

## Physics

Academic Year: ( 2019 / 2020 )

Review date: 29-04-2019

Department assigned to the subject: Department of Physics

Coordinating teacher: BRIZ PACHECO, SUSANA

Type: Basic Core ECTS Credits : 6.0

Year : 1 Semester : 1

Branch of knowledge: Engineering and Architecture

## STUDENTS ARE EXPECTED TO HAVE COMPLETED

Physics and Mathematics in High school

## COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

Acquire the knowledge of basic physical phenomena related with engineering.

Understanding the mathematical models involved in general physics.

Understanding and using the scientific method, and scientific language.

Development of reasoning strategies and techniques for analysing and solving problems.

Analysis and interpretation of experimental data.

Dealing with laboratory instruments.

## DESCRIPTION OF CONTENTS: PROGRAMME

Topics covered:

Particle kinematics. Particle dynamics. Coulomb law. Electric field. Gauss law. Electric potential. Conductors.

Capacitors, dielectrics and field energy. Magnetic forces and magnetic field. Sources of the magnetic field. Magnetic materials. Faraday induction law. Wave propagation. Acoustic and electromagnetic waves.

## LEARNING ACTIVITIES AND METHODOLOGY

Lectures on the specific topics together with a simple guide for problem solving. Provide a theoretical background on physics (3 ECTS).

Recitation classes, discussion of specific concepts previously addressed, and solving assigned problems (3 ECTS).

Practical laboratory sessions, the pupils must carry out experimental measurements and analyse the results.

## ASSESSMENT SYSTEM

In the laboratory, a report of each experiment should be submitted by the student, these reports together with the work performed and the attitude in the laboratory accounts for 15% of the final mark . Attendance to laboratory sessions and the presentation of the reports are compulsory.

A regular evaluative process is conducted in the recitation classes through exercises class and exams; this process accounts for 25% of the final mark.

A final exam will be carried out accounting for 60 % of the final mark. In order to apply these percentages, the minimum grade of the final exam will be equal or greater than 3.

In the extraordinary evaluative process the final mark will be the best one between:

- 60% of the final mark + 15 % of laboratory + 25 % of the recitation classes
- 100% of the final exam

**% end-of-term-examination:** 60

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

## BASIC BIBLIOGRAPHY

- Tipler Paul Allen Physics for scientists and engineers with modern physics, REVERTE, 1993
- Wolfgang Bauer, Gary D. Westfall University Physics with modern Physics, Mc Graw Hill, 2011