Universidad Zaragoza

Year : 2020/21

69206 - Innovative materials in Architecture

Syllabus Information

Academic Year: 2020/21
Subject: 69206 - Innovative materials in Architecture
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 519 - Master's in Architecture
ECTS: 3.0
Year: 1
Semester: First 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 achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, problem-solving, case studies, laboratory sessions, visits, seminars by professionals, and an academic essay.

4.2.Learning tasks

The course includes the following learning tasks:

- A01/A02 **Lectures, case studies,and seminars** given by professionals (organised by the Materials Science and Metallurgical Engineering department) (22 hours).
- A03 **Laboratory and practice sessions** (6 hours)
- A04 **Visits** (2 hours). Visits to companies or Materials Centres/Institutes/Museum that are relevant to the field of architecture.

4.3.Syllabus

The course will address the following topics:

Theory

1. Introduction: Innovative materials in Architecture
2. Metals and light alloys: Stainless Steels, CorTen Steels, Titanium, Aluminium, Copper and its alloys, Zinc...
3. Plastics: Thermoplastics, Thermosets, Elastomers, foams, textile architecture...
4. Polymer matrix composites: matrices and fibres. Laminates, sandwich elements...
5. Glass and ceramics
6. Smart materials. Uses and applications in industry and Architecture

Laboratory and practice sessions

1. Selection of materials: problems and use of CES (Cambridge Engineering Selector) data base
2. Testing of materials
3. Management of commercial catalogues or informative sheets of innovative materials

4.4.Course planning and 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 EINA website.

4.5.Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?id=8837