

Academic Year: (2020 / 2021)

Review date: 28-01-2021

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: DIAZ ALVAREZ, ANTONIO

Type: Compulsory ECTS Credits : 3.0

Year : 2 Semester : 2

OBJECTIVES

By the end of this subject, students will be able to have:

1. knowledge and understanding of the key aspects of production and manufacturing systems, metrology and control of quality.
2. the ability to apply their knowledge and understanding to identify, formulate and solve problems related to production and manufacturing systems, metrology and control of quality using established methods;
3. the ability to apply their knowledge and understanding to analyse engineering products, processes and methods;
4. an understanding of design methodologies of production and manufacturing systems, and an ability to use them.
5. workshop and laboratory skills in production and manufacturing systems.
6. the ability to select and use appropriate equipment, tools and methods to solve problems related to production and manufacturing systems, metrology and control of quality;
7. an understanding of applicable techniques and methods in production and manufacturing systems, metrology and control of quality, and of their limitations;

DESCRIPTION OF CONTENTS: PROGRAMME

Chapter 1: Introduction

Chapter 2: Manufacturing processes and systems.

Chapter 3: Manufacturing costs. Production times.

Chapter 4: Design and manufacturing. Concurrent engineering.

Chapter 5: Measurement process, metrology and control of quality

Chapter 6: Fundamentals of automation for production and manufacturing systems.

LEARNING ACTIVITIES AND METHODOLOGY

- Master classes
- Practical classes in reduced groups: problems and cases studies.
- Individual tutorships and personal student work; oriented to the acquisition of theoretical concepts.
- Laboratory practices: 4 sessions of 2 hours

To pass the subject it is compulsory to pass the laboratory practices, for which it is necessary to do them and obtain an APTO grade, or otherwise, to take an exam corresponding to the laboratory practices as part of the final exam of the subject, which will have a 30% weight in the final exam grade.

ASSESSMENT SYSTEM

- 2 Partial exams (30%)
- 1 Project in group (15%)
- End-of-term-examination: 55% final grade (minimum value: 4/10). Note: In case an APTO grade has not been obtained in the laboratory practices, the final exam will include a laboratory practice exam with a weight of 30% in the final exam grade.

Both, the attendance to the laboratory practices and the final report are obligatory.

% end-of-term-examination: 60

% of continuous assessment (assignments, laboratory, practicals...): 40

BASIC BIBLIOGRAPHY

- REGH, A.R. Computer-Integrated Manufacturing, Prentice Hall, 2001
- SINGH, N. Systems Approach to Computer-Integrated Design and Manufacturing, Ed. John Wiley & Sons, 1996
- Serope Kalpakjian Manufacturing Engineering And Technology., Addison-Wesley Pub, 2001