

Course guide

2500243 - GEATFG - Bachelor's Thesis

Last modified: 17/06/2024

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

Degree: BACHELOR'S DEGREE IN ENVIRONMENTAL ENGINEERING (Syllabus 2020). (Project subject).
BACHELOR'S DEGREE IN ENVIRONMENTAL ENGINEERING / BACHELOR'S DEGREE IN MINERAL RESOURCE
ENGINEERING AND MINERAL RECYCLING (Syllabus 2024). (Project subject).
BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING / BACHELOR'S
DEGREE IN ENVIRONMENTAL ENGINEERING (Syllabus 2024). (Project subject).

Academic year: 2024 **ECTS Credits:** 12.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: OCTAVIO CESAR MÖSSO ARANDA

Others: OCTAVIO CESAR MÖSSO ARANDA

PRIOR SKILLS

The previous skills that students must accredit in order to carry out the final degree project include both technical knowledge and general competences. In terms of technical knowledge, they must have mastered basic concepts and principles of software and programming such as AutoCAD, MATLAB, SolidWorks, simulation programmes, etc. It is necessary to have certain research skills, and be able to carry out an exhaustive bibliographic review, and carry out research methods applying the qualitative and quantitative methods assimilated during the degree course. You should be able to plan and execute laboratory and field work, focusing on data acquisition, with emphasis on data quality control, pre-processing and post-processing.

REQUIREMENTS

Students must be able to plan and manage projects. They must have good time management skills (planning and managing their time efficiently, setting clear goals and deadlines), organisational skills (ability to structure end-of-studies work phases and manage material, human and even financial resources). They must be able to think critically, and show the ability to discuss and critically evaluate the results of their work, proposing concrete solutions related to the work. It is also necessary to demonstrate the ability to work in a team, collaborating with members of the work team and/or with the people who direct the work and to integrate knowledge from different disciplines (if the work requires it) always with ethics and social responsibility, considering aspects of sustainability and the environment in the development of the work.

For the writing of the report and the oral presentation, it is necessary that they demonstrate good communication skills, both in terms of technical writing of technical documents, as well as a good oral presentation.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

14466. Carry out an original exercise individually and present it and defend it before a university tribunal, consisting of a scientific or technical project or study in the field of specific technologies of the Environmental Engineering of a professional nature in which the competences acquired in the teachings.

Generical:

14440. Identify, formulate and solve problems related to environmental engineering.
14441. Apply the functions of consulting, analysis, design, calculation, project, construction, maintenance, conservation and exploitation of any action in the territory in the field of environmental engineering.
14442. To use in any action in the territory proven methods and accredited technologies, in order to achieve the greatest efficiency respect for the environment and the protection of the safety and health of workers and users.
14443. Apply the necessary legislation during the professional practice of environmental engineering.
14444. Apply business management techniques and labor legislation.

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.

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

1. Realitzar el treball de fi de grau en l'àmbit de l'enginyeria ambiental de naturalesa professional i on es sintetitzin i integrin les competències adquirides al llarg de l'grau.

Treball de Fi de Grau. Consistent en la realització d'un exercici original a realitzar individualment en l'àmbit de les tecnologies específiques de l'Enginyeria Ambiental, de naturalesa professional i en el qual se sintetitzen i integren les competències adquirides en els ensenyaments. Aquest treball haurà de ser presentat i defensat davant d'un tribunal universitari.

1. Realizar el trabajo de fin de grado en el ámbito de la ingeniería ambiental de naturaleza profesional y donde se sinteticen e integren las competencias adquiridas a lo largo del grado.

Trabajo de Fin de Grado. Consistente en la realización de un ejercicio original a realizar individualmente en el ámbito de las tecnologías específicas de la Ingeniería Ambiental, de naturaleza profesional y en el que se sinteticen e integren las competencias adquiridas en las enseñanzas. Este trabajo deberá ser presentado y defendido ante un tribunal universitario.

1. Carry out the final degree project in the field of environmental engineering of a professional nature and where the skills are synthesized and integrated acquired throughout the grade.

Final degree project. Consisting of carrying out an original exercise to be carried out individually in the field of specific technologies of Environmental Engineering, of a professional nature and in which the skills acquired in the teaching are synthesized and integrated. This work must be presented and defended before a university court.

STUDY LOAD

Type	Hours	Percentage
Hours small group	1,0	0.33
Guided activities	24,0	8.00
Self study	275,0	91.67

Total learning time: 300 h

CONTENTS

TFG

Description:

Completion of a final degree project in the field of Environmental Engineering of a professional nature where the skills acquired in the courses are synthesized and integrated.

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, practical and quantitative approach in the context of Environmental Engineering, in any of its branches : biology (biotechnology), geology, chemistry, physics, engineering, environmental or technological.

Full-or-part-time: 2h 24m

Laboratory classes: 1h

Self study : 1h 24m

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:

- Munier, N. Project management for environmental, construction and manufacturing engineers. New York: Springer, 2013. ISBN 9789400744769.