

Course guide

480USETFM - 480USETFM - Master's Thesis

Last modified: 23/07/2026

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 748 - FIS - Department of Physics.

Degree: MASTER'S DEGREE IN SUSTAINABILITY AND STRATEGIES FOR A JUST GLOBAL TRANSITION (Syllabus 2026). (Project subject).

Academic year: 2026 **ECTS Credits:** 15.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: Alcaraz Sendra, Olga

Others: Tot el professorat del Màster Universitari en Sostenibilitat i Estratègies per a una transició global justa (MUSE).
Todo el profesorado del Máster Universitario en Sostenibilidad y Estrategias para una transición global justa (MUSE).
All teaching staff of the Master's Degree in Sustainability and Strategies for a Just Global Transition (MUSE).

TEACHING METHODOLOGY

MD4: Case studies.
MD5: Design Thinking.
MD6: Inquiry-based learning.
MD7: Project-based learning.
MD9: Service-learning (ApS).

LEARNING OBJECTIVES OF THE SUBJECT

The main objective of the Master's Thesis (TFM) is for students to demonstrate, in an integrated manner, the knowledge, skills, and competences acquired throughout the program by completing an original and autonomous research or professional application project in the field of sustainability and strategies for a just global transition.

Specifically, upon completion of the Master's Thesis, students must have achieved the following objectives:

- Research and methodological rigor: Apply cross-disciplinary knowledge and skills in the design and development of a research project, critically evaluating the reliability and relevance of the information sources used.
- Design and just transition: Design projects and proposals that transversally integrate the principles of social and ecological justice into their implementation phase.
- Global critical analysis: Critically assess different models of sustainable transition, analyzing their impacts on a global scale in depth.
- Innovation and planetary boundaries: Discuss and propose innovative approaches applied to resource management and sustainable production, always respecting the framework of planetary boundaries.
- Mitigation and adaptation: Evaluate and formulate effective strategies to mitigate environmental impacts in different economic and social sectors, as well as for adaptation to them.
- Decision-making and ethics: Make strategic decisions in sustainability management and planning, applying ethical frameworks and rigorously considering social criteria in the development of the project.
- Communication and outreach: Utilize and deploy effective communication strategies for the scientific dissemination of the project's results and for awareness-raising in the field of sustainability.

STUDY LOAD

Type	Hours	Percentage
Hours small group	1,0	0.27
Guided activities	30,0	8.00
Self study	344,0	91.73

Total learning time: 375 h

CONTENTS

Master's Thesis Structure and Content

Description:

The Master's Thesis (TFM) is designed as the outcome of a process that integrates and synthesizes the various areas of knowledge covered in the program. Its objective is for students to apply and demonstrate the acquisition of the master's specific competencies, as well as core transversal skills, such as personal synthesis capacity and effective work habits.

The key aspects defining its contents are the following:

- Format and Length: The final thesis must be presented in the format of a research article. The length of the report must be between 6,000 and 10,000 words, excluding references and appendices.
- Workload: The TFM is worth 15 ECTS credits, representing an estimated dedication of 375 hours by the student.
- Report Structure: Although provided as a guideline, the report must include essential sections such as:
 - a) Abstracts (in Catalan, Spanish, and English) and a list of acronyms.
 - b) Introduction, including background analysis and the state of the art.
 - c) Definition of objectives and applied methodology.
 - d) Development of the work, discussion of results, and conclusions.
 - e) Sustainability and Ethics Analysis: It is mandatory to include a specific appendix dedicated to the analysis of sustainability and the ethical implications of the project. This section must detail the points required by university regulations that have not been implicitly addressed in the main body of the work.

Finally, the topic of the TFM may arise from proposals made by the student, the master's faculty, or through agreements with external companies and institutions, always subject to the supervision and approval of a director affiliated with the academic program.

Full-or-part-time: 375h

Guided activities: 30h

Self study : 345h

ACTIVITIES

Project supervision

Description:

Attend the tutoring meetings arranged by the Master's Thesis supervisor and, in accordance with their advice, address their suggestions and revisions throughout the entire process of completing the Master's Thesis.

Full-or-part-time: 30h

Guided activities: 30h

Development of a wide-ranging project or thesis

Description:

Design, plan, and carry out a highly complex or extensive project or thesis, applying and expanding knowledge, and drafting a report that presents its approach, results, and conclusions.

Full-or-part-time: 315h

Self study: 315h



Preparation of the Master's Thesis presentation and defense

Description:

This activity encompasses the process of synthesis, structuring, and rehearsal required for the oral and public presentation of the Master's Thesis results before the examination committee. Students must design appropriate visual support and develop their communication skills to convey the key points of their research in a clear, precise, and rigorous manner.

Full-or-part-time: 30h

Self study: 30h

GRADING SYSTEM

The grade of the TFM will be based on an assessment of the written document and the oral presentation of the objectives, results and conclusions of the TFM before an examination committee. The committee will consist of 3 professors, who after the public presentation of the TFM will award the grade according to the following criteria:

Assessment of the TFM report (70%): Rationale and objectives: 7%; Methodology: 14%; Results: 14%; Conclusions: 14%; References: 7%; Language and writing: 7%; Quality of the presentation: 7%

Assessment of the oral presentation and defense (30%): Alignment of the presentation with the content of the TFM report and the scheduled time: 3%; Presentation of the objectives, methodology and results: 6%; Presentation of the conclusions: 4.5%; Quality of the presentation: 4.5%; Use of language: 3%; Communication skills: 4.5%; Response to questions from the committee: 4.5%.

For more detailed information, consult the Master's Thesis regulations:

https://muse.masters.upc.edu/es/shared/tfm_muse-v1-eng.pdf

RESOURCES

Other resources:

Guide for Incorporating Sustainability and Ethical Implications Analysis in Final Projects

https://govern.upc.edu/ca/consell-de-govern/consell-de-govern/sessio-07-2023-del-consell-de-govern/comissio-docencia-i-politica-academica-pendent-celebracio/informacio-de-la-guia-per-incorporar-lanalisi-de-sostenibilitat-i-implicacions-etiques-en-els-tfe/informacio-de-la-guia-per-incorporar-lanalisi-de-sostenibilitat-i-implicacions-etiques-en-els-tfe/@@display-file/visiblefile/Guia%20Informe%20Sostenibilitat%20TFG_TFM_versi%C3%B3UPC.pdf