Course guide
310423 - 310423 - Urbanism, Sustainable Development and Climate Change

Unit in charge: Barcelona School of Building Construction
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.
Degree: MASTER'S DEGREE IN ADVANCED BUILDING CONSTRUCTION (Syllabus 2014). (Optional subject).
Academic year: 2022  ECTS Credits: 5.0  Languages: Spanish

LECTURER

Coordinating lecturer: MIGUEL YURY MAYORGA CÁRGIENAS

Others:

PRIOR SKILLS

Would you like to acquire skills to advance towards a fairer and more balanced urban planning in spatial, social and environmental terms? If so, the subject Urbanism, Sustainable Development and Climate Change, proposes a training that will allow working from the principles of urban ecology and in a transdisciplinary way, in the preparation of research, studies, projects and strategies for a more sustainable urbanism.

The course offers professionals in the fields of architecture and urban planning in general, a set of knowledge and skills necessary to advance towards: a new urban planning, a sustainable development of urban systems and the improvement of the climatic quality of cities. From integrating to the design and urban planning, sustainability criteria, adaptation of the city and the territory to climate change, from the knowledge of urban ecology, the conservation of biodiversity and ecological connectivity.

TEACHING METHODOLOGY

Theoretical classes, readings, debates, visits and workshop for the development of the course exercise

LEARNING OBJECTIVES OF THE SUBJECT

To introduce from a critical, holistic and comprehensive approach: the evolution towards sustainable urban planning from the perspective of the principles of ecology; the challenges of the new urban agenda and the objectives for sustainable development; and strategies for the improvement and mitigation of climate change conditions. Through reflections and debates on theoretical concepts, the exemplification of current international cases and the elaboration of practical exercises, from a vision that starts from the potential of transformation, transition and improvement of the conditions of the territorial and urban habitat.

In order to:

- To understand the potentials, advantages and challenges that the concept of ecological urban planning implies, through reflections, experiences and case studies at a territorial and urban scale.
- Formulate a set of approaches, methods, instruments and criteria for the implementation of strategies, plans, programs and projects aimed at sustainable urban planning.
- Propose new urban solutions for the management and project of the city and the territory, aimed at improving the habitat, in terms of sustainable development and mitigation of climate change.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided activities</td>
<td>10,0</td>
<td>8.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>15,0</td>
<td>12.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>5,0</td>
<td>4.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>5,0</td>
<td>4.00</td>
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<tr>
<td>Self study</td>
<td>90,0</td>
<td>72.00</td>
</tr>
</tbody>
</table>

Total learning time: 125 h

CONTENTS

1.- Introduction to new urban planning.
Description:
Approach to a historical evolution of urban planning, its approaches, methods and instruments.
Full-or-part-time: 1h
Theory classes: 1h

2.- Bases of Urban Ecology.
Description:
Evolution of environmental awareness and the concept of sustainability.
Full-or-part-time: 1h
Theory classes: 1h

3.- La ciutat i el territori com a ecosistemes.
Description:
Principis de l'Urbanisme Ecològic. Ecocity, Smart Growth, New Urbanism i certificacions per al desenvolupament sostenible.
Full-or-part-time: 1h
Theory classes: 1h

4.- Urban and territorial metabolism.
Description:
Ecological cycles and that of matter, energy flows, diversity and information. Information and entropy. Ecological footprint.
Full-or-part-time: 1h
Theory classes: 1h
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Description</th>
<th>Full-or-part-time</th>
<th>Theory classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>Sustainable territorial models and sustainable landscape planning and management.</td>
<td>Ecological matrix of the territory. Mosaics, rural space, territorial systems of free spaces, biological diversity</td>
<td>1h</td>
<td>1h</td>
</tr>
<tr>
<td>6.0</td>
<td>New Urban Agenda and Sustainable Development Goals.</td>
<td>Critical assessment of its meaning, scope, themes, specification, indicators and financing.</td>
<td>1h</td>
<td>1h</td>
</tr>
<tr>
<td>7.0</td>
<td>New Urban Agenda.</td>
<td>Concepts, background and perspectives.</td>
<td>1h</td>
<td>1h</td>
</tr>
<tr>
<td>8.0</td>
<td>New Urban Agenda Cases.</td>
<td>Experiences and good practices.</td>
<td>1h</td>
<td>1h</td>
</tr>
<tr>
<td>9.0</td>
<td>Urban sustainability indicators.</td>
<td>Cases and main international references.</td>
<td>1h</td>
<td>1h</td>
</tr>
<tr>
<td>10.0</td>
<td>Sustainable urban models and strategies.</td>
<td>Proximity, compactness, containment in urban renewal. Diversity and mixture, social cohesion, sustainable mobility, energy autonomy and waste management.</td>
<td>1h</td>
<td>1h</td>
</tr>
</tbody>
</table>
11.- Climate change and urban climatology.

Description: Urban climate analysis techniques and large-scale implementation measures in planning

Full-or-part-time: 1h
Theory classes: 1h

12.- Climate change and urban resilience.

Description: Urban and small-scale adaptation. Concepts, cases and good practices.

Full-or-part-time: 1h
Theory classes: 1h

GRADING SYSTEM

Follow-up continuity evaluations will be carried out according to the development of the course workshop work, distributed in deliverables and stages: hypothesis (20%), analysis (30%) and final project proposal (50%).
BIBLIOGRAPHY

Basic:
- Herce, Manuel. Infraestructuras y medio ambiente II: Gestión de recursos energéticos, emisiones y residuos.
- Rueda, Salvador. Barcelona, ciudad mediterranea, compacta y compleja. Una visión de futuro más sostenible.