

25250 - Environmental science and sustainability

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	571 - Degree in Environmental Sciences
ECTS	6.0
Course	1
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

Theory sessions in which external expert communications are also included and participation is encouraged.

Practical sessions consist of study work with materials supplied by lecturers.

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5.2. Learning activities

The program offered to achieve the expected results include the next learning activities:

Theory sessions: Lectures introduce the main concepts and lines of the subject. In addition, most difficult issues will be reviewed thoroughly. Bibliography and auto-evaluation tools are provided. Readings and instructions for all practical exercises will be provided on the course website (moodle).

Practical sessions: Practical classes form part of the required activities for this course. If you miss a lecture or tutorial through illness or some other serious reason, it is your responsibility to attend an equivalent class from another stream. Some content and activities will not be available except by physically attending the classes, and missing material will disadvantage you in the course assessment.

5.3. Program

Theoretical Programme

BLOCK 1: Sustainability and environmental science

Topic 1. Introduction: Environmental science and sustainability. Basic concepts, environmental science, ecology, ecologism, sustainability. Critical thinking. Scientific method.

Topic 2. Roots of the environmental crisis. Environment pollution and degradation. Biodiversity decline.

Topic 3. Principles of Ecology: Self- sustaining mechanisms in ecosystems. Ecosystems function. The biomes and aquatic life zones. Self- sustaining mechanisms. Homeostasis, succession, evolution.

Topic 4. Human Ecology: Our changing relationship with the environment. Population growth. Overpopulation. Problems associated.

Topic 5. Principles and practices to create sustainable communities. Challenges. Stabilizing the human population: strategies and ethics. Overcoming barriers.

BLOCK 2: Global environmental issues

Topic 6. Global climate change. Greenhouse effect. Ozone depletion. Ácide deposition. El niño (ENSO).

Topic 7. Aquatic resources. Global water balance. Nonpoint source pollution. Marine waste.

Topic 8. Overexploitation of natural resources. Wild flora and fauna. Mining.

Topic 9. Agriculture. L and use. Fragmentation. Fertilizers and pesticides. Transgenic products.

Topic 10. Renewable, non-renewable and alternative energies. State of the art. Energy and development. Main impacts of energy exploitation. Alternatives.

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instruction																				
Individual work		4	6	4	4	2,5	4	2,5	3	2,5	8	4	2,5	4	5,5	5	8	5		82,5
Group work						1,5		1,5		1,5			1,5	1,5						7,5
TOTAL		8	8	10	8	8	12	6	5,5	7	8	8	10	8	4	7	8,5	8	8	150

5.5. Bibliography and recommended resources

BB- Bernard J. Nebel, Richard T. Wright Ciencias ambientales: ecología y desarrollo sostenible. Pearson Educación, 1999 - 698 páginas

BB- Chiras, Daniel D. Environmental Science. Jones & Bartlett Learning, 2016 - 632 páginas

BB- Goleman Daniel, Inteligencia Ecológica, KAIROS, 2009 ISBN 9788472457010

BB- Leo Smith, Robert; Smith, Thomas M.. Ecología (6ª Ed.), Addison-Wesley, 2008 Isbn 9788478290840

BB- Tyler Miller, George. Ciencia Ambiental: Desarrollo Sostenible. Un Enfoque Integral. Cengage Learning Latin America, 2007 - 323 páginas

BB- Valverde Valdés, Teresa , Cano-Santana, Zenon. Ecología y medio ambiente. Pearson Educación, 2005 - 230 páginas