UAB
Universitat Autònoma de Barcelona

Master's Degree Dissertation

2026/2027

Code: 45749
Credits: 15

Degree programme	Type	Course
Applied Nanoscience: From Materials to Devices	TFE	1

Contact lecturer

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Group languages

You can consult this information at the end of the document.

Prerequisites

Those required for enrollment in a Master's degree program.

Objectives

The objective is to undertake a research placement within a research group or a company engaged in research, innovation, and development (R&D) activities in the field of nanoscience and its applications.

Learning outcomes

- CA40 (Synthesise the knowledge acquired in applied nanoscience in an oral presentation in defence of the work carried out.) Synthesise the knowledge acquired in applied nanoscience in an oral presentation in defence of the work carried out.
- CA41 (Plan the development of a research project in applied nanoscience with a high innovation component and taking into account its possible ethical, social, environmental and gender implications.) Plan the development of a research project in applied nanoscience with a high innovation component and taking into account its possible ethical, social, environmental and gender implications.
- CA42 (Explain to researchers and/or professionals in the field of applied nanoscience the results (novel products or processes) of a research project and its possible environmental impact, assessing the industrial and commercial viability for its transfer to society.) Explain to researchers and/or professionals in the field of applied nanoscience the results (novel products or processes) of a research project and its possible environmental impact, assessing the industrial and commercial viability for its transfer to society.
- KA40 (Define the objectives, resources, and processes for carrying out a research project.) Define the objectives, resources, and processes for carrying out a research project.
- KA41 (Prepare a rigorous scientific text including the state of the art, experimental or theoretical description, the main results, their discussion and an adequate bibliography.) Prepare a rigorous scientific text including the state of the art, experimental or theoretical description, the main results, their discussion and an adequate bibliography.
- SA47 (Apply the concepts and theories appropriately in the preparation of a research project in areas related to Nanoscience and Nanotechnology.) Apply the concepts and theories appropriately in the preparation of a research project in areas related to Nanoscience and Nanotechnology.

- SA48 (Develop a research project with a high innovative component in applied nanoscience.) Develop a research project with a high innovative component in applied nanoscience.
- SA49 (Interpret the experimental results resulting from research work in fields related to nanoscience and nanotechnology, obtaining reasoned conclusions.) Interpret the experimental results resulting from research work in fields related to nanoscience and nanotechnology, obtaining reasoned conclusions.

Contents

Each Master's Thesis focuses on a specific topic related to nanoscience and nanotechnology.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
The specific competences associated with each Master's Thesis	300	12	CA40, CA41, CA42, KA40, KA41, SA47, SA48, SA49
Individual student work	75	3	CA40, CA41, CA42, KA40, KA41, SA47, SA48, SA49

The specific methodology will depend on the nature of the project, which may be theoretical, experimental, or a combination of both approaches.

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.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Oral defense	40-50%	0	0	CA40, CA41, CA42, KA40, KA41, SA47, SA48, SA49
Dissertation	50-60%	0	0	CA40, CA41, CA42, KA40, KA41, SA47, SA48, SA49

The Master's Thesis is assessed through the submission of a written dissertation and its public oral defense before an examination committee appointed by the course coordinator. Both the written dissertation and the oral presentation must be prepared and delivered in English. The final grade will be based primarily on these two components, with the written dissertation accounting for 50-60% of the final mark and the oral defense accounting for the remaining 40-50%. In addition, the examination committee may consider other assessment evidence, such as a report from the external institution where the work was carried out.

The written dissertation must include, at a minimum, the following sections (additional sections may be included, or the structure adapted, where appropriate, depending on the nature of the work):

- Cover page, including the title of the thesis, the student's full name and NIU, the name of the supervisor(s), the department and institution where the research was conducted, and any other relevant information.

- Abstract (maximum 250 words).
- Introduction, including the state of the art and the motivation for the work.
- Objectives.
- Materials and Methods or Experimental Methodology.*
- Results and Discussion.*
- Conclusions.
- References.
- Appendices.
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*The sections "Materials and Methods or Experimental Methodology" and "Results and Discussion" may be combined into a single section if justified by the nature of the work.

The use of figures, tables, and other graphical resources is strongly encouraged to improve the clarity and understanding of the results. The dissertation shall have a maximum length of 50 pages, excluding references and appendices.

The oral defense will consist of a 20-minute public presentation followed by a question-and-answer session conducted by the members of the examination committee, lasting no more than 30 minutes. Slides or other supporting materials may be used during the presentation.

The course includes two assessment periods, corresponding to June/July and September. Students may choose in which assessment period they wish to present and defend their Master's Thesis. The course coordinator will establish the deadlines for submission of the written dissertation and the dates of the oral defenses for each assessment period and will make them publicly available with sufficient advance notice.

A record shall be produced for each assessment session, including the venue, date, time, attending committee members, and the grade awarded to each student. The official course grade report shall be signed by the members of the examination committee.

Use of Artificial Intelligence (AI)

The use of AI tools is permitted in this course as a means of supporting the preparation of the Master's Thesis. However, the thesis must clearly demonstrate the student's original and substantial contribution, particularly in data processing, critical analysis, interpretation of the results, and the development of the conclusions.

Students must declare whether they have used AI tools, specify which tools were used, and explain the purpose for which they were employed. Failure to disclose the use of AI will be considered a breach of the principles of academic integrity and may result in a penalty in the assessment of the activity.

Bibliography

No bibliography is assigned.

Software

No software is assigned.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this link. To access the information, you will need to enter the course CODE