250ST2121 - Public Transport

Coordinating unit: 240 - ETSEIB - Barcelona School of Industrial Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering
Academic year: 2019
Degree: MASTER'S DEGREE IN SUPPLY CHAIN, TRANSPORT AND MOBILITY MANAGEMENT (Syllabus 2014). (Teaching unit Optional)
ECTS credits: 5  Teaching languages: English

Teaching staff
Coordinator: Estrada Romeu, Miguel Angel
Others: Soriguera Martí, Francesc
         Trapote Barreira, César

Opening hours
Timetable: Previously requested via email: miquel.estrada@upc.edu

Teaching methodology
Lectures and homework exercises

Learning objectives of the subject
Provida a overall knowledge of Public Transport Systems.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Hours large group: 30h</th>
<th>24.00%</th>
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<tbody>
<tr>
<td></td>
<td>Hours small group: 15h</td>
<td>12.00%</td>
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<tr>
<td></td>
<td>Self study: 80h</td>
<td>64.00%</td>
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## Content

| **Introduction** | **Learning time:** 1h  
Theory classes: 1h |
|------------------|---------------------|
| **Description:** | Schedule, lecturers, organization of the subject. Research in Public Transport.  
Introduction to public transport, means and chains. Psychology and sociology of Urban Mobility. Mobility patterns. |

| **Characterization of Public Transport Systems** | **Learning time:** 1h  
Theory classes: 1h |
|-----------------------------------------------|---------------------|

| **Operations in Public Transportation (I)** | **Learning time:** 1h  
Theory classes: 1h |
|--------------------------------------------|---------------------|

| **Operation in public transportation systems (II)** | **Learning time:** 1h  
Theory classes: 1h |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Public transport network design (I)</td>
<td>Learning time: 1h</td>
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<tr>
<td>Description:</td>
<td>Theory classes: 1h</td>
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<tr>
<td>Public transport network design (I). Strategic, tactic and operational process. Review of methodologies based on mathematical programming, graph theory (network cohesion) and algorithms metaheuristic used for lines and public transport services. Bilevel programming. Continuous approximations method. One corridor.</td>
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<tr>
<td>Public transport network design (II)</td>
<td>Learning time: 1h</td>
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<tr>
<td>Description:</td>
<td>Theory classes: 1h</td>
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<tr>
<td>Public transport network design (III)</td>
<td>Learning time: 1h</td>
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<tr>
<td>Description:</td>
<td>Theory classes: 1h</td>
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<tr>
<td>Public transport network design (III). Dimensioning lines and schedules.</td>
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<tr>
<td>Buses (I)</td>
<td>Learning time: 1h</td>
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<tr>
<td>Description:</td>
<td>Theory classes: 1h</td>
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<tr>
<td>Busos (II)</td>
<td>Learning time: 1h</td>
</tr>
<tr>
<td>Description:</td>
<td>Theory classes: 1h</td>
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## Guided public transport

**Learning time:** 1h  
Theory classes: 1h

**Description:**  

## Transportation on demand

**Learning time:** 1h  
Theory classes: 1h

**Description:**  
Transportation on demand. bus management for disabled people, renting vehicles management (bicing, carsharing).

## Taxi - Cabs

**Learning time:** 1h  
Theory classes: 1h

**Description:**  

## Pricing and financing policies

**Learning time:** 1h  
Theory classes: 1h

**Description:**  

## Presentation of student practices

**Learning time:** 1h  
Theory classes: 1h

**Description:**  
Presentation of student practices
Qualification system

Exam which includes all themes (50%) and exercises (50%)

Regulations for carrying out activities

Without class notes or books

Bibliography

Basic:


Complementary:
