

Master's Dissertation

Code: 43862
ECTS Credits: 15

Degree	Type	Year	Semester
4316238 Paleobiology and Fossil Record	OB	0	2

Contact

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Teachers

Marc Furio Bruno

Carme Boix Martinez

Use of languages

Principal working language: english (eng)

Prerequisites

There are no pre-requirements.

Objectives and Contextualisation

The Final Master Thesis (15 ECTS) is used to assess if the students have acquired the knowledge taught in the master's classes; if they are capable of planning a research problem and designing a good research work; if they are able to develop a critical and well structured scientific work; their ability to synthesise and present the acquired data in an appropriate way, as well as the capability of the students to transmit orally the relevance of the data obtained during their research.

Skills

- Analyze data using adequate mathematical tools.
- Apply evolutionary concepts to resolve geological problems related to the time-ordering of fossils and the sediments that contain them.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Continue the learning process, to a large extent autonomously.
- Defend the results, respecting and discussing those of others in English.
- Design and carry out research projects in paleobiology and communicate and disseminate the results of the knowledge acquired.
- Gather and synthesize information from scientific literature (library, data bases, online journals, contrasted web pages).
- Identify fossilization processes and avoid taphonomic biases in the study of the biology of organisms from the past.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Obtain original data by means of field or lab work and process them adequately to resolve questions of a paleobiological profile.

- Recognize and use the fossil record applying the theories, paradigms and concepts of evolution and ecology to resolve specific problems of life in the past.
- Show a critical and self-critical capacity.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Use a scientific argument in English to justify research results .
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use paleontological, geological, biological, chemical or physical sources of information to delimit ecological parameters in the past.

Learning outcomes

1. Adequately contextualise the fossil material in your topic of work in an ordered sedimentary succession.
2. Analyze data using adequate mathematical tools.
3. Apply the theories, paradigms and concepts in the areas of biology and ecology appropriate for your topic of work.
4. Apply the theories, paradigms and concepts in the areas of geology appropriate for your topic of work.
5. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
6. Continue the learning process, to a large extent autonomously.
7. Defend their own results, respecting and discussing the results of others.
8. Delimit the paleoenvironmental variables concerning your topic of work.
9. Delimit the taphonomic processes affecting the fossil material of your work topic.
10. Gather and synthesize information from scientific literature (library, data bases, online journals, contrasted web pages).
11. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
12. Recognise and make adequate use of the fossil register for your own topic of work.
13. Relate concepts about your topic of work, write a report and give an oral presentation of the results.
14. Show a critical and self-critical capacity.
15. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
16. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
17. Use scientific argumentation to justify the results of research.
18. Use the appropriate methodology for your topic of work.

Content

The work will be original and written in English, following the format of an indexed scientific journal format. The role of the supervisor of the dissertation will be restricted to follow-up the evolution of the student's work. The interaction between the supervisor and the student must be constant throughout the process.

Methodology

Proposal of a working hypothesis. Selection of the most suitable methods to be used to demonstrate or refute the validity of the initial work hypothesis.

Gathering of the primary data. Statistical or discriminant treatment of numerical data. Descriptive work and development of qualitative data. Discussion of the data obtained and contextualization within a previously delimited scientific debate.

Achievement of conclusions. Preparation of a written report of the work in a scientific paper format. Oral presentation and defence to the evaluation committee of the most relevant results derived from the research.

The dissertation work will follow the format of a scientific paper, with a maximum of 25 pages (text, figures and tables included). One annexe with relevant information could be added. The structure will comprise an

informative title, a summary (300 words maximum), an introduction with a critical revision of previous works, a geological setting, detailed methods, results, discussion of the results, conclusions and bibliography.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Supervised			
Regular meetings with the supervisor	10	0.4	5, 7, 14, 15, 16, 17, 18
Type: Autonomous			
Master's Thesis preparation, writing and defence	365	14.6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

Evaluation

The mark of the Master's dissertation is divided in:

- The correct use of theoretical concepts: 20%
- Methodology: 20%
- Formal aspect: 20%
- Qualification of the report: 20%
- Oral defence of the dissertation: 20%

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Master's Thesis preparation, writing and defence	100%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

Bibliography

Hyland, Ken. (2008) English for Academic Purposes. An advanced resource book. Routledge Applied Linguistics. Series Editors: Christopher N. Candlin and Ronald Carter, New York, USA.

Swales, John. and Christine. Feak (2000) English in Today's Research World. Ann Arbor: University of Michigan Press.

Van Geyte, Els. (2013) Writing: Learn to write better academic essays. Academic Skills Series. Collins EAP, London.

Williams, Anneli (2013) Research: Improve your reading and referencing skills. Academic Skills Series. Collins EAP, London.

More specific and detailed bibliography will be recommended in each case by the director(s) according to the nature and specific characteristics of the assigned work.