Machine Design

Academic Year: (2019 / 2020) **Review date: 11-12-2019**

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: QUESADA GONZALEZ, ALEJANDRO

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

OBJECTIVES

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

1. a systematic understanding of the key aspects and concepts of machine design and calculation.
2. the ability to apply their knowledge and understanding to identify, formulate and solve problems of machine design and calculation using established methods.
3. the ability to apply their knowledge and understanding to develop and realise mechanical designs to meet defined and specified requirements.
4. an understanding of methodologies in machine design and calculation, and the ability to use them.
5. the ability to combine theory and practice to solve problems of machine design and calculation.
6. an understanding of applicable techniques and methods in machine design and calculation, and of their limitations.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Mechanical elements resistance.
2. Machines tribology.
3. Mechanical systems and components calculation.
4. Fatigue calculations.
5. Mechanical criteria for components selection.
6. Complex machine calculation examples.

LEARNING ACTIVITIES AND METHODOLOGY

Masterly expositions, exercises in classroom and/or laboratories and personal work.

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

BASIC BIBLIOGRAPHY

- J. L. Pedrero Tecnología de Máquinas, UNED.
- Profesores de la asignatura Apuntes de Cálculo y Diseño de Máquinas, a, 2016
- R. Avilés Análisis de fatiga en máquinas, Thompson.
- San Román, Muñoz. Diseño de Elementos Mecánicos sometidos a Fatiga, ISVA.
- Shigley, J. E. Diseño en Ingeniería Mecánica, McGraw Hill.