

30748 - Architecture and Sustainability

Syllabus Information

Academic Year: 2020/21

Subject: 30748 - Architecture and Sustainability

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 470 - Bachelor's Degree in Architecture Studies

ECTS: 6.0

Year: 5

Semester: Second semester

Subject Type: Optional

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, and practice sessions.

The course consists of a theoretical part in which knowledge about techniques for more sustainable architecture is introduced.

In parallel, practical activities are devoted to the development of a project that consists of checking the energy demand of a building and generating its energy certification by means of official software. The exercises are performed individually during the semester and are supervised during the course, thus allowing a continuous evaluation.

4.2.Learning tasks

This course is organized as follows:

1. **Lectures** and problem-solving (large group).
2. **Practice sessions** (intermediate group).
 - Case study discussions.
 - Tutorial sessions.
3. **Visits** to on-site building constructions, buildings or conferences.

4. Scheduled **tutorials**.
5. **Written test**

Autonomous work and study

6. Studying and individual work.
7. Performing tasks and projects individually and/or in small groups.

Total hours of student work: 150 hours (6 ECTS)

Theoretical credits: 75 hours (3 ECTS)

Practical credits: 75 hours (3 ECTS)

4.3.Syllabus

This course will address the following topics:

Sustainability in Architecture:

- Architecture and sustainability throughout history
- Passive house standard and sustainability certifications (VERDE, Hades, Perfil de Calidad, etc.).
- Examples of sustainable buildings.

Sustainable use of natural resources

- Sustainable management of materials and waste.
- Efficiency in water consumption.

Energy saving

- Limitation of energy demand of the building
- Energy efficiency in facilities
- Integration of renewable energy
- Energy certification

4.4.Course planning and calendar

- Lectures of 2 hours per week according to the College schedule.
- Practice sessions of 2 hours per week according to the School schedule.
- The course assignments will have partial pre-delivery and final delivery dates that will be defined at the beginning of the course.
- The date of the theoretical test will be included in the School exams calendar.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the College of Higher Engineering and Architecture (EINA) website (<https://eina.unizar.es/>) and Moodle.

4.5.Bibliography and recommended resources