280814 - Exploitation of Marine Resources

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2020
Degree: MASTER’S DEGREE IN NAVAL AND OCEAN ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)
ECTS credits: 5  Teaching languages: Spanish

Opening hours
Timetable: Prior appointment by email

Prior skills
Own the degree of Naval Engineering

Requirements
It is not necessary to have done any previous subject of the master.

Degree competences to which the subject contributes

Basic:
- CB6. Possess knowledge and understanding that provide a basis or opportunity to be original in the development and/or application of ideas, often in a research context.
- CB7. That the students can apply their knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their study area.
- CB8. Students should be able to integrate knowledge and handle the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the responsibilities social and ethical linked to the application of their knowledge and judgments.

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CB9. That students can communicate their conclusions and the knowledge and Latest rationale underpinning to specialists and non
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Specialty clearly and unambiguously
CB10. Students must possess the learning skills that enable them continue studying in a way that will be largely self-directed or autonomous.

Specific:
CE12. Conocimiento de la ingeniería de los cultivos marinos y de su explotación y capacidad para proyectar los artefactos, flotantes o fijos, en los que se integran, desarrollando sus estructuras, materiales, equipamiento, fondeo, estabilidad, seguridad, etc.
CE11. Conocimiento de las operaciones y sistemas específicos de los barcos de pesca y capacidad para realizar su integración en los proyectos de dichos barcos.
CEE2-5. Conocimiento de los distintos componentes de un aerogenerador marino, así como de su funcionamiento y operación.
CEE2-3. (ENG) Capacidad para el diseño y proyecto de convertidores de energía marina. Conocimiento de la metodología para el proyecto de un parque de convertidores de energía marina
CEE2-2. Conocimiento de los distintos modos de extracción de energía a partir del mar.

Transversal:
CT3. TEAMWORK: Ability to work as a member of an interdisciplinary team, either as a member or performing management tasks, with the aim of contributing to projects pragmatically and sense of responsibility, assuming commitments considering the resources available.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Manage the acquisition, structuring, analysis and visualization of data and information in the field of specialty, and critically evaluate the results of this management.

Teaching methodology
Classes of theory in the classroom. Exhibition class with support of audiovisual material and development of examples. Proposal of different questions so that the student participates actively in the class. Resolution of problems and practical cases in the classroom. Practical cases related to different topics from those addressed by the student will be considered. Development of works, reports (individual). Current problems in the sector will be sought and students will be encouraged to propose solutions to these problems. These solutions must be recorded in a written report, well presented, written and structured, with well-defined objectives and clear and specific final conclusions. Exhibition of works, reports (as a team). Oral presentation of the students of the work done as a team. Defense of the presentation and resolution of questions raised by the professor and by the classmates. Tutorials Individual resolution or to small groups of doubts arising during the study of the different subjects and problems of the subject

Learning objectives of the subject
UD1. To know the current state of the fishing resources, the world of fishing at a global, European and regional level.
UD2. Know the different fishing systems and fishing gear.
UD3. Know the different fishing vessels, their particularities and fishing maneuvers. Know the hydraulic systems of the fishing winches. Know the types and characteristics of the fishing vessel project.
UD4. Know the regulations of the sector at regional level, the particularities of fishing vessels in terms of stability, forms and propulsion and treatment of fish on board.
UD5 and 6. Know the marine cultures from the point of view of engineering. Know the engineering and the project of offshore installations.
UD7. Know the operation of the state electricity market and the current status of renewable energy implementation.
UD8 to UD11. Know the different technologies of marine energies.
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Study load

| Total learning time: 45h | Hours large group: | 45h | 100.00% |

Content

**marine resources exploitation**

**Learning time:** 30h

Theory classes: 30h

**Description:**

Fisheries management. Typology of the fishing vessel. Fishing systems. Fishing gears. Treatment of fish on board. The fishing vessel project.

**Related activities:**

Practices
Final project
Final exam

**Specific objectives:**

1. To know the state of world fisheries and aquaculture, fisheries policies, fisheries management, state of exploitation of marine areas, etc.
2. Know and design the different fishing systems and gear.
3. Know the different types of fishing vessels, the main sets and fishing maneuvers.
4. Know the regulations of the sector.
5. Know the particularities of fishing vessels in terms of structure, propulsion and stability forms and their design.
6. Know the different techniques of fish treatment, once captured.
7. Know the marine cultures from the point of view of engineering.
8. Know the engineering and the project of offshore installations.
9. Know the operation of the state electricity market.
10. Know the different technologies of existing marine energies and their implementation at European and regional level.
11. Make oral and written contributions of a certain academic scope leading to a final activity, with fluency and linguistic correctness, expository amenity and communicative persuasion. (Oral presentation of the final work of the subject).
12. Properly process the available information and develop a coherent plan to resolve the situation that arises. (Intermediate works of the subject).

**Qualification system**

Practices. There will be 5 individual works or practical cases that must be delivered telematically. Valuation of 25%.
Final project. There will be a final work of the subject (in group) that must be delivered telematically and defend oral presentation. Valuation of 25%.
Exam. There will be a final exam that will consist of answering in writing a series of theoretical and practical questions of the subject. 50% valuation.
Regulations for carrying out activities

Practices will be sent by email and will have to be returned by email on the date set out in the statement.
The final work will have to be delivered before December 21st and will be presented in class on December 21st. It is a
group task.
The final exam will be a 3-hour theoretical-practical test.

Bibliography

Basic:

Santos Rodríguez, Luis ; Núñez Basañez, José F. Fundamentos de pesca. Madrid: Fondo Editorial de Ingeniería Naval :
Garcia-Badell, Jose Javier; Moreno Fernández, Miguel Ángel; Garcia-Badell Dufour, Eliane. Granja acuáticas modernas.
Burton, Tony; Sharpe, David; Jenkins, Nick; Bossanyi, Ervin. Wind energy handbook [on line]. 2nd ed. Chichester: John Wiley
9780470699751.
Waters, Rafael. Energy from ocean waves : full scale experimental verification of a wave energy converter. Tesi doctoral,
Uppsala University [on line]. 2008 [Consultation: 04/10/2018]. Available on: <http://uu.diva-
portal.org/smash/get/diva2:172943/FULLTEXT01.pdf>.

Complementary:

Asian Development Bank. Wave energy conversion and ocean thermal energy conversion potential in developing member
countries [on line]. Mandaluyong: ADB, 2014 [Consultation: 05/10/2018]. Available on:
9789292545314.
Ross Salazar, E. Artes, métodos e implementos [on line]. San José, Costa Rica: Fundación MarViva., 2014 [Consultation:

Others resources:

http://www.fao.org/home/es/ Web oficial de la Organización de las Naciones Unidas para la Alimentación y la
Agricultura
http://www.marviva.net/
http://www.sospesca.es