Universidad Zaragoza

Academic Year/course: 2022/23

66704 - Global change and management of natural risks

Syllabus Information

Academic Year: 2022/23
Subject: 66704 - Global change and management of natural risks
Faculty / School: 103 - Facultad de Filosofía y Letras
Degree: 328 - Master's in Land and Environmental Planning
ECTS: 6.0
Year: 1
Semester: Annual
Subject Type: Optional
Module:

1. General information

1.1. Aims of the course

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1.2. Context and importance of this course in the degree

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1.3. Recommendations to take this course

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2. Learning goals

2.1. Competences

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2.2. Learning goals

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2.3. Importance of learning goals

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3. Assessment (1st and 2nd call)

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

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4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of

teaching and learning tasks are implemented, such as participative sessions, practical exercises, individual or group activities, guided activities, field work and autonomous work.

Students are expected to participate actively in the class throughout the course.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum.

4.2. Learning tasks

The course includes the following learning tasks:

- Theory sessions (31 hours).
- Laboratory practices (20 hours).
- Practical activities (30 hours).
- Autonomous work and study (84 hours).
- Assessment tasks (6 hours).

4.3. Syllabus

The course will address the following topics:

Section I. GLOBAL CHANGE

Topic 1. The quaternary frame. Past climate changes

Topic 2. The instrumental period

Topic 3. Change scenarios and environmental impacts

Section II. NATURAL HAZARDS

Topic 4. Types and Risk Management

Topic 5. Climate risks

Topic 6. Hydrological risks

Topic 7. Avalanche risk

4.4. Course planning and calendar

The course is divided into two sections. The first section includes the followig topics: 1, 2, and 3. The second section includes the topics 4, 5, 6 and 7.

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the *?Facultad de Filosofía y Letras?* web site (https://fyl.unizar.es/horario-de-clases#overlay-context=horario-de-clases)

4.5. Bibliography and recommended resources

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- Riesgos naturales / Francisco Javier Ayala-Carcedo, Jorge Olcina Cantos (coordinadores) . 1a. ed. Barcelona : Ariel, 2002
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- Del Río, S., Cano-Ortiz, A., Herrero, L., Penas, A., ?Recent trends in mean maximum and minimum air temperatures over Spain (1961-2006), Theoretical and Applied Climatology, núm. 109, 2012, p. 605-626
- Jones, P. D., Lister, D., Osborn, T. J., Harpham, C., Salmon, M. y Morice, C. P., ?Hemispheric and large-scale land-surface air temperature variations: An extensive revision and an update to 2010?, Journal of geophysical research. Serie D, Atmospheres, núm. 117, 2012
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- Domonkos, P., Venema, V. Auer, I., Mestre, O. y Brunetti, M., ?The histrical pathway towards more accurate homogeneization?, Advanced Scientific Research, núm. 8, 2012, p. 45-52
- Guijarro, J. A., ?Tendencias de la Temperatura?. En: Fenómenos meteorológicos adversos en España / C. García-Lega y F. Valero (eds.) Madrid : AMV ediciones, 2013, p. 313-323
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- IPCC. The Physical Science Basis / IPCC Cambridge : Cambridge University Press, 2013
- Keller, E. A.. Riesgos naturales : procesos de la Tierra como riesgos, desastres y catástrofes / E. A. Keller Madrid : Pearson, 2007
- Makowsky, K., Wild, M. y Ohmura, A., ?Diurnal temperature range over Europe between 1950-2005?, Atmospheric Chemical Physics, núm. 8, 2008, p. 6483-6498
- Rohde, R., Muller, R. A., Jacobsen, R., Muller, E., Perimutter, S., Rosenfeld, A., Wurtele, J., Groom, D. y Wickham, C., ?A New Estimate of the Average Earth Surface Land Temperature Spanning 1753 to 2011?, Geoinfor Geostat : An Overview, n