

## 25220 - Natural risks

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 25220 - Natural risks

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 277 - Degree in Environmental Sciences  
571 - Degree in Environmental Sciences

**ECTS:** 6.0

**Year:** 3

**Semester:** First Four-month period

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The learning and teaching methodology developed in this course is aimed to promote the attainment of its objectives. A wide range of teaching and learning activities are implemented, such as interactive lessons, practice sessions, individual or group activities, supervised assignments, and autonomous work and study. Extensive material will be available via the Moodle site of the course. This offers a variety of resources including a repository of the lecture notes used in class as well as other forms of course-specific complementary materials.

#### 4.2.Learning tasks

This course is organized as follows:

- **Lectures:** in these sessions, conceptual and methodological aspects of the program will be presented, alternating the exhibition of PowerPoint presentations, with access to web pages in which illustrative examples related to the topic in the focus of study appear. The students will have available in the ADD of complementary material (articles, linkage of web pages, exercises, etc.) and will have to consult the same way the recommended bibliography.
- **Practice sessions:** they will take place in the computer classroom. Beginning every session the necessary information will be facilitated to the student to carry out the tasks to be developed in the practice, and in case the above mentioned practice has to join to the briefcase of learning, additional information about how it will have to appear. The practices will include, between others: comment and critical evaluation of different cartographies of

susceptibility, hazard and risk, compilation and evaluation of information about different events, calculation of maximum expected water throughflow for a return-period, identification and cartography of areas exposed to floods, making of maps of susceptibility to slope processes, maps of probable areas of avalanches, etc.

- **Supervised assignment:** In groups of 4 students. The assignment will refer to a natural event happened in the past that has caused damages to the society. The general subject-matter (not the concrete case of study, which will be able to be chosen by the components of the group of work) will be assigned by drawing, and the paragraphs that will have to be contemplated in the same one, will be facilitated to the students.
- **Tutorials:** They are implemented to help the students to carry out the works and exercises that they must solve individually or in group, and also as a help to solve doubts related with the theoretical and practical program of the course.

### 4.3.Syllabus

This course will address the following topics:

- Topic 1. Natural Risks: conceptual and methodological aspects.
- Topic 2.The natural risks in territory management.
- Topic 3. Risks associated with slope processes.
- Topic 4. Climatic risks.
- Topic 5. Geoclimatic risks: floods.
- Topic 6. Risks associated to fire.
- Topic 7. Seismic risks.
- Topic 8. Volcanic risks.
- Topic 9. Risks associated to tsunamis.
- Topic 10. Risks associated with subsidence.

### 4.4.Course planning and calendar

Activity / Week	1	2	3	4	5	6 <sup>(1)</sup>	7	8	9	10 <sup>(2)</sup>	11	12	13	14	15
<i>Face-to-face Activity</i>															
Theory	2	2	2	2	1	2	2	1	2	2	2	2	2	2	2
Problems			2	2			2				2	2	2	2	
Laboratory		2			2	2		2	2	2					
Group work															
Field work														4	
Tutorials ECTS															
Exam															
<i>Non face-to-face activities</i>															
Individual work	3	4	4	4	3	4	4	4	3	4	4	4	4	2	4
Group work					2			2		2		2			
<b>TOTAL</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>7</b>	<b>10</b>	<b>8</b>	<b>10</b>	<b>8</b>	<b>10</b>	<b>4</b>

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this

course will be provided on the first day of class or please refer to Escuela Politécnica Superior de Huesca website (<http://eps.unizar.es/academico/horarios-ccaa>) and Moodle.

#### 4.5. Bibliography and recommended resources

- BB** Keller, Edward A.. Riesgos naturales : procesos de la Tierra como riesgos, desastres y catástrofes / Edward A. Keller , Robert H. Blodgett . [1ª ed.] Madrid : Pearson , D. L. 2007
- BB** Riesgos naturales / Francisco Javier Ayala-Carcedo, Jorge Olcina Cantos (coordinadores) . 1a. ed. Barcelona : Ariel, 2002
- BC** Bryant, Edward A.. Natural Hazards / Edward Bryant . Cambridge [etc.] : Cambridge University Press, 1991
- BC** Calvo García-Tornel, Francisco. Sociedades y territorios en riesgo / Francisco Calvo García-Tornel . Madrid : Ediciones del Serbal, 2001
- BC** Catálogo nacional de riesgos geológicos = Geological hazards catalogue : with english summary / [Francisco J. Ayala Carcedo...[et al.] . Madrid : Instituto Tecnológico Geominero de España, 1988
- BC** Dagonne, Andrée. Les risques naturels : la cindynique / Andrée Dagonne, René Dars . 2e. ed. mise a jour Paris : Presses Universitaires de France, 2001
- BC** Ledoux, Bruno. La gestion du risque inondation . Londres [etc.] : Editions TEC & DOC, cop. 2006
- BC** 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
- BC** Nuhfer, Edward B.. Guía ciudadana de los riesgos geológicos : Guía para comprender los riesgos geológicos, incluyendo suelos expansivos, asbestos, radón, terremotos, volcanes, deslizamientos, subsidencia, inundaciones y riesgos costeros / Realizado por el Instituto Americano de Geólogos profesionales ; Autores Edward B. Nuhfer, Richard J. Proctor, Paul H. Moser ; con Jhon E. Allen... [et al.] ; adaptado al español por José L. Barrera... [et al.] ; editado en versión española por Luis Suárez y Manuel Regueiro . Madrid : Colegio oficial de Geólogos de España, D.I. 1997
- BC** Ortega Domínguez, Ramón. Manual de gestión del medio ambiente / Ramón Ortega Domínguez, Ignacio Rodríguez Muñoz . - 4a. ed. rev. y act. Madrid : Mafre, 2000
- BC** Riesgos naturales y desarrollo sostenible : impacto, predicción y mitigación / F.J. Ayala Carcedo ... [et al.] (eds.) ; [Salvador Ordoñez Delgado ... [et al.]] . [1ª ed.] Madrid : Instituto Geológico y Minero, D. L. 2007
- BC** Smith, Keith. Environmental Hazards : Assessing risk and reducing disaster / Keith Smith . - 3ª ed., 2ª reimp. London ; New York : Routledge, cop. 2003

#### LISTADO DE URLs:

Olcina, J., Zamora, R. (2000). Los riesgos naturales a través de la red Internet. Recursos didácticos y de investigación. En Boletín de la Asociación de Geógrafos Españoles, 30, pp. 193-205  
[\[https://dialnet.unirioja.es/servlet/articulo?codigo=1122923\]](https://dialnet.unirioja.es/servlet/articulo?codigo=1122923)

The updated recommended bibliography can be consulted in: <http://psfunizar10.unizar.es/br13/egAsignaturas.php?id=10978>