

## 30166 - Maintenance Management

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 30166 - Maintenance Management

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

**Degree:** 425 - Bachelor's Degree in Industrial Organisational Engineering

**ECTS:** 6.0

**Year:** 4

**Semester:** First semester

**Subject type:** Optional

**Module:**

### 1. General information

**Objective:** to convey the need for continuous improvement in the Maintenance Departments of all types of companies, integrating multiple techniques that the market and science offer.

This requires the correct use of the most common computer applications to obtain information on power components and their applications, and also the correct interpretation of the technical documentation of the components used, as well as the computer applications for circuit simulation.

Indicators of having achieved the objectives will be: ability to analyze typical maintenance cases, covering its machinery and facilities, cost analysis, productivity improvements and proposals for maintenance plans that improve services.

### 2. Learning results

- Identify maintenance as an integrated system that requires planning, design, engineering and control through the use of statistical and optimization techniques.
- Use quantitative techniques for the operation, control and improvement of maintenance systems.
- Select and interpret appropriate information to propose and evaluate solutions to common technical needs and problems in the field of maintenance, with a level of accuracy consistent with that of the different magnitudes involved.
- Establish criteria to determine the most appropriate conditions for outsourcing maintenance services.
- Know how to use the general methodology and the appropriate software tools to work in maintenance management.

### 3. Syllabus

#### **Theoretical contents**

Block 0:INTRODUCTION

Block 1: GENERAL INFORMATION ON MAINTENANCE TECHNOLOGY

1-. Evolution and structure of maintenance

2-. Management software

Block 2. OPTIMIZATION OF MAINTENANCE MANAGEMENT

3-. Reliability and Quality

4-. Warehouse and maintenance material

5-. Optimization of economic management

Block 3: MAINTENANCE PLANNING AND PROCESSES

6-. Organization of preventive maintenance.

7-. Predictive Maintenance

8-. Energy and environmental maintenance

Block 4: CASE STUDIES ON MACHINES AND SYSTEMS

9-. Case studies on machines

10-. Case studies in installations

#### **Practical contents**

Practice 1: GENERAL INFORMATION ON MAINTENANCE TECHNOLOGY

Practice 2: OPTIMIZATION OF MAINTENANCE MANAGEMENT

Practice 3: MAINTENANCE PLANNING AND PROCESSES

Practice 4: CASE STUDIES ON MACHINES AND SYSTEMS

## 4. Academic activities

### Generic face-to-face activities:

- Theoretical classes: Explain theoretical concepts and develop practical examples.
- Practical classes: Carry out problems and case studies.
- Practical classes: Students will be divided into groups, guided by the teacher's tutorial action.
- Defense and presentation of topics: On specific contents assigned to each group.

### Generic non face-to-face activities:

- Study and assimilation of theory.
- Understanding and assimilation of solved cases.
- Preparation of seminars, solving proposed problems...
- Participate in Forums/Moodle.
- Prepare and prepare scripts and reports.
- Prepare continuous and global evaluation tests.

**Tutored autonomous activities:** Seminars and tutorials under the supervision of the teacher.

**Reinforcement activities:** Through Moodle, activities will be conducted to reinforce basic content.

## 5. Assessment system

The subject will be evaluated by the continuous assessment system by means of the following activities:

- **Proposed Assignments** (50% of the grade, minimum 4 out of 10) In each of the assignments the results obtained ,the process followed and oral exposition will be evaluated .

- **Written assessment tests and proposed assignments** (50% of the grade, minimum 4 out of 10) The evaluation test may consist of theoretical questions, problems to be solved and theoretical-practical questions. The proposed works may replace the exam of a part of the subject in the continuous assessment method.

To be eligible for the Continuous Assessment system, students must attend at least 80% of the face-to-face classes (practicals, technical visits, lectures, etc.)

### Global assessment test.

Following the regulations of the University of Zaragoza in this regard, if the student has not passed any of these activities during the semester, they will have the opportunity to pass the subject by means of a global test in two official calls.

## 6. Sustainable Development Goals

- 4 - Quality Education
- 5 - Gender Equality