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: 2019
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

Teaching staff
Coordinator: MANEL GRIFOLL

Opening hours
Timetable: Meetings established thorough e-mail.

Teaching methodology
The subject will be evaluated by an exam and the presentation of exercises.

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.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 45h</th>
<th>Hours large group:</th>
<th>45h</th>
<th>100.00%</th>
</tr>
</thead>
</table>

# Introduction to intermodal freight transport

**Description:**

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

<table>
<thead>
<tr>
<th>Learning time: 25h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes: 3h</td>
</tr>
<tr>
<td>Self study: 22h</td>
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</tbody>
</table>

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# Statistics applied to port management and transportation

**Description:**

**Related activities:**
Exercises Block 1: POISSON AND EXPONENTIAL STATISTICAL DISTRIBUTION

<table>
<thead>
<tr>
<th>Learning time: 25h</th>
</tr>
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<tbody>
<tr>
<td>Theory classes: 3h</td>
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<tr>
<td>Practical classes: 0h</td>
</tr>
<tr>
<td>Self study: 22h</td>
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</tbody>
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# Queue theory applied to port management

**Description:**
Stochastic or probabilistic queue. Examples in the port areas. Discipline of queue. Arrivals-departures diagram. Diagram of Elements in the System. Obtaining the Little formula. Kendall notation. Solution for the M / M / 1 system. Relationship in terms of Wq between the M / M / 1 and M / D / 1 systems.

**Related activities:**
Reading of a scientific or disseminate paper about these topic for further discussion. Ejercicios Bloque 2: QUEUEING THEORHY APPLIED TO PORT MANAGEMENT AND TRANSPORT.

<table>
<thead>
<tr>
<th>Learning time: 25h</th>
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</thead>
<tbody>
<tr>
<td>Theory classes: 3h</td>
</tr>
<tr>
<td>Self study: 22h</td>
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</table>
280713 - Logistics and Management of Maritime and Intermodal Transport

Queue theory applied to the port structure

<table>
<thead>
<tr>
<th>Description:</th>
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<tbody>
<tr>
<td>Description of the parameters &quot;Dock occupation&quot; and &quot;Service level or Relative waiting time&quot;. 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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Related activities:</th>
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</thead>
<tbody>
<tr>
<td>Reading of a scientific or disseminate paper about these topic for further discussion. Exercises Block 3: QUEUING THEORY APPLIED TO PORT CAPACITY</td>
</tr>
</tbody>
</table>

Learning time: 25h

- Theory classes: 3h
- Self study: 22h

Study case: Port terminal simulation

<table>
<thead>
<tr>
<th>Description:</th>
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<tbody>
<tr>
<td>Introduction to discrete event simulation applied to port terminals. Implementation of a simulation model about a port terminal. Modelling with the software ARENA.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Related activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modelling with the software ARENA.</td>
</tr>
</tbody>
</table>

Learning time: 25h

- Theory classes: 3h
- Self study: 22h

Qualification system

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

Bibliography

Basic:

