

## 26447 - Geological Hazards

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 26447 - Geological Hazards

**Faculty / School:** 100 - Facultad de Ciencias

**Degree:** 588 - Degree in Geology

**ECTS:** 6.0

**Year:** 4

**Semester:** Second semester

**Subject type:** Compulsory

**Module:**

### 1. General information

Geological hazards refer to the damage caused by geological processes to humans, their properties and activities. The main objective of geohazard analysis is to prevent or reduce such damage in an efficient and cost-effective manner. It is therefore a discipline with a prominent role in the exercise of the geologist's profession and in its service to society.

The main objective of the subject is to know: (1) the main hazardous geological processes; (2) their dynamics, effects and evidence related to their activity; (3) methodologies for hazard and risk assessment ; and (4) mitigation measures.

The goals are aligned with the SDG on ending poverty.

### 2. Learning results

Knows the main concepts and methodologies used in geohazard analysis.

Is able to interpret the activity of potentially hazardous processes in the past from the study of the geologic and human record, as well as to analyse their spatial-temporal distribution and magnitude-frequency relationships

Make predictions with a proven degree of reliability about the behaviour of potentially dangerous processes in the future

Knows the main mitigation measures and is able to assess their suitability in each case.

Can convey orally and in written form knowledge, hypotheses and interpretations of aspects related to geological hazards.

### 3. Syllabus

Introduction to geological hazards

Seismic risk

Volcanic risk

Risk of landslides

Risk of avalanches

Flood risk

Subsidence risk

Risk of soil erosion

Expansive clays

Risks related to coastal dynamics

Wind risk

### 4. Academic activities

The subject will consist of 30 theoretical classes, seminars with a total duration of 5 hours, 3 field days and 5 practical sessions

of 2 hours. Students will carry out and present bibliographic works that will be assigned at the beginning of the term.

## 5. Assessment system

**Written test** on knowledge imparted in theoretical classes, with long and short answer questions and a test of identification of geological elements related to the risks in slides. It represents 60% of the final grade and it will be necessary to achieve a grade equal or higher than 5 out of 10 to pass the subject.

Elaboration, exposition and defence in seminars of a **Bibliographic Work** on a part of the theoretical program For the presentation (10-15 minutes) students will prepare a power point presentation. Evaluation according to quality of papers and presentations. It represents 10% of the final grade.

Case studies in **Office Practices**. Evaluation based on the quality of the work performed. It represents 15% of the final grade.

**Field Practices**. Evaluation through attendance control and review of field notebooks.

It will represent 15% of the final grade.

Students will be entitled to a global assessment test on the same date as the written test.

This test, both in the first and in the second call, will include the evaluation of all the activities and will consist of a written exam.

## 6. Sustainable Development Goals

1 - End of Poverty