Universidad Zaragoza

Academic Year/course: 2023/24

26406 - General and Marine Palaeontology

Syllabus Information

Academic year: 2023/24
Subject: 26406 - General and Marine Palaeontology
Faculty / School: 100 - Facultad de Ciencias
Degree: 296 - Degree in Geology
588 - Degree in Geology
ECTS: 9.0
Year: 1
Semester: Second semester
Subject type: Basic Education
Module:

1. General information

The objectives of the subject Basic and Marine Palaeontology are to understand and assimilate the most important and general concepts and theories of Palaeontology, mainly Systematics, Paleoecology, Taphonomy and Evolution, applied mainly to marine faunas, especially invertebrates. It is intended that the student will be able to obtain the maximum information of geological interest from fossils, both in outcrops and in the cabinet.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations () Agenda (https://www.un.org/sustainabledevelopment/es/), specifically, the learning activities planned in this course will contribute to some extent to the achievement of Goals 13 and 14.

2. Learning results

Upon completion of the subject, the student will be able to:

Understand, explain and relate the basic knowledge of Palaeontology, which includes the concept and object of study of this discipline, as well as the fossilization processes and the relationship of Palaeontology with the rest of the geological and biological sciences, with special emphasis on its application to the knowledge of these disciplines.

Be able to explain in a logically ordered way (historically and evolutionarily) the development of life on Earth from its origins to the present day. To work autonomously in the recognition, both in the laboratory and in the field , of the main groups of marine organisms represented in the fossil record. Make observations taphonomic, paleoecological, biostratigraphic and biochronological that are useful to geologists and can be obtained from fossils formed in marine environments.

3. Syllabus

1. The process of fossilization: Fundamentals of Taphonomy.

2. The classification of fossils.

3. Fundamentals of biostratigraphy.

4. Fundamentals of Paleoecology and Paleobiogeography.

5. Pelagic marine environments and their dominant organisms. Introduction. Nektonic organisms: cephalopods and their relationship with marine fishes and reptiles. Planktonic organisms: graptolites.

6. Flat bottom marine environments and their dominant organisms. Introduction. Benthic organisms. Relationships with the substrate. Trilobites. Brachiopods. Bivalve molluscs. Gastropods. Echinoderms.

7. Reef marine environments and their dominant organisms. Introduction. Bioconstructor organisms. Cnidaria and their relationship with algae. Porifera. Bryozoans.

4. Academic activities

1. Participative master classes: 40 classroom hours.

2. Visu laboratory practice and case study analysis: 35 classroom hours.

3. Three days of field practice: 15 hours, including preparation of the report.

-Palaeozoic (Ordovician-Devonian): Herrera -Santa Cruz de Nogueras.

-Mesozoic (Jurassic): Almonacid de la Cuba (Zaragoza)

-Cenozoic (middle-upper Eocene): La Peña reservoir (Huesca).

4. Study of theoretical knowledge for the written test. 70 non face-to-face hours (student's autonomous work and tutorials).

5. Written test (exam). 6 classroom hours

5. Assessment system

In the face-to-face development, the evaluation will consist of a continuous evaluation of the practices and a final test, which must be passed independently

1. Practical exercises during the laboratory practice sessions. They will account for 45% of the grade.

2. Report of field practices. Attendance is mandatory, as is the completion of individual questionnaires. The average grade of these questionnaires, if passed, will represent 10% of the grade.

The global evaluation test will include the same type of exercises as those of the continuous evaluation, assessing the same aspects as in the continuous evaluation . Specifically, the following tests will be conducted and must be passed independently:

1. Global theoretical test (45% of the grade). This test is mandatory for all students.

2. Global practical laboratory test (45% of the grade). Students who have not passed the practices.

3. Preparation of a paleontological field report on a stratigraphic column (10% of the grade). Students who have not passed the field part of the subject.