250ST022 - Demand of Transportation Systems

Coordinating unit: 240 - ETSEIB - Barcelona School of Industrial Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering
Academic year: 2018
Degree: MASTER’S DEGREE IN SUPPLY CHAIN, TRANSPORT AND MOBILITY MANAGEMENT (Syllabus 2014). (Teaching unit Compulsory)
MASTER’S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2014). (Teaching unit Optional)
ECTS credits: 5
Teaching languages: English

Teaching staff
Coordinator: FRANCESC ROBUSTÉ ANTÓN
Others: Lidia Montero

Opening hours
Time table: Tuesday from 16:30 to 20:00. Requested via email

Teaching methodology
Classes, Exercises, Course Report and Exam

Learning objectives of the subject
Demand, customer, discrete choice, utility, logit, probit, likelihood, entropy, Wardrop, satisfaction, elasticity, surveys, revealed references, stated preferences, Weibull, modal split, assignment, user equilibrium, system equilibrium, McFadden, Daganzo, Spiess, gravity model, calibration.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Hours large group: 0h</th>
<th>0.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>30h</td>
<td>24.00%</td>
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<tr>
<td>Hours small group:</td>
<td>15h</td>
<td>12.00%</td>
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<tr>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>80h</td>
<td>64.00%</td>
</tr>
<tr>
<td>Content</td>
<td>Learning time: 4h</td>
<td>Learning time: 12h</td>
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<tr>
<td>1. Introduction to UTP modeling.</td>
<td>Practical classes: 2h</td>
<td>Practical classes: 4h</td>
</tr>
<tr>
<td></td>
<td>Laboratory classes: 1h</td>
<td>Laboratory classes: 2h</td>
</tr>
<tr>
<td></td>
<td>Self study: 1h</td>
<td>Self study: 6h</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Introduction</td>
<td>Data and space</td>
</tr>
</tbody>
</table>

Learning time: 4h
- Practical classes: 2h
- Laboratory classes: 1h
- Self study: 1h

Learning time: 12h
- Practical classes: 4h
- Laboratory classes: 2h
- Self study: 6h

Learning time: 8h
- Practical classes: 2h
- Laboratory classes: 1h
- Self study: 5h

Learning time: 11h
- Practical classes: 4h
- Laboratory classes: 2h
- Self study: 5h
| 5. Modal split and discrete choice models | **Learning time:** 32h  
Practical classes: 8h  
Laboratory classes: 4h  
Self study: 20h |
|-------------------------------------------|--------------------|
| **Description:**  
Modal split and discrete choice models   |                     |

| 6. Assignment | **Learning time:** 8h  
Practical classes: 2h  
Laboratory classes: 1h  
Self study: 5h |
|----------------|--------------------|
| **Description:**  
Assignment     |                     |

| 7. Behavioural Economics | **Learning time:** 8h  
Practical classes: 2h  
Laboratory classes: 1h  
Self study: 5h |
|--------------------------|--------------------|
| **Description:**  
Behavioural Economics   |                     |

| 8. Traffic and Revenue Forecasting | **Learning time:** 8h  
Practical classes: 2h  
Laboratory classes: 1h  
Self study: 5h |
|------------------------------------|--------------------|
| **Description:**  
Traffic and Revenue Forecasting |                     |

| Exams | **Learning time:** 16h  
Practical classes: 4h  
Self study: 12h |
|--------|--------------------|
| **Description:**  
Two exams |                     |
Course Report

Description:
Course report

Learning time:
- Laboratory classes: 2h
- Self study: 16h

Qualification system

Exercises (20%), course report (30%) and exam (50%)

Bibliography

Basic: