

## 66713 - Environmental planning field techniques and case solving

### Información del Plan Docente

Academic Year	2016/17
Academic center	103 - Facultad de Filosofía y Letras
Degree	328 - Master's in Land and Environmental Planning
ECTS	6.0
Course	1
Period	Annual
Subject Type	Optional
Module	---

### 1. Basic info

#### 1.1. Recommendations to take this course

#### 1.2. Activities and key dates for the course

### 2. Initiation

#### 2.1. Learning outcomes that define the subject

#### 2.2. Introduction

### 3. Context and competences

#### 3.1. Goals

#### 3.2. Context and meaning of the subject in the degree

#### 3.3. Competences

#### 3.4. Importance of learning outcomes

### 4. Evaluation

### 5. Activities and resources

#### 5.1. General methodological presentation

The learning and teaching methodology developed in the course is aimed to promote the attainment of its objectives. A wide range of teaching and learning activities is implemented, such as interactive lessons, practical exercises, individual or group activities, directed activities, field work and private study.

A high level of student participation will be required from all students throughout the course.

Extensive material will be available *via* the Moodle site of the course. This offers a variety of resources including a

## **66713 - Environmental planning field techniques and case solving**

repository of the lecture notes used in class, a course syllabus as well as other forms of course-specific materials, including a discussion forum.

### **5.2.Learning activities**

Lecture sessions: 10 hours

Practical activities: Interactive, individual or group activities: 10 hours

Directed activities: 10 hours

Field work: 30 hours

### **5.3.Program**

Introduction : presentation of the subject

Unit1. Field techniques for the analysis of hydro- geomorphological processes in semiarid areas and the natural environment planning .

unit2. Field techniques for the analysis of hydro- geographical processes and the natural environment planning .

unit3. Field techniques for the analysis of biogeographical and dendrochronological processes and the natural environment planning .

Item 4. Field techniques for the analysis of geomorphological processes in mountain areas and the natural environment planning .

Item 5. Field techniques for locating , measuring and georeferencing of natural processes in relation to the natural environment planning .

### **5.4.Planning and scheduling**

The course is divided into five thematic units. Each unit includes both lecture sessions and practical activities. Each unit runs during three sessions (2 hours/session) of the term. In April/May the students and lectures have a field trip (three days in the field).

Development of classroom activity during the months of April and May. The activity of the subject just definitively after the assessment test of the theoretical part.

The lecture units and practical activities take place in a classroom with capacity for 18 students, 12 computers with Internet access, projector and blackboard.

Fieldwork will take place in different parts of the Aragonese geography with appropriate physical tools and field experience prior (cartography, publications, reports, etc.)

The hydromorphology field will be developed in two nearby rivers but with different dynamics.

Fieldwork referred to dendrochronology be held in ravines (dendrogeomorphology) and forests (dendroecology) Zaragoza environment.

The application of field techniques in biogeography be held in several characteristic ecosystems of the Aragonese territory, present data and previous field experience.

### **5.5.Bibliography and recommended resources**

## 66713 - Environmental planning field techniques and case solving

Augustin, N., Borchers, D.L., Clarke, E.D., Buckland, S.T. y Walsh, M. Spatiotemporal modelling for the annual egg production method of stock assessment using generalized additive models, en *Canadian journal of fisheries and aquatic sciences* 55, 1998, p.2608-2621. . Ottawa : Fisheries Research Board of Canada.

Bennett, Donald P.. Introducción a la ecología de campo / Donald P. Bennett y David A. Humphries ; traducido por Alfredo Cruz Herce ; revisado por Miguel Morey Andreu . - 1a. ed. española, de la 2a. ed. inglesa Madrid : Blume, 1978.

Cámara R., Díaz del Olmo F. y Borja Barrera C. "Muestreo en transecto de formaciones vegetales de fanerófitos y caméfitos (II): estudio de los sabinars de la Reserva Biológica de Doñana" en *Estudios Geográficos*, 74/274, pp. 89-114, 2013

Chao, C.T. y Thompson S.K.: "Optimal adaptive selection of sampling sites." en *Environmetrics* nº 12, pp. 517-538, 2001.

Diaconis, P. y Efron, B.. "Computer intensive method in statistics" en *Scientific American*, nº 248(5), pp. 116-130, 1983

Gürtler, Ricardo. "Estimación de la abundancia: Introducción al muestreo de poblaciones." Trabajo práctico 3 [<http://biolo.bg.fcen.uba.ar/ecologia/TP3.pdf>].

Gutiérrez Elorza, Mateo. Geomorfología climática / Mateo Gutiérrez Elorza Barcelona : Omega, 2001

Larsen, D.P., Thornton, K.W., Urquart, N.S., Paulsen, S.G.. "The role of sample surveys for monitoring the condition of the Nation's lakes". En *Environmental Monitoring and Assessment* 32 (1994), pp. 101-134.

Mapa geomorfológico de Aragón [material cartográfico] / José Luis Peña Monné... [et al.] 255 E. 1:325.000 ; proyec. U.T.M. : Consejo de Protección de la Naturaleza de Aragón, D.L. 2002.

Metodología y práctica de la biogeografía / dirección, coordinación y edición científica, Guillermo Meaza Rodríguez ; [Ma. Eugenia Arozena Concepción...(et al.)] . - [1a ed.] Barcelona : Ediciones del Serbal, 2000.

Moreno, Claudia E. Métodos para medir la biodiversidad / Claudia E. Moreno Zaragoza : CYTED : ORCYT-UNESCO : Sociedad Entomológica Aragonesa, 2000.

Panizza, Mario. Geomorfologia applicata : metodo di applicazione alla pianificazione territoriale e alla valutazione d'impatto ambientale / Mario Panizza . - 1. ed. Roma : La Nuova Italia Scientifica, 1988.

Pedraza Gilsanz, Javier de. Geomorfología : principios, métodos y aplicaciones / Javier de Pedraza Gilsanz ; colaboradores Rosa María Carrasco González...[et al.] Alcorcón, Madrid : Rueda, D.L. 1996.

Stevens, D.L. Jr.. "Implementation of a national environmental monitoring program" en *Journal of Environmental Management*, 42 (1994), pp. 1-29