25211 - Ecology I

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	277 - Degree in Environmental Sciences
ECTS	6.0
Course	2
Period	First Four-month period
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

This subject is offered in the English Friendly form

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 of the subject is based on the following:

Theory lessons. The student will be provided with references and presentations of each chapter of the subject before the

lectures. During theory lessons some students chosen by the teacher will present their view on the lesson, based on their own knowledge and the information provided by the teacher. This information should have been previously studied by the students.

The teacher will give master lectures of each lesson and will question the students. External experts will give specific conferences.

The evaluation of the theory will be completed with two tests (Continuous Evaluation).

The practical part will consist in: (i) a full day field work devoted to ecosystem recognition and (ii) the elaboration of several ecology reports of a field area near Huesca city. These reports will be supervised by the teacher. They will consist in regular team tutorials. Both practical activities will be completed with: (i) computer sessions in order to learn to manage ecologic models, and (ii) lab sessions dedicated to perform different analysis and experiments.

5.2.Learning activities

The program offered to the students to help them achieve the expected results, comprise the following activities:

Theory sessions in the classroom

A presentation of each lesson will be provided, as well as additional references, both available on Moodle platform. This information has to be studied previous to the lecture by the students.

These sessions will comprise student's involvement and master presentation by the teacher. Other sessions will correspond to expert's participation in the subject and seminars presented by students.

Lab and computer practices

A script of the practice will be provided, including on-site and non-on-site activities.

Tutorials

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Individual and team tutorials will be offered to facilitate theory and practice lectures.

Teaching work

Different ecology and environmental lessons will be proposed to the students. They should develop them with teacher's support and present a final report.

5.3.Program

Unit 1. Introduction to Ecology

1 The concept of Ecology. Study object. History

2 Non-equilibrium perspective. Social context

3 The scientific method. System theory. Ecosystem concept. Gaia

4 Ecology and Environment

Unit 2. Physical Environment and Organisms

1 Resource and conditions. Limiting factors

2 Astronomic and geologic context

3 Atmosphere - Oceanic circulation system

4 Climates and microclimates

5 Organisms and radiation

6 Organisms and Temperature

7 Organism and water availability. Ecohidrology

8 Abiotic factors in water and terrestrial environments

9 Terrestrial environments: geomorphology and soil

10 A synthesis on the importance of abiotic factors. Ecology niche concept

11 Time evolution response

12 History biogeography

Unit 3. Populations

1 Population and metapopulation. Conceptual basis

2 Primary and secondary parameters. Tabulation

3 Life cycles

4 Intraspecific competition

5 Population dynamics

6 Growth regulation

5.4.Planning and scheduling

Calendar of on-site lectures and report presentations

The average student should dedicate about 150 h to this 6 ECTS subject.

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Activity and week	1	2	3	4	5	6	7	8	9	10
On-site										
Theory	2	2	2	2	2	1	2	2	2	1
Field work			7				7			
Field work tutorials										
Lab										
Computer practice				2	2	2				
Evaluation						1				1
Non on-site										
Academic work						3	2	3	2	
Study	4	4	5	5	5	3	3	3	3	5
TOTAL	6	6	14	9	9	10	14	8	7	7

Activity and week	11	12	13	14	15	16	17	18	19	TOTAL
On-site	2	2	2	2	1					27
Theory										14

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Field work	3			3						6
Field work tutorials		2	2							4
Lab										6
Computer practice					1			2		5
Evaluation										
Non on-site										10
Academic work	4	5	5	5	4	6	6			75
Study	9	9	9	10	6	6	6	2	0	147
TOTAL										

The lectures calendar will consider the University of Saragossa calendar. Timetable of the subject, tutorials, exams and the affected classrooms can be checked in the School's web page.

5.5.Bibliography and recomended resources

The references of each course will be updated and can be consulted from the library's web.

- BB Begon, Michael. Ecología : individuos, poblaciones y comunidades / Michel Begon, John L. Harper, Colin R. Townsend ; traducido por Miquel Riba Rovira, Raymond Salvador Civil . - 3ª ed. Barcelona : Omega, D.L.1999
- BB Díaz Pineda, Francisco. Ecología I : ambiente físico y organismos vivos / Francisco Díaz Pineda . - 2ª reimp. Madrid : Síntesis, 1989 (reimp. 1996)
- BB Margalef, Ramón. Planeta azul, planeta verde / Ramón Margalef . - [1a. ed.] Barcelona : Prensa Científica, 1992
- BB Rodríguez, Jaime. Ecología / Jaime Rodríguez Madrid : Pirámide, D.L.1999
- BB Smith, Thomas Michael. Ecología / Thomas M. Smith, Robert Leo Smith . - 6a. ed. Madrid [etc.] : Pearson Addison-Wesley, D.L. 2007
- BB Terradas, Jaume. Ecología de la vegetación : de la ecofisiología de las plantas a la dinámica de comunidades y paisajes / Jaume Terradas. Barcelona : Omega, D.L. 2001.