Course guide
250593 - TFG-CTM - Bachelor's Thesis

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.

Degree: BACHELOR’S DEGREE IN MARINE SCIENCE AND TECHNOLOGY (Syllabus 2018). (Project subject).
Academic year: 2022
ECTS Credits: 18.0
Languages: Catalan, Spanish

LECTURER
Coordinating lecturer: OCTAVIO CESAR MÓSSO ARANDA
Others: OCTAVIO CESAR MÓSSO ARANDA

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
13390. Establish a good practice in the integration of common numerical, laboratory and field techniques in the analysis of any problem related to the marine environment.
13392. Evaluate the bio- and geo-diversity of the marine environment, identifying habitats and ecosystems with multidisciplinary criteria.
13394. Address the most relevant processes and their interactions related to their physical / chemical / biological / geological components, applying technical and scientific knowledge and criteria.
13397. Carry out environmental impact, management and protection studies of the marine environment and adjacent coastal areas, including the corresponding infrastructures and their related impacts.
13403. Develop a conceptual framework to address the sustainability of the marine environment and the related socio-economic activities at different scales, explaining the effects of climate change.
13404. Set, plan and execute basic and applied research in the field of Marine Sciences and Technologies.
13405. Carry out calculations, assessments, surveys and inspections in coastal and marine environments, as well as the corresponding technical documents.
13406. Write technical reports and disseminate knowledge about the different components of the marine system, considering the applicable legal framework.

Generical:
13380. Develop a professional activity in the field of Marine Sciences and Technologies.
13381. Address in a comprehensive manner the analysis and preservation of the marine environment with sustainability criteria.
13382. Apply state-of-the-art methods and techniques in oceanography and marine climate, jointly covering the physical, chemical, geological and biological aspects.
13383. Develop a conceptual framework that links the scientific-technological and management aspects for marine resources, explaining the interactions with marine infrastructures and management plans in coastal areas.
13384. Apply knowledge and academic experience to the control and monitoring of the marine environment and its coastal boundary, using the state-of-the-art tools in the Marine Sciences and Technologies.
13385. Apply knowledge and academic experience to the biotic and abiotic resources of the marine environment, explaining their interactions with the socio-economic activities that take place in it.
13386. Encompass and teach studies in the different research lines that converge in Marine Sciences and Technologies.
13387. Combining preservation with economic activity within the framework of current legislation promoting the development of a social and environmental awareness.
TEACHING METHODOLOGY

The course consists of 0 hours per week of classroom activity (large size group).

The 0 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.

Note: The language in which the teacher will conduct himself/herself with the students will depend on the teacher and can be either Spanish, Catalan or English.

Although most of the sessions will be given in the language indicated, sessions supported by other occasional guest experts may be held in other languages.

LEARNING OBJECTIVES OF THE SUBJECT

The degree in Marine Sciences and Technologies includes 18 credits in the execution of an end-of-degree (bachelor) thesis. This is an autonomous work by the student, under the supervision of a tutor, and consists of the hierarchical and structured development of a project or research project in which the student has to integrate the knowledge and skills acquired during the degree. It will be sought, as far as possible, that these bachelor thesis projects are of the sufficient quality to be presented at conferences or published in a journal.

1. Ability to synthesize in the field of Marine Sciences and Technologies for the completion of a final degree project.
2. Ability to apply the knowledge acquired in different subjects to problems in the field.
3. Ability to integrate and relate the knowledge acquired in the different subjects of the undergraduate studies. The student must show understanding and assimilation of the knowledge studied.
4. Ability to transmit information, both orally and in writing. This ability becomes clear if the student is able to explain ideas and concepts in an easy-to-understand way, to relate the concepts of the speech well, express themselves clearly and correctly.

The bachelor’s thesis represents the opportunity for students to interact, on the one hand, with an advisor of the degree in Marine Sciences and Technologies at the campus where he made the optional elective credits (with the possibility of having an external advisor, either from a public or private company, or another university or institute), where real problems will be addressed to which students have to find realistic solutions applying the knowledge acquired.
CONTENTS

TFG

Description:
Completion of a final degree project in the field of marine sciences and technologies of a professional nature that synthesizes and integrates the competencies acquired in the courses.

Specific objectives:
It is a research work that promotes both an advance in knowledge and human and sustainable development, with a theoretical, qualitative or experimental approach, practical and quantitative in the context of marine sciences and technologies, in any of its branches: biology (biotechnology), geology, chemistry, physics, engineering, environment or technology. It is recommended to follow a common line in research work, which is: i) Introduction, where a hypothesis is raised (provisional explanation or statement that expresses statements or denials about reality), the approach of generic and specific objectives generally raised from the hypothesis. ii) Description of the study area, where the most important characteristics of the study area will be highlighted. iii) Methodology, where the plan or scheme of work to be followed to achieve the proposed objectives will be detailed, the data collected or collected, and data processing techniques. iv) Results, where the results obtained were explained as well as their interpretation. v) Discussion, where the results were discussed according to the techniques used and their relationship with the hypothesis raised, the objectives and the theoretical framework considered. vi) Conclusions and proposals for future research, which will address the conclusion of the results obtained and proposals to continue and research in the future, based on the discussions and conclusions obtained. vii) Bibliography The defense of the Final Degree Project can only be carried out when the student has passed all the subjects of the Degree and proves to have achieved the required competencies. That is why it is recommended to enroll in the course in which you have the certainty that you are going to defend, because otherwise you will not have to repeat enrollment.

Full-or-part-time: 286h 39m
Theory classes: 120h
Self study: 166h 39m

GRADING SYSTEM

The mark of the course is obtained from the ratings of continuous assessment and their corresponding laboratories and/or classroom computers.

Continuous assessment consist in several activities, both individually and in group, of additive and training characteristics, carried out during the year (both in and out of the classroom).

The teachings of the laboratory grade is the average in such activities.

The evaluation tests consist of a part with questions about concepts associated with the learning objectives of the course with regard to knowledge or understanding, and a part with a set of application exercises.

BIBLIOGRAPHY

Basic: