

## Course guide

### 290223 - LOW3LI - Low3 Living Zero

**Last modified:** 21/06/2023

**Unit in charge:** Vallès School of Architecture  
**Teaching unit:** 753 - TA - Department of Architectural Technology.

**Degree:** DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Optional subject).

**Academic year:** 2023    **ECTS Credits:** 3.0    **Languages:** Catalan, Spanish, English

#### LECTURER

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**Coordinating lecturer:** Masseck, Torsten Andreas

**Others:**

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

EP2G. An aptitude for solving passive environmental conditioning, including thermal and acoustic insulation, climate control, energy performance and natural lighting (T).

EP19G. Adequate knowledge of ecology, sustainability and the principles of conservation of energy resources and environmental resources.

**Generical:**

CG5G. Knowledge of the physical problems, technologies and functions of buildings so as to provide them with comfortable indoor conditions and protection from climate factors.

CG5A. (ENG) Capacidad de comprender las relaciones entre las personas y los edificios y entre éstos y su entorno, así como la necesidad de relacionar los edificios y los espacios situados entre ellos en función de las necesidades y de la escala humanas.

**Transversal:**

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

CT1. ENTREPRENEURSHIP AND INNOVATION: To get knowledge on the processes scientific research is based on, as well as the methods used to transfer results among the several stakeholders involved in R+D.

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: To understand the complexity of economic and social phenomena of welfare societies; to be able to relate wellbeing with globalization and sustainability; to achieve skills for a balanced and compatible use of technology, economy and sustainability.

CT7. FOREIGN LANGUAGE. Knowledge of a foreign language, preferably English, at an oral and written level that is consistent with graduates' future needs.

**Basic:**

CB3G. Students must be able to collect and interpret relevant data (generally in their field of study) to make judgements that include reflection on relevant social, scientific and ethical topics.

CB4G. Students must be able to transmit information, ideas, problems and solutions to specialised and lay audiences.

#### TEACHING METHODOLOGY

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The course explores a new mixt learning format, virtual and face-to-face, through combining the concept of a MOOC (Massive Open Online Course) with 4 sessions at the Living Lab LOW3. The practical exercises of the course will be linked to the assessment and improvement of the environmental impact of housing and lifestyle of the participants and to the international "Sustainable Lifestyle Accelerator" project. ([www.suslifespain.blogspot.com](http://www.suslifespain.blogspot.com)).

## LEARNING OBJECTIVES OF THE SUBJECT

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Transformative learning for a societal model and a personal lifestyle with less environmental impact is one of the main challenges of our time.

Main objective of the course LOW3: Living Zero! is to introduce into basic concepts of sustainability and to disseminate the generated knowledge of the LOW3 prototype in the field of housing and a more sustainable lifestyle.

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### Meeting Week 1

**Description:**

Initial in-person activity (Living Lab LOW3): get known to the prototype and the course methodology

**Full-or-part-time:** 4h

Theory classes: 2h

Self study : 2h

### Module 1: Sustainable Lifestyles

**Description:**

Biocapacity, ecological economy, consumption, resources

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

### Module 2: Sustainable Housing Concepts

**Description:**

Habitability, comfort, flexibility, collective housing

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

### Forum Week 1

**Description:**

Participation in virtual debates about practical exercises 1 and 2

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

### Module 3: Photovoltaic Technologies

**Description:**

History, technologies, building integration, smart grids

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h



#### Module 4: Solar Thermal Technologies

**Description:**

History, technologies, building integration, smart grids

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

#### Meeting Week 2

**Description:**

In-person activity (Living Lab LOW3): Evaluation of ecological footprint and carbon footprint

**Full-or-part-time:** 4h

Practical classes: 2h

Self study : 2h

#### Forum Week 2

**Description:**

Participation in virtual debates about practical exercises 3 and 4

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

#### Meeting Week 3

**Description:**

In-person activity (Living Lab LOW3): Evaluation of reduction of energy consumption and generation of renewable energies

**Full-or-part-time:** 4h

Practical classes: 2h

Self study : 2h

#### Module 5: Materials

**Description:**

Lightweight buildings, wood construction, embodied energy, life cycle

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h



#### Module 6: Water

**Description:**

Water as a resource, domestic consumption, storage and treatment

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

#### Forum Week 3

**Description:**

Participation in virtual debates about practical exercises 5 and 6

**Full-or-part-time:** 4h

Guided activities: 2h

Self study : 2h

#### Meeting Week 4

**Description:**

Final in-person activity (Living Lab LOW3): Evaluation of exercises on materials and reduction of water consumption. Course summary.

**Full-or-part-time:** 4h

Theory classes: 2h

Self study : 2h

## GRADING SYSTEM

1. Self-evaluation online secures the adquisition of knowledge: 30%
2. Debate forums, together with in-person meetings, improve collective learning and allow evaluating the acquired knowledge: 30%
3. Practical exercises for each learning module include individual reflections of students regarding the specific topics, to be delivered at the end of the course: 40%

## RESOURCES

**Other resources:**

- Explanatory video of the MOOC course produced for IVERSITY MOOC 2013: <http://www.youtube.com/watch?v=vCe37LAjwoo> />•
- Blog of Living Lab LOW3: <http://livinglab-low3.blogspot.com.es/> />• Blog of SLA project: [www.suslifespain.blogspot.com](http://www.suslifespain.blogspot.com)
- Each online learning module has its own bibliografic section