250ST2036 - Sustainable and Green Mobility

The main objective of the course is to provide students with the key insights to manage mobility and plan cities from a sustainable mobility point of view. Students must assimilate basic concepts of transport operations and transport economy, and what sustainable mobility is. The aim is to understand the implications of both urban planning and transport management in sustainable mobility. Finally, students are also expected to consider and debate the effects of the new mobility paradigms from a sustainability perspective.

Coordinator: Ortigosa Marín, Javier

Opening hours

Timetable: Wednesdays 5-6 pm

Prior skills

Students who register for this course should have some background on basic transport operation concepts and be familiar with the main tools and methodologies employed. In addition, it will be useful if students have taken courses on land use planning and / or urban planning.

Teaching methodology

The course has on average 3 lecture hours per week (2 h every week and 2 h every second week). Lectures will combine theoretical concepts with case studies and discussion/debate activities. Students must do a course project and will be also evaluated with a written exam.

Learning objectives of the subject

The main objective of the course is to provide students with the key insights to manage mobility and plan cities from a sustainable mobility point of view. Students must assimilate basic concepts of transport operations and transport economy, and what sustainable mobility is. The aim is to understand the implications of both urban planning and transport management in sustainable mobility. Finally, students are also expected to consider and debate the effects of the new mobility paradigms from a sustainability perspective.

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 medium group: 15h</td>
<td>12.00%</td>
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<tr>
<td></td>
<td>Hours small group: 0h</td>
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<td></td>
<td>Guided activities: 0h</td>
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<td>Self study: 80h</td>
<td>64.00%</td>
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# Content

## Review of basic transport concepts

**Description:**
- Overview of different transport modes and characteristics.
- Externalities.
- Accessibility, generalized costs (private and public transport), marginal social costs, average costs, subsidies and taxes.
- Urban mobility and urban space.
- Active and sustainable transport modes.

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

## Planning for sustainable mobility

**Description:**
- International mobility flows.
- Regional/Metropolitan mobility relationships.
- Land uses and mobility.
- Accessibility and transport infrastructure/services.
- TOD concepts.

**Learning time:** 10h
- Theory classes: 10h

## Managing sustainable mobility

**Description:**
- Road space assignment and urban design.
- Urban mobility and control.
- Traffic management in interurban areas.
- Intermodal operations.
- Road pricing, parking pricing, low emissions areas.
- Pedestrianization, Green infrastructure, ...
- Urban logistics

**Learning time:** 10h
- Theory classes: 10h
250ST2036 - Sustainable and Green Mobility

<table>
<thead>
<tr>
<th>New mobility paradigms and sustainable mobility</th>
<th>Learning time: 4h</th>
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<tbody>
<tr>
<td>Description:</td>
<td>Theory classes: 4h</td>
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<tr>
<td>- Shared mobility.</td>
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<td>- Mobility as a service, big data, pricing.</td>
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<td>- Electrical mobility.</td>
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<td>- New vehicle trends and autonomous mobility.</td>
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**Qualification system**

The final grade of the course will be the arithmetic mean between the final exam and the course project.

**Bibliography**

**Basic:**


**Complementary:**

