propagation and attenuation in the Earth's crust, wave amplification in the subsurface soils (site effects), empirical (Green's functions, ground-motion models GMPE/GMM) and numerical methods for the prediction of strong motions (with a particular emphasis on uncertainties), probabilistic seismic hazard assessment (PSHA) that combines earthquake recurrence models and ground-motion models, vulnerability of buildings to seismic shaking and their dynamic response, and the specificities of the urban environment. The course addresses these topics with a physical approach (understanding, measurement and quantification of phenomena) but also with a regulatory approach (consideration of these phenomena in seismic standards, microzonation).

Course parts

UE Engineering seismology - CMTD

Lectures (CM) & Teaching Unit (UE)

48h

Recommended prerequisites

Basic knowledge of seismology, tectonics, statistics.

Period : Semester 9

Additional information

Responsable du module: Pierre-Yves Bard

Useful info

Place

> Grenoble

Campus

> Grenoble - Saint-Martin d'Hères