

Introduction to Paleontology

Code: 44790
ECTS Credits: 6

2025/2026

Degree	Type	Year
Paleobiology and Fossil Record	OB	1

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

Generic, as for the degree

Objectives and Contextualisation

Referring to knowledge

- Identify the fundamental concepts in palaeontology: species concepts, taxonomy, systematics and classification, taphonomy, paleoecology, paleobiogeography, paleoclimatology, the theory of evolution, concepts in biostratigraphy.
- Recognize the fundamental methods used in palaeontology: field sampling, main laboratory preparation methods, identification and description methods in the cabinet, main statistical methods in palaeontology, taphonomy and paleoecology methods, biostratigraphic methods.

Referring to skills

- Integrate concepts and methods to apply them to the resolution of a case study in palaeontology.

- Demonstrate analytical and critical capacity towards competing or alternative concepts and methods in a case study in palaeontology.
- Know how to search scientific databases and use the results of texts published in specialized scientific journals to solve a case study in palaeontology.

Learning Outcomes

1. CA01 (Competence) Know how to share knowledge about fossils by working in a multicultural team and in an international context.
2. CA02 (Competence) Demonstrate proactivity and willingness to improve in order to continue learning independently through the use of palaeontology texts.
3. CA03 (Competence) Act ethically in the study of the fossil record with regard to the preservation of cultural and natural heritage that reduces inequalities based on sex and gender.
4. KA01 (Knowledge) Identify fundamental concepts in palaeontology: concepts of species, taxonomy, systematics and classification, taphonomy, palaeoecology, palaeobiogeography, palaeoclimatology, the theory of evolution, concepts in biostratigraphy.
5. KA02 (Knowledge) Recognise the fundamental methods used in palaeontology: field sampling, main preparation methods in the laboratory, identification and description methods in desk research, main statistical methods in palaeontology, taphonomy and palaeoecology, biostratigraphic methods.
6. SA01 (Skill) Integrate concepts and methods for application to the resolution of a case study in palaeontology.
7. SA02 (Skill) Demonstrate analytical and critical capacity regarding competing or alternative concepts and methods in a case study in palaeontology.
8. SA03 (Skill) Know how to search scientific databases and use the results of texts published in specialised scientific journals to perform a case study in palaeontology.

Content

- 1) Evolutionary Theory. Explanation of the main current and past theories on the appearance and disappearance of species and their feedback with fossil evidence. Relation of the evolutionary theory with the methods of classification of fossil organisms. Systematics, taxonomy and phylogeny.
- 2) History of life and the Earth and fundamental principles of the nuclear thematic areas of palaeontology (taphonomy, biostratigraphy, palaeoecology, paleobiogeography and palaeoclimatology) with special emphasis on the role of women in their development.
- 3) Main techniques for studying fossils. Sedimentary contextualization. Numerical models and data treatment. Measurements and current techniques. Software and hardware in the study of fossils.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Analysis of Scientific Papers	10	0.4	
Master Class	35	1.4	
Practical cases study	8	0.32	

Type: Autonomous

Online exercises	10	0.4
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The "Introduction to paleontology" module (6 ECTS) is made up of three blocks, all of them taught by professors from the UAB:

- Evolutionary Theory (2 ECTS)
- History and Fundamental Principles (2 ECTS)
- Study Techniques (2 ECTS)

Each of the blocks is organized into hybrid master classes (which may be both face-to-face and online) generally in sessions of 2 or 3 hours each one. During the bulk of these classes, the theoretical concepts related to the three main blocks will be taught. However, it will also be proposed to carry out more practical and/or applied exercises (as well as the preparation of reports) to try to consolidate the previously explained concepts.

Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

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Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Activities and exercises	20%	12	0.48	CA01, CA02, SA01, SA02, SA03
Attendance and participation	10%	35	1.4	CA01, KA02
Exercises based on theoretical concepts	35%	20	0.8	KA01, KA02, SA01, SA02, SA03
Theory exercises	35%	20	0.8	CA03, KA01, KA02, SA01

Continuous assessment:

30% to 40% Theoretical tests/synthesis.

30% to 40% Exercises based on theoretical concepts.

20% Activities and Exercises.

10% Attendance and active participation in class.

Within the ranges indicated, the percentages could vary for each of the three blocks that make up the module.

Single evaluation:

100% Final exam which will include theoretical questions and possible exercises linked to theory. The intention to undergo a single assessment must be notified to the module coordinator before 09/23/2025. NOTE: The Faculty of Sciences of the UAB considers that the nature of the official postgraduate programs is radically opposed to the meaning of the single assessment and that the implementation of this assessment is detrimental to the student's training and the intrinsic prestige of the programme. Nonetheless, the Permanent Board approves that this module contemplates the possibility of a single evaluation in formal compliance with a prior agreement of the Governing Council.

Bibliography

- Condie, K.C. 2011. Earth as an evolving Planetary System. Academic Press. 574 pp.
- Cowen, R. 2000. History of Life. Blackwell Science. Oxford. 432 p. ISBN0632 04444 6 (56 Cow)
- Dodd, R., Stanton. Jr. 1990. Paleoecology, concepts and applications. John Wiley and Sons.
- Donovan, S.K. (ed.) 1989. Mass Extinctions. Processes and Evidence. Belhaven Press. London. 265 p. ISBN 1 85293 059 4 (56.017.4 Mas)
- Doyle, P., Bennett, M.R., Baxter, A.N. 2001. The key to Earth History. Wiley. 293 p. ISBN 0 471 49215 9
- Dunbar, C.O. 1963. Geologia Histórica. Compañía Editorial Continental S.A. 556 p.
- Erwin, D.H. 2005. Extinction. How life on Earth Nearly Ended 250 Million Years Ago. Princeton University Press. 296 pp.
- Levin, H. 2013. The earth through time. Wiley. 567 pp.
- Ogg, J.G., Ogg, G., Gradstein, F.M. 2008. The concise Geologic Time Scale. Cambridge University Press 177p. ISBN 978 0 521 89849
- Walliser, O.H. (ed). 1996. Global Events and event stratigraphy in the Phanerozoic. Springer. 333 p. ISBN 3540590560

Software

Basic software: Office (Word, Excel, Power Point) or similar

Drawing software: (Adobe Illustrator, Corel Draw, Inkscape)

Use of AI

For this subject, the use of Artificial Intelligence (AI) technologies will be limited to activities in which its need is specified. The student will have to clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The non-transparency of the use of AI in this evaluable activity will be considered a lack of academic honesty and may result in a partial or total penalty in the grade of the activity, or greater sanctions in serious cases.

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(TEm) Theory (master)	1	Spanish	first semester	afternoon