

26437 - Vertebrate and Human Palaeobiology

Syllabus Information

Academic year: 2023/24

Subject: 26437 - Vertebrate and Human Palaeobiology

Faculty / School: 100 - Facultad de Ciencias

Degree: 296 - Degree in Geology
588 - Degree in Geology

ECTS: 5.0

Year: 4

Semester: First semester

Subject type: Optional

Module:

1. General information

The objectives of the subject are to know the main groups of vertebrates, including hominids, and to relate them systematically and chronologically. The student is expected to know and understand the basic concepts in the methodology of study, know how to interpret the fossil remains of vertebrates, and develop the ability to conduct studies and research that allow them to apply this knowledge to theoretical and practical problems in Geology, Biology, Archaeology and Environmental Sciences.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement:

Goal 13: Climate action

Goal 14: Underwater life

Goal 15: Life of terrestrial ecosystems.

2. Learning results

At the end of the subject, the student will be able to:

- Explain and relate in a clear way the basic concepts in study methodology, systematics and evolution of the main groups of vertebrates, and of human evolution in particular.
- Identify and describe anatomically the elements of the vertebrate skeleton and to determine their taxonomy.
- Conduct surveys and sampling in the field, and identify favourable facies, as well as types of accumulation and taphonomic processes in vertebrates.
- Develop the ability to integrate information from diverse sources, including other related fields such as stratigraphy and sedimentology.
- Synthesize and present their results from their personal work and analysis, as well as from the bibliographic research.

3. Syllabus

The subject develops the following thematic blocks and units:

-Unit 1: Mineralized tissues of vertebrates. Comparative anatomy of the vertebrate skeleton. Morphometry.

-Unit 2: Major groups and events in the evolutionary history of vertebrates.

Origin and first vertebrates. Tetrapods and the colonization of the terrestrial environment. Archosaurs and diversification of the Dinosaurs. Origin and diversification of mammals. Evolution and human dispersion.

-Unit 3: Paleobiological reconstructions and paleoecological analysis of fossil vertebrates. The locomotion through their ichnites and biomechanics.

Diet and paleoenvironmental reconstruction. Life history through palaeohistology. Dating and paleoclimatic reconstructions from micro vertebrates.

4. Academic activities

1. Master class (17 hours).
2. Laboratory practices (18 hours).
3. Problem solving and case studies (5 hours)
4. Special practices (field practices): 2 days in the field.
5. Assessment tests (5 hours)

Throughout the term, both in practical and theoretical classes, we will use bibliography and Internet resources in English.

5. Assessment system

- Theoretical written test (**T**) consisting of questions that require closed answers (multiple choice) and/or questions that require a more extensive development of the subject (essay or free and open response tests). . It will represent 35% of the final grade.
- Practical test (**P**) consisting of exercises/problem solving similar to those developed in the practical classes , both in the field and in the laboratory. It will represent 35% of the final grade.
- Completion of a report, presentation and multimedia defence of a bibliographic work (**S**), on a topic among the proposed to be discussed in seminar sessions. The work will be done individually, following the guidelines and format of presentation that will be marked at the beginning of the term. The time available for the presentation and defence of the work will be 15 to 20 minutes. It will represent 30% of the final grade.

Each of the above items will be graded out of 10 points. The final grade will be the result of applying the following weighting:
 $T \times 0.35 + P \times 0.35 + S \times 0.3$

Each section is passed with a grade equal to or higher than five (out of 10). Each passed part will be saved during the academic year.