

Información del Plan Docente

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| Academic Year | 2017/18 |
| Faculty / School | 100 - Facultad de Ciencias |
| Degree | 296 - Degree in Geology |
| ECTS | 6.5 |
| Year | 4 |
| Semester | Second semester |
| Subject Type | Compulsory |
| Module | --- |

1.General information**1.1.Introduction****1.2.Recommendations to take this course****1.3.Context and importance of this course in the degree****1.4.Activities and key dates****2.Learning goals****2.1.Learning goals****2.2.Importance of learning goals****3.Aims of the course and competences****3.1.Aims of the course****3.2.Competences****4.Assessment (1st and 2nd call)****4.1.Assessment tasks (description of tasks, marking system and assessment criteria)****5.Methodology, learning tasks, syllabus and resources****5.1.Methodological overview**

Geological risk refers to the damage caused by geological processes on the human environment, including casualties, injuries and economic losses. The main objective of the geological risk analyses is to provide adequate knowledge and tools for the efficient and cost-effective prevention and/or reduction of the potential social and economic losses. In the current scenario, in which detrimental effects related to natural disasters are rapidly increasing, geologists are key actors in the design and implementation of mitigation policies. The subject has an outstanding importance in the professional activity of applied geologists and their societal service.

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The aim of this subject is to gain theoretical and methodological basis to develop basic geological risk analyses: (1) Identify and map geological evidence of hazardous geological processes. (2) Predict their spatial-temporal distribution. (3) Construct magnitude and frequency relationships. (4) Select adequate mitigation measures.

The learning program, which includes theoretical lectures, seminars, practical sessions, field trips and presentations given by the students, has been designed to achieve the following goals:

- Acquisition of sufficient theoretical and practical background to develop basic hazard and risk analyses.
- Ability to obtain information on hazardous geological processes from the field, remote-sensed images and databases.
- Interfacing with key bibliographic resources.
- Practising the oral and written presentation of working hypotheses, data and interpretations.

5.2.Learning tasks

The program includes the following learning activities:

- Theoretical lectures
- Talks given by the lecturer in English
- Presentations on theoretical topics by the students
- Lab practical sessions
- Field trips (4 days)

5.3.Syllabus

- Introduction to the geological hazards
- Seismic hazard
- Volcanic hazard
- Landslide hazard
- Avalanche hazard
- Flooding hazard

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- Subsidence hazard
- Soil erosion
- Expansive clays
- Hazards related to coastal activity
- Eolian hazards

5.4. Course planning and calendar

The program includes theoretical lectures (30 hours), seminars (10 hours), five lab practical sessions (2 hours each), and field trips (4 journeys).

The dates, time table and venue will follow the schedule designed and announced by the Department of Earth Sciences and the Faculty of Science.

5.5. Bibliography and recommended resources

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|-----------|--|
| BB | Alexander, David.. Natural disasters / David Alexander . Reprinted London : Routledge, 2002. |
| BB | Bell, Frederic Gladstone. Geological hazards : their assessment, avoidance, and mitigation / F.G. Bell . London : Spon, 2003 |
| BB | Coch, Nicholas K.. Geohazards : natural and human / Nicholas K. Coch . Englewood Cliffs (New Jersey) : Prentice Hall, cop. 1995 |
| BB | Geomorphological hazards and disaster prevention / [edited by] Irasema Alcántara-Ayala , Andrew S. Goudie Cambridge : Cambridge University Press, 2010 |
| BB | Geomorphology for engineers/ Edited by P. G. Fookes, E. M. Lee, G. Milligan . Dunbeath : Whittles publishing, 2005 |
| BB | Keller, Edward A.. Riesgos naturales : procesos de la Tierra como riesgos, |

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desastres y catástrofes / Edward A. Keller ,
Robert H. Blodgett . - [1ª ed.] Madrid :
Pearson, D. L. 2007

BB

Landscapes and landforms of Spain /
Francisco Gutiérrez, Mateo Gutiérrez,
editors . Dordrecht [etc.] : Springer, [2014]

BB

Murck, Barbara W.. Dangerous earth : an
introduction to geographic hazards /
Barbara W. Murck, Brian J. Skinner,
Stephen C. Porter . New York [etc.] : John
Wiley, cop. 1997

BB

Riesgos geológicos : recoge las
exposiciones del Cuadro de Profesores del
I Curso de Riesgos Geológicos, celebrado
en Madrid, en noviembre de 1987 Madrid :
Instituto Geológico y Minero de España,
D.L. 1988

BB

Riesgos naturales / Francisco Javier
Ayala-Carcedo, Jorge Olcina Cantos
(coordinadores) . - 1a. ed. Barcelona :
Ariel, 2002