

28329 - Integrated Analysis of the Natural Environment

Syllabus Information

Academic year: 2023/24

Subject: 28329 - Integrated Analysis of the Natural Environment

Faculty / School: 103 - Facultad de Filosofía y Letras

Degree: 419 - Degree in Geography and Land Management

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Compulsory

Module:

1. General information

The environmental value of natural systems is linked to the great variety of elements that make them up as well as to the close and deep interrelationships between these components.

The main goal of the subject is for students to discover, analyze and value the interactions of the different elements that make up natural systems. They are also expected to know and handle different documentary and statistical sources through which the aforementioned interrelationships can be analyzed.

These approaches and goals are aligned with the following Sustainable Development Goals (SDGs) of the Agenda 2030 Agenda of the United Nations:

- Goal 2: Zero hunger (Objective 2.4)
- Goal 8: Decent work and economic growth (Objective 8.3)
- Goal 9: Industry, innovation and infrastructure (Objective 9.1)
- Goal 11: Sustainable cities and communities (Objective 11.4 and 11.5)
- Goal 17: Partnerships to achieve objectives (Objective 17.16)

2. Learning results

- Recognize and value the complexity and diversity of natural systems
- Select and manage the appropriate sources to analyze each component of the system
- Detect the interrelationships between the different components and their action on the natural system as a whole
- Skillfully employ appropriate methods and techniques for integrated analysis, diagnosis, evaluation and management of the territory land use
- Accurately handle scientific geographic terminology
- Perform responsibly the tasks that correspond to them as members of a work team

3. Syllabus

1. PRESENTATION OF THE NATURAL ENVIRONMENT AS AN INTEGRATED SYSTEM

2. COMPONENTS/FACTORS

- 2.1- Topography
- 2.2- Weather
- 2.3- Lithology, tectonic device and soils
- 2.4- Land cover and land use
- 2.5- Drainage network

3. ELEMENTS

- 3.1- Sources of hydrological data
 - 3.1.1. Gauging stations: data collection and publication.
 - 3.1.2. The CEDEX hydrological database.
 - 3.1.3. The SAIH project.
 - 3.1.4. The Water Information System
- 3.2- Elements of the fluvial regime
 - 3.2.1. Flow availability

3.2.2. Floods and low water levels

3.2.3. Year-to-year irregularity

3.2.4. Seasonal variation of flow rate: the types of regimes

4. ANALYSIS OF THE RESULTS: INTEGRATION OF SYSTEM COMPONENTS

4. Academic activities

Based on the knowledge of the different elements of the natural environment, the aim is to develop the capacity for analysis at through the search for interactions between these components. The territorial unit chosen for this integrated analysis or system analysis is a river basin. The system components are mapped and hydrological data are managed.

Exercises are also carried out to evaluate different hydrological processes (evapotranspiration, runoff, unit hydrographs...).

Types of activities:

- Theoretical and practical sessions
- Field work. Tour of a hydrographic basin.
- Personal study
- Assessment tests. Explained in the corresponding section

5. Assessment system

a) Continuous evaluation system (exclusive of I call)

Test 1. Theoretical and practical knowledge questionnaire.

Various questions, both theory and practical exercises.

Criteria: clarity of exposition, precision in the use of concepts and resolution of practical exercises, synthesis capacity, level of understanding and assimilation of concepts and contents.

Test 2. Delivery of practical work on the analysis of a hydrographic basin

Criteria: adequate use of sources and techniques, quality of the presentation of texts, data sheets, graphs and maps, clarity of exposition, precise use of scientific language, ability to interrelate information, correctness of results.

Test 3. Active participation in the different academic activities.

Criteria: contributions and questions on the topics covered in the theoretical and practical sessions, in the field work, and in the development of the work.

Weighting: Theoretical-practical knowledge questionnaire (20% final grade). Practical work (70%). Participation active in academic activities (10%). In both tests 1 and 2 the grade must exceed 5 points out of 10 in order to pass.

b) Global assessment system (Rounds I and II)

- Theoretical and practical knowledge questionnaire (30% grade). Various questions on the theoretical and practical contents of the program.

- Delivery of practical work on the analysis of a hydrographic basin (70%)

Assessment criteria: Those indicated in the continuous evaluation system.