Coastal Zone Planning and Management (250602)

General information

School: ETSECCPB
Departments: Departament d'Enginyeria Civil i Ambiental (DECA)
Credits: 5.0 ECTS
Programs: MÀSTER UNIVERSITARI ERASMUS MUNDUS EN ENGINYERIA I GESTIÓ COSTANERA I MARÍTIMA, pla 2022 - (codi pla 1525), MÀSTER UNIVERSITARI ERASMUS MUNDUS EN ENGINYERIA I GESTIÓ COSTANERA I MARÍTIMA, pla 2013 - (codi pla 1090)
Course: 2023/2024

Main teaching language at each group

- Group 10Q2 English (Q2)

Faculty

Responsible faculty: Jose Antonio Jimenez Quintana
Teacher: Jose Antonio Jimenez Quintana

Generic objectives

The main aim of this course is to bring up students in the field of Planning and Management of the Coastal System. This will be done by adopting a multi-disciplinary and inter-disciplinary view of the coastal zone. Conflicts and problems of natural and anthropogenic origins will be analyzed by using tools from different disciplines.

Skills

Specific skills

Management techniques.

Environmental issues before and after construction of e.g. a port.

Entrepreneurship and corporate social responsibility.

How climate change uncertainties can be managed to reduce risks when designing and operating resilient infrastructure.

Perform risk management (concepts and techniques).
Know how to make the stakeholders and community to work together to make a project acceptable and wanted.

Coastal vulnerability within a sustainable framework.

Field campaigns and data treatment to evaluate problematic situations and plan/design solutions.

Developing beach management strategies for real-world coastal systems.

The basis behind climate change and its effect on the coast.

How to cooperate with administrations and private companies.

Design coastal interventions.

Understand and predict the impacts of coastal interventions.

Offer alternatives to hard coastal engineering.

Compute the risk, vulnerability and hazard analysis including the decadal (climatic) scale.

**Generic skills of subject**

Design methods for ports, waterways and other coastal facilities.

Dredging and disposal solutions for contaminated sediments.

Social responsibility of business and entrepreneurship.

Develop knowledge and understanding of the coastal environment at an advanced level, applying classic (hard and soft) coastal engineering complemented with building with nature concepts, with ability to analyse, evaluate, assess and synthesis of data and information from different sources with contemporary techniques and technologies.

Propose creative and innovative solutions by themselves or as a work group for current and future problems by enhancing their own interpersonal understanding, work as a team and oral and written communication skills.

Take a leadership role in the community, exerting awareness of ethical, cultural and social issues within a global context in the exercise of their professional skills and responsibilities.

**ECTS credits: total hours of student work**

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<tr>
<th>Dedication</th>
<th>Hours</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Supervised Learning</td>
<td>Theory</td>
<td>29.00</td>
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<tr>
<td></td>
<td>Assignments</td>
<td>8.00</td>
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<tr>
<td></td>
<td>Laboratory</td>
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<td></td>
<td>Supervised activities</td>
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<td></td>
<td>Self-Learning</td>
<td>80.00</td>
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Contents

Introduction

Dedication

1.0h. Theory

Description

Introduction to the course. Presentation of course work.

Objectives

Course structure. Sources of information and data. Practical works

The coastal system

Dedication

3.0h. Theory + 1.0h. Assignments

Description


Objectives

Characterization of the coastal system and its multiple components. Application of the concepts to a real case.

Coastal problems and conflicts

Dedication

5.0h. Theory + 1.0h. Assignments

Description


Objectives

Analysis frameworks and tools

Dedication
3.0h. Theory

Description
Analysis frameworks. PSR, DPSIR and DPSWR models. SWOT analysis Indicators and indices. System of indicators for the management of the marine environment. Actors in the management of the marine/coastal environment. Methods of public participation.

Objectives
Introduction of the main tools in cost management.

Recreational coastal management

Dedication
5.0h. Theory + 2.0h. Assignments

Description

Assessment of recreational function in a real case. Application of the studied concepts.

Objectives
Analysis of beach management focused on recreational use.

Practical application of the subject.

Coastal management from the point of view of protection

Dedication
10.0h. Theory + 4.0h. Assignments

Description

Application of the methods seen to assess the need for protection in a coastal stretch.

Impact of climate change in coastal areas. Coastal adaptation strategies. Adaptation routes.

Evaluation of the impact of climate change on a coastline. Proposal for an adaptation strategy.

Objectives
Management of the coast to promote the protection function. Tools to use at different scales.

Application of the tools and methods studied to a real case.
Introduce the influence of climate change on coastal management.

Application of the concepts and tools studied to a real case.

**Integrated management in coastal areas**

*Dedication*

2.0h. Theory

*Description*

Theoretical and conceptual aspects.

Methodological aspects.

Strategic aspects.

The concept of ecosystem-based management.

Main European application directives in the field of marine environment management

*Objectives*

Introduction of integrated coastal zone management.

**Case study**

*Dedication*

8.0h. Laboratory

*Description*

Directed course work, where students in groups must apply the tools presented during the course to a real problem in the coastal area.

*Objectives*

Application of the concepts and tools seen throughout the course to a real case.

**Activities**

**Grading rules (*)&**

(*) *The evaluation calendar and grading rules will be approved before the start of the course.*

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.

**Test rules**

**Teaching methodology**

The course consists of 2 hours per week of classroom activity (large size group) and 0.8 hours weekly with half the students (medium size group).

The 2 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.

The 0.8 hours in the medium size groups is devoted to solving practical problems with greater interaction with the students. The objective of these practical exercises is to consolidate the general and specific learning objectives.

The rest of weekly hours devoted to laboratory practice.

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.

**Office hours**

Any day from 08:00 to 14:00 on request and after confirmation

**Basic bibliography**
