The course focuses on the acquisition of knowledge on intermodal transport and activities and requirements necessary to develop this type of transport.

Teaching methodology

The subject will be evaluated by two midterms. Each eliminate fall into this review and both will have the same weight in the final grade.

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

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

| **Introduction to intermodal freight transport.** | **Learning time:** 12h  
Theory classes: 3h  
Self study: 9h |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Introduction to intermodal freight transport.</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td>Reading of a scientific or disseminate paper about these topic for further discussion.</td>
</tr>
</tbody>
</table>

| **Loading units in intermodal transport.** | **Learning time:** 12h  
Theory classes: 3h  
Self study: 9h |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Loading units in intermodal transport.</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td>Reading of a scientific or disseminate paper about these topic for further discussion.</td>
</tr>
</tbody>
</table>

| **Equipment for cargo handling in intermodal transport.** | **Learning time:** 12h  
Theory classes: 3h  
Self study: 9h |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Equipment for cargo handling in intermodal transport.</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td>Reading of a scientific or disseminate paper about these topic for further discussion.</td>
</tr>
</tbody>
</table>

| **Vehicles and systems of intermodal freight transport.** | **Learning time:** 12h  
Theory classes: 3h  
Self study: 9h |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Vehicles and systems of intermodal freight transport.</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td>Reading of a scientific or disseminate paper about these topic for further discussion.</td>
</tr>
</tbody>
</table>
### Infrastructures and terminals for intermodal freight transport

**Description:**
Infrastructures and terminals for intermodal freight transport

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

**Learning time:** 15h
Theory classes: 6h
Self study: 9h

### Introduction to discrete event simulation applied to port terminals.

**Description:**
Introduction to discrete event simulation applied to port terminals.

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

**Learning time:** 15h
Theory classes: 3h
Practical classes: 3h
Self study: 9h

### The problem of the berth assignment.

**Description:**
The problem of the berth assignment.

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

**Learning time:** 12h
Theory classes: 1h
Practical classes: 2h
Self study: 9h
### The problem of the handling equipment assignment

**Description:**
The problem of the handling equipment assignment.

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

**Learning time:** 12h
- Theory classes: 1h
- Practical classes: 2h
- Self study: 9h

### Algorithms to determine the optimal path in the maritime transport (ship routing)

**Description:**
Algorithms to determine the optimal path in the maritime transport (ship routing).

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

**Learning time:** 15h
- Theory classes: 2h
- Practical classes: 4h
- Self study: 9h

### Study case: Port terminal simulation

**Description:**
Implementation of a simulation model about a port terminal.

**Learning time:** 6h
- Theory classes: 6h

### Study case: Intermodal transport chain election

**Description:**
Content English

**Learning time:** 3h
- Theory classes: 3h

### Qualification system

The final grade for the course will be the average of the notes of the two midterms.