

26414 - Sedimentary Processes and Environments

Syllabus Information

Academic year: 2023/24

Subject: 26414 - Sedimentary Processes and Environments

Faculty / School: 100 - Facultad de Ciencias

Degree: 296 - Degree in Geology

588 - Degree in Geology

ECTS: 9.0

Year: 2

Semester: Annual

Subject type: Compulsory

Module:

1. General information

1. 1. General Information

The main objective of this subject is to transmit the appropriate knowledge so that the student is able to determine the sedimentary processes and reconstruct the sedimentation environments from the analysis of the facies. The general objectives are:

- Knowledge of sedimentary processes and their genetic significance.
- Description of the different current sedimentary environments, showing their processes and deposits?
- Study of sequences and facies patterns in ancient sediments.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>), specifically, the learning activities planned in this subject will contribute to the achievement of Objective 6.6 of Goal 6, Objective 9.4 of Goal 9, Objective 12.2 of Goal 12, 13.3 of Goal 13 and 14.2 and 14.b of Goal 14.

2. Learning results

- To know the sedimentary processes and their genetic significance.
- Determine the sedimentary processes and the different present-day sedimentary environments, showing their processes, deposits and facies.
- Establish sequences and facies patterns in ancient sediments.
- Determine sedimentary processes and reconstruct the environments and sedimentation media of past geological stages? - Know the applications of facies analysis.
- Present and defend works in public.
- Handle bibliography in Spanish and English.
- Design and develop programs of activities in secondary education in Earth, Natural and Environmental Sciences.

3. Syllabus

Module 1. Sedimentary processes:

- Sedimentary environments and sedimentology;
- Facies analysis;
- Sedimentary processes.

Module 2. Continental sedimentary environments:

- Alluvial fans;
- River environment;
- Lacustrine environment;
- Aeolian sedimentary systems;

- Glacier environment.

Module 3. Transitional sedimentary and marine environments:

- Sedimentation from the coast to the ocean floor;
- Tidal flats;
- Beaches and barrier islands;
- Deltas and estuaries;
- Continental shelves;
- Bioconstructions;
- Continental slope and ocean floor.

4. Academic activities

Master classes: 40 h. Sessions of explanation of the syllabus.

Laboratory practices: 20 h. 10 practical sessions, of 2 h, focused on:

- granulometric, paleocurrent and sedimentary structure analyses;
- interpretation of stratigraphic successions in continental, transitional and marine environments.

Mandatory activity.

Field practices: 30 h. 6 field days:

Depositional facies, sequences and sub environments in continental (3 days) and transitional and marine environments (3 days).

Mandatory activity.

Assessment tests. 9 h.

Personal work includes the study, elaboration of practice reports and elaboration of a seminar (summary of a published work related to the subject) and presented in class

5. Assessment system

Continuous evaluation of the different learning activities and will consist of:

- Examination of the theory syllabus (60%; with the proportion of 65% for modules 1 and 2 and 35% for module 3).
- Assessment of attendance and correctness of laboratory practices (20%);
- Assessment of attendance and correctness of field practices (10%);
- Evaluation of the seminar presentation (10%).

Each of the activities will be graded from 0 to 10, being understood as passed with a grade equal to or higher than 5 points.

However, the overall grade, obtained by applying the proportions indicated above, will be considered.

If the student has not passed any of these activities by continuous evaluation, they will have the opportunity to pass the parts not passed by means of a **global test** in the two official calls, which will consist of:

1. Theoretical exam (60%) in which modules 1-2 will account for 65% and module 3 for 35%.
2. Practical exam to evaluate the knowledge acquired in the laboratory practices (20%) and in the field practices (10%).
3. Elaboration, exposition and individual defence of a topic related to the syllabus of the subject, similar to those proposed for the seminars of the subject (10%).