Universitat Autònoma de Barcelona

2021/2022

Master's Degree Dissertation

Code: 43870
ECTS Credits: 15

Degree	Type	Year	Semester
4316231 Plant Biology, Genomics and Biotechnology	OB	0	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: english (eng)

Other comments on languages

Final Master Thesis must be written and defended in English

Prerequisites

Basic knowledge in laboratory experimentation in Biology

Objectives and Contextualisation

The main objective of the Final Master Thesis (TFM) is firsthand learning of the scientific method. Thus, the students should participate in the design, implementation and presentation of the results of a research project or work placement. The Master Thesis involves the preparation of a report, and the public defense of a practical work on a topic related to Plant Biology, Genomics or Biotechnology, which previously has been developed in the module of the External research practices. The main objective is for the student to integrate a set of skills and competencies acquired during the program.

In the Master Thesis the students must demonstrate:

a) They have acquired the skills trained in the master.

b) Their reflective and critical capacity.

c) Their ability to raise a research problem, design a project to find answers, to critically analyze the results and conclusions based and proven.

d) Ability to present and defend the results.

Competences

- Analyze research results to obtain new products or processes, evaluating their industrial and commercial viability for transfer to society.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Conceive, design, manage and develop a scientific, technical or industrial project in Biology and Biotechnology of plants and fungi, and be able to interpret and extract knowledge of the same.

- Continue the learning process, to a large extent autonomously.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Synthesize, and analyze alternatives and debate critically.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use and manage bibliographical information and computer resources in the area of study.
- Use scientific terminology to argue the results of research and present them in English both orally and in writing in an international environment.
- Work in a multidisciplinary team.

Learning Outcomes

1. Analyze research results to obtain new products or processes, evaluating their industrial and commercial viability for transfer to society.
2. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
3. Continue the learning process, to a large extent autonomously.
4. Critically analyse experimental data from the analyses made, discuss the limitations of the techniques used and propose improvement measures.
5. Design and carry out a research project in the field of plant biology, genomics and biotechnology.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Propose innovative projects in biology, genomics and plant biotechnology, starting from an integrated perspective on the knowledge acquired.
8. Report clearly and concisely on the project's results and conclusions, in writing and orally.
9. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
10. Synthesize, and analyze alternatives and debate critically.
11. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
12. Use and manage bibliographical information and computer resources in the area of study.
13. Use scientific terminology to argue the results of research and present them in English both orally and in writing in an international environment.
14. Work in a multidisciplinary team.

Content

Master's dissertation

Regulations for submission and evaluation of the Final Master Thesis (TFM).

Students must join a research group where they will develop a research project for acquiring a certain research capacity that, in future, will allow him/her to develop a research project.
Regulations for submissionand public oral presentation of the "Final Master Thesis" are given below.

Presentation of the written work
The report will be limited to 30 pages, A4, including figures, written in 1.5 or double space. This report shall contain the following aspects:

- Signature page: There must be a sheet with the signatures of the applicant and the Director of the work. If the director is not a member of the responsible departments, there should be the signature of a tutor or the Coordinator of the research module.
- Summary (maximum 200 words)
- Abbreviation list (if necessary)
- Introduction
- Objectives

- Materials and Methods
- Results
- Discussion
- Conclusions
- References

The oral defence will consist of a summary exhibit (10 to 15 minutes) in front of the assessment commission. Members of the Commission may ask students about scientific and technical aspects of the work to discuss different aspects of the work. The oral defence of the work will be public (as long as there is no agreement of confidentiality) and, if one of the teaching staff members of the Master wants to ask some related aspects to the student, he/she can do so.

Language of both the written report and the oral defence is English.

Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents.

Methodology

Elaboration and public defense of the Final Master Thesis on a topic related to Plant Biology, Genomics or Biotechnology integrating the abilities and competences acquired in the master. For the elaboration of this final master dissertation the student gets involved in a resaerch project of a research group, prefentially the same where he/she had performed the External Practical Placement.

The proposed teaching methodology may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Annotation: 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.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Lab experimentation	96	3.84	4, 5, 7, 10, 14
Tutorial sessions	4	0.16	
Type: Autonomous			
Elaboration of Final Master Thesis	175	7	4, 1, 8, 7, 6, 2, 10, 12, 13
Personal study, consult and analysis of articles and reports	99.5	3.98	1, 5, 3, 11, 14, 12, 13

Assessment

The research work will be evaluated by a Committee of 3 members. The assessment Committee will be made up of three doctors that are part of the teaching staff of the Master. The coordination of the research module, together with the coordinator of the Master, make a list of evaluators of up to 10 members which include faculty experts in different lines of research developed in the Departments (BABVE, Biochemistry and Molecular Biology) or in the CRAG. If the number of work to evaluate is high, the coordinator of the research module can form different of commissions (from the list of reviewers) for research projects that have a similar theme or methodology.

The written reports shall be deposited in the Department of Animal Biology Plant Biology and Ecology (BABVE) before the deadline set by the module coordinator. The deadline will be announced with sufficient time (usually the delivery will be the last week of June or the first week of September and defence work during the first half of July and September, respectively). Then, if necessary (high number of presentations), various committees can be established. Each committee will determine the day of the oral presentation (before the official closing deadline). Both the written report and the oral defence of the work will always be evaluated by the same Commission to award a single final mark.

The range of qualifications that will be used is: *Not Presented, Fail, Pass, Outstanding, Excellent, Honours*.

Using as a basis the work presented both the written report and the oral defence, the committee will evaluate the research capacity gained by the student during the semesters in which these research modules have been developed.

- There are requested 4 copies of the report, which shall be deposited with the secretary of the Department of Animal Biology, Plant Biology and Ecology, Faculty of Biosciences. There will be a copy for each member of the Commission and the fourth copy will remain in the department.
- The management Department (BABVE) will keep a record of all submitted reports.

Student's assessment may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final Master Thesis Document	40%	0	0	4, 1, 5, 8, 7, 6, 9, 2, 10, 11, 12, 13
Oral presentation of Final Master Thesis	40%	0.5	0.02	4, 5, 8, 6, 9, 2, 10, 11, 12, 13
Supervisor report	20%	0	0	4, 5, 7, 6, 9, 3, 10, 11, 14, 12

Bibliography

Scientific articles and reviews specifically addressing the research topic of the master thesis

Software

PowerPoint