

Mechanical systems for clinical engineering

Academic Year: (2023 / 2024)

Review date: 31-05-2023

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: CASTEJON SISAMON, CRISTINA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

basic and fundamental knowledge of mechanism and machine theory

OBJECTIVES

COMPETENCES THAT THE STUDENT ACQUIRES WITH THIS MATTER

CB6 development and / or application of original ideas.

CB7 That students know how to apply the acquired knowledge and their ability to solve problems in new environments within or multidisciplinary contexts related to their area of study.

CB9 That students know how to communicate their conclusions and the knowledge and ultimate reasons that sustain them to specialized and non-specialized audiences in a clear and unambiguous way.

CG1 Ability to learn new methods and technologies, based on the mastery of scientific subjects and specialized techniques of Clinical Engineering, as well as to adapt to new situations.

DESCRIPTION OF CONTENTS: PROGRAMME

Mechanical systems in clinical engineering

The contents covered by this subject are:

- Determination of functional blocks of systems and mechanical equipment.
- Assembly and disassembly of mechanical systems
- Characterization of the operation of pneumatic and electro-pneumatic components
- Characterization of the operation of hydraulic and electro-hydraulic components
- Assembly of pneumatic and electro-pneumatic / hydraulic and electro-hydraulic circuits

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES OF THE STUDY PLAN REFERRED TO MATTERS

AF1 Theoretical class

AF3 Theoretical practical classes

AF4 Laboratory practices

AF5 Tutorials

AF7 Individual student work

AF9 Face-to-face evaluation tests

Code

Activity No. Total hours No. Presential hours% Presence Student

AF1 10 10 100%

AF3 11 11 100%

AF4 3 3 100%

AF5 15 3 20%

AF7 10 0 0

AF9 4 4 100%

TOTAL MATTER 53 31 58.49%

ASSESSMENT SYSTEM

ASSESSMENT SYSTEMS OF THE STUDY PLAN REFERRED TO SUBJECTS

SE1 Participation in class

SE2 Individual or group work carried out during the course

SE3 Final exam

ORDINARY CALL:

SE1	5% (to add)
SE2	50%
SE3	50%

System of	
Evaluation	Minimum weight (%) Maximum weight (%)
SE1	0% 20%
SE2	30% 50%
SE3	30% 70%

----- Extraordinary call:

- The final grade for students who attend the extraordinary call may be:
(1) 40% of the extraordinary exam and 60% of the continuous evaluation.
(2) 100% of the extraordinary exam.

% end-of-term-examination:	50
% of continuous assessment (assignments, laboratory, practicals...):	50

BASIC BIBLIOGRAPHY

- Carnicer Royo, Enrique Oleohidráulica : conceptos básicos, Paraninfo, 1998
- Erdman, A.G. & Sandor, G.N. Diseño de Mecanismos. Análisis y Síntesis, Prentice Hall, 1998
- Norton, Robert L. Diseño de maquinaria : síntesis y análisis de máquinas y mecanismos, McGraw-Hill,, 2009
- Peláez Vara, Jesús Neumática industrial : diseño, selección y estudio de elementos neumáticos, CIE Dossat , 2000