

29970 - History of technology and architectural construction

Syllabus Information

Academic year: 2023/24

Subject: 29970 - History of technology and architectural construction

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 558 - Bachelor's Degree in Industrial Design and Product Development Engineering

ECTS: 4.0

Year: 4

Semester: First semester

Subject type: Optional

Module:

1. General information

The main objective is the knowledge and awareness of the importance that builders and technologists have played in each of the steps that have been taken throughout technical and construction history. The subject is developed around materials, energy and information transmission.

The progress of technology and architecture is presented as a fundamental basis for improving the living conditions of human beings, and should be continued in this line to achieve the Sustainable Development Goals (SDGs) framed in the Agenda 2030. In this line, social changes are analysed through improvements in working conditions and the tools used, in line with the eighth SDG.

2. Learning results

- To understand the role played by materials, energy and information throughout history in research, development and innovation aimed at the design and development of products in relevant fields of economic, industrial, professional and academic activity.
- Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
- Acquire a knowledge base on the stages of procurement of goods and infrastructure.
- Value new discoveries that satisfy old demands and are the subject of scientific-technical progress.
- Know the evolution of production systems, energies, materials and spaces used.
- Be aware of the need for scientific, technological and architectural progress to be useful to the entire population, respecting the habitat, equality among human beings - including explicitly gender equality - and, in general, all the proposals of the SDGs

3. Syllabus

1. Introduction to the history of technology and architectural construction.
2. Prehistory. Mesopotamia and Egypt.
3. Science and Technology in the Classical world: Greece and Rome.
4. The medieval revolution: tools and energies. The transmission of knowledge.
5. Renaissance engineers and architects. Mining and machinery.
6. Proto-industrialization and the scientific revolution.
7. Steam. The industrial revolution.
8. Energy, transportation and steel. Construction applications.
9. Technological development and communications.
10. Industry and architecture in Aragon.
11. History of heritage restoration.
12. History of specific topics.

4. Academic activities

Lectures cover the more theoretical aspects (20 hours) and are complemented with problem sessions (6 hours) in which reflections are made on the topic developed and the social effects of technical changes are debated.

The practical sessions (14 hours) consist of visits to exhibitions and buildings that complement the topics developed in the subject.

To this development of the subject it must also be added the personal work of the students: elaboration of works (16 hours), the

deepening of the subject (40 hours) and the evaluation (4 hours)

5. Assessment system

The subject offers two evaluation modalities:

Continuous assessment:

Through the completion of an individual work, the passing of which is mandatory to pass the subject. The same will be presented publicly and it will be valued: Structuring, application of the contents of the subject, written presentation and oral and bibliographical references.

The continuous evaluation is completed with the delivery of the practice reports, which can be substituted or complemented by thematic tasks or tests through Moodle.

In addition, active participation in the development of classes and practices will be taken into account.

Global assessment.

Those students who do not wish to take part in the continuous evaluation process must take the final written exam of the whole subject (theory and practice). It will consist of the development of several questions on the topics of the subject, published in Moodle.

The weight of each of these activities in the final summative evaluation is shown in the following table:

| | | |
|-----------------------|-----------------------|------|
| | Work | 50% |
| | Practice/task reports | 20% |
| Continuous assessment | | |
| | Thematic test | 15% |
| | Active participation | 15% |
| Global assessment | Final written exam | 100% |