

28335 - Natural Risks Analysis

Syllabus Information

Academic year: 2024/25

Subject: 28335 - Natural Risks Analysis

Faculty / School: 103 - Facultad de Filosofía y Letras

Degree: 419 - Degree in Geography and Land Management

ECTS: 6.0

Year:

Semester: Second semester

Subject type: Optional

Module:

1. General information

Natural hazards are addressed from their genesis and development in potentially dangerous natural processes, analyzing human vulnerability to them and management and planning measures. From this approach, the specific goals of are the following:

- To know the conceptual and methodological foundations for the analysis of natural hazards.
- Reflect on hazard processes and the exposure and vulnerability of potentially affected territories.
- Manage tools for the identification, characterization, prediction, assessment and mapping of natural hazards.
- Know and compare different natural risk prevention and management systems, assessing their efficiency in mitigation.

These approaches and goals are aligned with the following SDGs: 3 (goals 3.9 and 3.d), 6 (6.3 and 6.6), 11 (11.5), 13 and 15 (15.1)

2. Learning results

The student, in order to pass this subject, must demonstrate the following results....

- Accurately apply the basic concepts, terms and techniques of natural hazards analysis
- Identify the main connections of natural hazards with the natural processes and dynamics of the planet - Argue the importance of natural hazards in human societies
- Identify, analyze and assess the activity of potentially hazardous natural processes
- Compare risk factor and natural hazard classification systems
- Describe and apply methodologies for spatial and temporal prediction of potentially hazardous natural processes - Plan different models and measures for the management, forecasting and prevention of natural hazards
- Describe and analyze extreme natural events and processes
- Review and develop natural hazard mapping
- Create reports on potential risk situations

3. Syllabus

The program of the course consists of the following topics:

1. Fundamentals of natural risk analysis and management: concepts, risk typology, methodologies, management principles, forecasting and prevention systems, natural risks in land use planning.
2. Meteorological and climatic risks: related to extreme temperatures, precipitation or its absence, wind.
3. Hydrological risks: floods, low water levels, marine processes.
4. Risks related to internal geodynamics: volcanism, earthquakes, tsunamis.
5. Risks linked to external geodynamics: avalanches, slope processes, subsidence, other geomorphological processes.
6. Other natural hazards: cosmic, physical, chemical, biological.

4. Academic activities

The subject has a theoretical-practical orientation. The field work will be carried out in two separate sessions at time. Individual practical work on a risk situation will be supported by personal tutoring sessions. The program includes the following activities:

- Sessions of theoretical expositions, in the form of master classes developed through a participative dynamic
- Practical case presentation sessions, with practical problems to be solved in groups, videos and presentations of relevant extreme events followed by discussions.

- Field work
- Tutored practical work for a risk analysis and assessment report
- Personal work
- Assessment tests.

5. Assessment system

I Call for Proposals

a) Continuous assessment system

To pass the subject they must submit an individual report on the field work and case studies, including participation in a case forum. They will also make a public presentation of a practical work on a risk situation and on an extreme event. The evaluation will be completed with a learning quiz or exam.

Criteria:

- Quiz: correction of content and written expression.
- Field work: correctness of contents and use of concepts, correct written presentation and contribution of graphic material.
- Case study forum: critical skills in case selection and tool handling
- Practical work: correctness of contents and use of concepts, correct presentation and use of tools b) Global assessment test

Learning quiz of theoretical knowledge (40%) and practical knowledge (60%). To pass the subject, must pass both exercises.

Assessment criteria: correctness of content, written expression, use of tools.

II Round II Global assessment: identical to that of the first call.

6. Sustainable Development Goals

- 3 - Good Health & Well-Being
- 13 - Climate Action
- 15 - Life on Land