

69759 - Urban development

Syllabus Information

Academic year: 2023/24

Subject: 69759 - Urban development

Faculty / School: 100 - Facultad de Ciencias

Degree: 627 - Master's Degree in Circular Economy

ECTS: 6.0

Year: 01

Semester: Second semester

Subject type: Optional

Module:

1. General information

The *Urban Development* subject is designed for students with science or engineering degrees. It will teach them how to apply the principles of circular economy to the management of cities. The subject is taught at the University of Lleida.

It is aligned with Sustainable Development Goal (SDG) No. 12 (Responsible Production and Consumption) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of its learning results provides training and competence to contribute to some extent to the achievement of the Goal.

2. Learning results

- To know the concepts of sustainability and sustainable development and be able to apply them to urban planning (eco-city).
- To know the main elements and parameters of urban metabolism and the main causes for its degradation.
- To know the techniques and criteria for the implementation of circular economy in cities and its impact in them.
- To be able to apply the criteria and techniques of the "cradle to cradle" circular economy to urban planning and management as well as building

3. Syllabus

Sustainability and sustainable development.

2. Circular architecture and construction.

2.1- Cycle of materials.

2.2- Water cycle.

2.3- Energy cycle

2.4- Social dimension. Habitability. Collaborative housing(*cohousing*).

3. Circular urbanism.

3.1- Ecocities.

3.2- Urban metabolism.

3.3- Urban logistics.

3.4- Nature-based solutions.

3.4.1. Urban ecosystem services.

3.4.2. Urban green infrastructure: Green roofs and facades.

3.4.3. Urban and periurban horticulture.

3.4.4. Urban forests.

3.4.5. Monitoring of urban development for environmental impact assessment.

3.4.6. Characterization of urban development in the wildland-urban interface.

3.4.7. Natural hazard adaptation strategies and urban design.

3.5- Sustainable Urban Drainage Systems (SuDS).

3.5.1. Water reuse.

3.6- Urban-rural dialogue

3.6.1. Macroprojects as a form of development. Involvement in land management.

3.6.2. Relationship between economic model and biodiversity.

3.6.3. New urban needs. New businesses around "nature".

4. Academic activities

Master classes: 16 hours

Sessions of 50 minutes each for the entire group. Teachers explain the theoretical contents and solve representative applied problems. Teaching materials are available in Moodle.

Problem solving and case studies: 44 hours of student work, including 8 face-to-face hours.

Students prepare a report, including its presentation, and the solving of problems and cases.

Study: 84 hours

Students must study theory and read supplementary readings.

Assessment tests: 6 hours.

Students take a final written exam that includes short, oral questions and quick problems via *Moodle*.

5. Assessment system

The subject is assessed using two evaluation methods: continuous and global. For this purpose, the grades obtained in the following tests will be used:

- Report (rated I). The report consists of a report on a topic related to the subject or the critical analysis of a research or popularization article. The reports are sent to the teacher electronically.
- Public presentation of a group project on a topic related to the subject. The project is presented in the form of a report and public presentation in a videoconference or in the most convenient format for the development of the subject (P).
- Problem solving and case studies (C). The solving of these exercises is part of the continuous assessment of the detail of the topics of the subject. They may be solved individually or in groups. Students must submit the results of these exercises on a biweekly basis following the guidelines and presentation format that will be established during the development of the different topics that make up the subject.

In the event that a student cannot follow the continuous assessment, a single assessment test consisting of oral short questions, and quick problems, via *Moodle*, on the topics of the subject (F) will be performed.

The grades obtained by each student in the above evaluation activities will be weighted according to the following formulas:

Formula 1:

Final grade: $0.25 \times I + 0.5 \times P + 0.25 \times C$

Formula 2:

Final grade: F

It is not necessary to achieve minimum grades in the assessment tests for the application of the above formulas. The final grade will be the best grade obtained in each case after the application of formula 1 and formula 2.