

## 28613 - Materials II

### Syllabus Information

**Academic year:** 2023/24

**Subject:** 28613 - Materials II

**Faculty / School:** 175 - Escuela Universitaria Politécnica de La Almunia

**Degree:** 422 - Bachelor's Degree in Building Engineering

**ECTS:** 6.0

**Year:** 2

**Semester:** First semester

**Subject type:** Compulsory

**Module:**

### 1. General information

The aim of this subject is to learn about the different types of materials that exist in construction, and to learn the basic fundamentals of materials science, their properties, applications, behaviour in service, and the technology developed for the improvement of the properties of materials, in such a way as to allow any student to choose, in a first approximation, the most suitable material for each application.

These goals are aligned with some of the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to the achievement of the objectives 8.4, 12.2 and 12.5.

### 2. Learning results

- know the behavior and technology of materials.
- Know and explain the manufacturing technologies and the technologies for the installation of the different materials.
- Relate material properties to structure and/or microstructure.
- Relate the properties of the materials, obtained from the tests, with the applications and their behavior in service
- Choose materials according to the applications and their performance in service.
- Know the importance of innovation in the development of manufacturing, commissioning and applications of materials materials.
- Critically analyze the results obtained in an experimental work and to draw correct conclusions, as well as to propose future work
- Conduct, individually and/or in a team, a research experiment in the field of engineering

Materials in a correct manner and observing the necessary standards of safety, hygiene, economy of means, etc

### 3. Syllabus

- Unit 0: binders and binding agents
- Unit 1: Cements
- Unit 2: limes
- Unit 3: casts
- Unit 4: bitumens

### 4. Academic activities

- Participative master class.  
The contents of the subject will be presented, with a theoretical and practical orientation towards the testing of construction materials
- Resolution of problems and cases, as well as presentations.  
Practical material characterization problems will be solved. The students will individually make a brief presentation of a part of the syllabus.
- Practical and laboratory tests will be carried out.
- Study and personal work: Includes preparation and study of subject matter, as well as case studies and presentations
- Assessment tests.

### 5. Assessment system

### **Continuous assessment**

Be eligible for the Continuous Assessment system, students must attend at least 80% of the classes and complete the laboratory practicals must be completed.

The student must demonstrate achievement of the intended learning outcomes through assessment of the following activities:

Written Assessment tests: They will consist of one or more classic written test, (theory + practice) scored from 0 to 10 points. At least 2 test, the last one coinciding with the date of the call.

Exercises, theoretical questions and proposed works: The teacher will propose exercises, problems, practical cases, theoretical questions, etc. to be solved individually in class or through moodle.

Individual activities in class: This activity will be materialized in the presentation and discussion of a PPT work, in class and directed to their classmates.

Laboratory practices: They will not be included in the final grade, but they must be taken in order to be eligible for this type of assessment.

Assessment/weighting activity:

Individual in-class tests and examinations on theory and practical exercises, theoretical questions and assignments

proposed (PPT presentations). 50%. It will be necessary to score at least 4 out of 10 points to mediate with the test to date of call.

Written final test of theory and problems: 50 %. A minimum of 4 out of 10 points on will be required for the overall test in order to be able to mediate with the previous test.

Laboratory practices: 0 %.

A scoring exercise of theory and practice of topic 1 of the subject (Cements) is carried out, in case of passing it, at the student will only have to take the test of the remaining topics. If you do not pass this exercise, you will take the whole subject of the course at the call test.

### **Global assessment test.**

For those students who decide to opt for this second system or do not comply with the requirements of the continuous assessment.

Written theory exam as of the date of call: 50 %.

Written test problems at the date of call: 50 %

The subject will have been passed based on the sum of the scores obtained in the different activities developed, each one of them contributing with a minimum of 50%. Each of the tests (theory/problems) will contribute to 50% of the grade, being essential to obtain at least 40% in each of them.