280713 - Logistics and Management of Maritime and Intermodal Transport

**Coordinating unit:** 280 - FNB - Barcelona School of Nautical Studies

**Teaching unit:** 751 - DECA - Department of Civil and Environmental Engineering

**Academic year:** 2020

**Degree:**
- MASTER'S DEGREE IN NAUTICAL SCIENCE AND MARITIME TRANSPORT MANAGEMENT (Syllabus 2016). (Teaching unit Compulsory)
- MASTER'S DEGREE IN NAVAL AND OCEAN ENGINEERING (Syllabus 2017). (Teaching unit Optional)

**ECTS credits:** 5

**Teaching languages:** Catalan, Spanish, English

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**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.
- CB10. Students must possess the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.

**Specific:**
- CE17-MNGTM. Gestión de actividades portuarias.

**Generical:**
- CG7-MNGTM. Capacitat per gestionar, dirigir i coordinar la protecció del medi ambient marí i aplicar criteris de sostenibilitat mediambiental al transport marítim
- CG15-MNGTM. (ENG) Capacidad para resolver problemas complejos y tomar decisiones con responsabilidad sobre bases científicas y tecnológicas en el ámbito de su especialidad
- CG17-MNGTM. (ENG) Capacidad para dirigir y gestionar puertos deportivos
- CG21-MNGTM. (ENG) Capacidad para realizar tareas de investigación, desarrollo e innovación en el ámbito de su especialidad

**Transversal:**
- CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
- CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.
- CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.
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**Teaching methodology**

The subject is semi-face-to-face in which it will provide to Atenea (academic platform) all the material to follow the course. At the beginning of the course the task will be provided, as well as the exercises to be delivered. It will be evaluated by an exam, the presentation of exercises and a practice in the computer room with the ARENA software.

**Learning objectives of the subject**

The course focuses on the acquisition of knowledge on intermodal transport and activities and requirements necessary to develop this type of transport. The student will acquire the knowledge on the operation of maritime terminals, the different administrations and companies involved in the maritime sector. The student will be able to carry out logistics tasks as well as route management at both sea and land level.

**Study load**

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

## Introduction to intermodal freight transport.

**Learning time:** 29h  
- Theory classes: 1h  
- Self study: 28h

**Description:**  

**Related activities:**  
Reading of a scientific or disseminate paper about these topic for further discussion.

## Statistics and queueing theory applied to port management and transportation.

**Learning time:** 30h  
- Theory classes: 2h  
- Practical classes: 0h  
- Self study: 28h

**Description:**  

**Related activities:**  
Exercises Block 1: POISSON AND EXPONENTIAL STATISTICAL DISTRIBUTION  
Exercises Block 2: QUEUEING THEORHY APPLIED TO PORT MANAGEMENT AND TRANSPORT.
### Port management and governance

**Learning time:** 29h  
- Theory classes: 1h  
- Self study: 28h

**Description:**  
Models of port management and governance. Agents, private agents and administration involved in port management (e.g. consignatarias, freight forwarders, dockers, mooring services, tugs, among others). Port routes, transhipment, interland / foreland. Demand studies (quantitative vs. qualitative models).

**Related activities:**  
- Reading of a scientific or disseminate paper about these topic for further discussion.

### Queue theory applied to the port structure

**Learning time:** 29h  
- Theory classes: 1h  
- Self study: 28h

**Description:**  
Description of the parameters "Dock occupation" and "Service level or Relative waiting time". Tables for obtaining the Service Level from the number of docks and the occupation of docks. Exercises Block 3: Queuing THEORY APPLIED TO PORT CAPACITY

**Related activities:**  
- Reading of a scientific or disseminate paper about these topic for further discussion. Exercises Block 3: QUEUING THEORY APPLIED TO PORT CAPACITY

### Study case: Port terminal simulation

**Learning time:** 6h  
- Theory classes: 2h  
- Self study: 4h

**Description:**  
Introduction to discrete event simulation applied to port terminals. Implementation of a simulation model about a port terminal. Modelling with the software ARENA.

**Related activities:**  
- Modelling with the software ARENA.

### Qualification system

The final grade of the subject will be the average exam (60%) and the exercises (40%).
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Bibliography

Basic:


Others resources:

Material didàctic de classe orientat a l'aprenentatge no-presencial.