

Academic Year/course: 2022/23

26437 - Vertebrate and Human Palaeobiology

Syllabus Information

Academic Year: 2022/23

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

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions and tutorials.

This course is focused on publicizing a course that is of little development during the Geology degree, so the agendas are novel for the student. Therefore the proposed activities are focused on understanding the anatomy of vertebrates, conservation and formation of deposits of fossil vertebrates and systematics of major groups, including hominins.

4.2. Learning tasks

This course is organized as follows:

- **Lectures** (1.7 ECTS: 17 hours). 17 one-hour sessions. In support to face-to-face lectures, basic reference material will be posted on the web <https://moodle2.unizar.es/add/> such as the syllabus of the course, the teaching guide, summaries of the theoretical topics, scripts practices and diverse complementary material.
- **Laboratory sessions** (1.8 ECTS: 18 hours). Nine two-hour sessions. Lectures are complemented with laboratory sessions so that the student will learn and demonstrate methods and analysis used and the results of their application.
- **Seminars** (0.7 ECTS: 7 hours). The students must elaborate an assignment/report (individual) where clearly is demonstrated their ability to work with the literature, orally present and defend the report on issues related to Vertebrate Paleobiology. This includes autonomous work for doing bibliographical research, attending tutorials, and preparing multimedia presentation. In the first sessions bibliographic research work and the teacher responsible for their supervision is assigned.
- **Fieldwork** (0.8 ECTS: 8 hours, 2 field-trip days).
- **Tutorials**. For a better monitoring of the learning process students will be encouraged to attend tutorials with different methods: conventional tutorials, more specific tutorials related to practical work-type seminar and the

possibility of carrying out telematic tutorials will also be offered.

- **Autonomous work and study** (70 hours including that needed for preparing the seminars).
- **Written test** (5 hours).

Teaching and assessment activities will be carried out on site for as long and as much as possible. This scenario could change if safety regulations related to the covid19 crisis recommended online activities.

4.3. Syllabus

This course will address the following topics:

Theory topics

- **The skeleton of vertebrates**
 - The mineralized tissues of vertebrates
 - Comparative anatomy of the skeleton of vertebrates
- **Main events in the history of vertebrates**
 - Craniata, the origin of the head in vertebrates
 - Swimming and predation
 - First land vertebrates
 - Origin of Archosaurs and the Dinosaurs
 - Origin of mammals and Mesozoic mammals
 - Cenozoic large mammals
 - Cenozoic small mammals. Dating and climatic reconstructions
 - Origin of Primates and Iberian and Eurasian Hominoids
 - African hominids
 - Human dispersal in Eurasia
 - Neanderthals and early modern humans in Europe
- **Paleobiological reconstructions and evolutionary analysis of fossil vertebrates**
 - The locomotion of vertebrates through their ichnites and biomechanics.
 - The diet: How to infer the paleoclimate and paleoenvironment with fossil mammals
 - Palaeohistology: the analysis of Life history

Practice topics

- Orientation of a vertebrate and body regions of vertebrates
- The cranial and postcranial skeleton.
- Muscle attachments, joints, biomechanics
- The teeth of vertebrates and diet
- Dinosaur Fossils
- Fossil remains of microvertebrates, biostratigraphy and environmental reconstructions
- Comparative anatomy of the major groups of mammals
- Human Fossils and recognition of the hominid characters

4.4. Course planning and calendar

- Beginning and end of classes: according to the academic calendar established by the Faculty of Sciences and published on the Faculty website.
- Schedules of theoretical and practical classes: according to the schedule established by the Faculty of Sciences and published on the Faculty website.
- Dates of field practices: according to the calendar established by the Commission for the Quality Assurance of the Degree in Geology and which is published on the Department's website.
- Exam dates: according to the calendar established by the Faculty of Sciences published on the Faculty website. The start time of each call will be placed in advance on the website <https://moodle2.unizar.es/add/> Each notice shall include theoretical and practical exams.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences and Earth Sciences Department websites (<https://ciencias.unizar.es>, <https://cienciatierra.unizar.es>)

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26437>