Course guide
330464 - MUR - Urban and Waste Mining

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.
Degree: BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING (Syllabus 2021). (Compulsory subject).
Academic year: 2023  ECTS Credits: 6.0  Languages: Catalan, Spanish

LECTURER
Coordinating lecturer: Bascompta Massanès, Marc
Others: Bascompta Massanès, Marc  Hoffmann Sampaio, Carlos

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES
Transversal:
06 URI N3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT
Knowing how to solve problems related to urban mining and the transition to a circular economy. Considering the technological, environmental and social aspects associated with the management of raw materials.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>60,0</td>
<td>40.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
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</tbody>
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Total learning time: 150 h

CONTENTS

1. Introduction to urban mining

Description:
Understand the concepts related to: economic geology and mining, environmental and resource economics, resource criticality and the environmental and social impacts associated with the use of raw materials.

Full-or-part-time: 25h
Theory classes: 13h
Self study : 12h
## 2. Materials for circularity

**Description:**
The following contents will be covered:
- Ecodesign and materials design
- Sustainable management of critical raw materials
- Life cycle assessment and industrial ecology
- Resource flows
- SLCA and LCA

**Full-or-part-time:** 46h  
Theory classes: 10h  
Laboratory classes: 6h  
Self study : 30h

## 3. Waste treatment and management

**Description:**
In this content we work on:
- Characterisation of materials
- Quality control and assurance
- Recycling technologies and management systems

**Full-or-part-time:** 42h  
Theory classes: 6h  
Laboratory classes: 6h  
Self study : 30h

## 4. Innovation and change management

**Description:**
The following contents will be covered:
- Circular business models
- Environmental, social and corporate governance (ESG)

**Full-or-part-time:** 14h  
Theory classes: 2h  
Laboratory classes: 6h  
Self study : 6h

## 5. Spatial planning for a circular economy

**Description:**
Usage of a geographic information system (GIS)

**Full-or-part-time:** 23h  
Theory classes: 8h  
Laboratory classes: 12h  
Self study : 3h
BIBLIOGRAPHY

Basic: