

## 66228 - Paper Technology

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 66228 - Paper Technology

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

**Degree:** 531 - Master's in Chemical Engineering

**ECTS:** 3.0

**Year:**

**Semester:** 531-First semester o Second semester

266-Second semester

107-Second semester

**Subject type:** Optional

**Module:**

### 1. General information

The objectives of the subject are:

- To provide students with basic knowledge of the paper manufacturing process and its main aspects.
- To integrate the knowledge acquired throughout their undergraduate studies and other subjects of this master and apply it to a production process of great importance, such as the production of pulp and paper.

### 2. Learning results

1. To identify the stages and chemicals used in the different paper production processes.
2. To carry out the basic design of a pulp and paper production process.
3. To know the analyses used for product quality control.
4. To apply knowledge of environmental technologies to propose appropriate treatments for the effluents of a production plant.
5. To know how the equipment, unit operations, chemicals and quality control used in the different paper production processes work and how to modify them.

### 3. Syllabus

- Topic 1. The paper industry. Types and particularities.
- Topic 2. Raw materials.
- Topic 3. Types of paper. Structure and properties of paper.
- Topic 4. The pulp production process. Unit operations. Design of production processes.
- Topic 5. Paper production and quality control.
- Topic 6. Chemical products in the paper industry.
- Topic 7. Environmental aspects of the pulp and paper industry.

### 4. Academic activities

Master class 15 h

Problem solving and case studies, 10 h.

Completion of practical application works: 12 h

Special practices and laboratory 5 h

Theory study and tutorials 30 h

Assessment tests: 3 h

This subject is English Language Friendly (ELF) in at least one group. The study and class material is available in English and the teachers will attend office hours and prepare and evaluate students in English if they don't speak Spanish.

### 5. Assessment system

**Option 1.** Evaluation by means of assignments and a written test:

1. Final evaluation written test consisting of cases and short questions. The grade will range from 0 to 10 and will represent 50% of the student's final grade in the subject. The minimum grade for this part, so that it can be averaged

with the work grade, is 4.0.

2. Completion of three short papers or cases related to aspects of the subject. The work will be carried out in groups or individually. The grade will range from 0 to 10 and will represent 50% of the student's final grade in the subject.

**Option 2.** Evaluation by means of a single written test:

1. Written test with questions and practical cases related to the subject. The grade will range from 0 to 10 and will represent 100% of the student's final grade in the subject.

## **6. Sustainable Development Goals**

- 9 - Industry, Innovation and Infrastructure
- 12 - Responsible Production and Consumption
- 17 - Partnerships for the Goals