

Physics

Academic Year: (2019 / 2020)

Review date: 29/04/2019 14:12:35

Department assigned to the subject: Physics Department

Coordinating teacher: BRIZ PACHECO, SUSANA

Type: Basic Core ECTS Credits : 6.0

Year : 1 Semester : 1

Branch of knowledge: Engineering and Architecture

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

School level Physics and Mathematics including basic concepts of kinematics, dynamics, electric and magnetic field and use of basic mathematical tools: algebraic operations with vectors, differentiation and integration

OBJECTIVES

Knowledge of basic physical phenomena in engineering implications.
 Understanding mathematical models that explain these phenomena.
 Understanding and management of the scientific method and scientific - technical language.
 Development of techniques and strategies for the analysis of reasoning and problem solving (PO a).
 Interpretation and analysis of experimental data (PO b). Elemental device management and measurement systems (PO b).

DESCRIPTION OF CONTENTS: PROGRAMME

Topics covered:
 Particle kinematics. Particle Dynamics. Coulomb's law. Electric Field. Gauss Law. Electric potential. Conductors. Capacitors, Dielectric and Energy. Electric Current. Magnetic Forces and Magnetic Fields. Sources of Magnetic Field. Magnetic Materials. Faraday 's law of induction. Wave propagation. Sound and electromagnetic waves.

LEARNING ACTIVITIES AND METHODOLOGY

Lectures on the specific topics together with simple guide of problem solving; aimed at the acquisition of theoretical knowledge and basic skills(3 ECTS credits).
 Recitation classes with direct and active interaction between students and teacher, individual tutorials and pupil's personal work; aimed at the acquisition of practical skills related to course syllabus; discussion of specific of problems in small groups and solving assigned problems. Practical laboratory sessions in which pupils carry out experimental work including measurements and analysis of results. (3 ECTS credits).

ASSESSMENT SYSTEM

% end-of-term-examination/test:	60
% of continuous assessment (assignments, laboratory, practicals...):	40

The evaluation of the course will have three contributions: continuous assessment, laboratory work and final exam. Laboratory work will be evaluated taking into account a report of each experiment submitted by the student and given the student participation in each experiment and by . Attendance at laboratory sessions is mandatory (PO b). The mark obtained will contribute 15% to the final mark.

The knowledge, skills and competencies theoretical and practical non-specific laboratory (continuous assessment) measured by tests of knowledge spread throughout the course with determined periodicity, and probably additional voluntary assessments to improve the grades. They will account for 25 % of the grade (PO a) .

The knowledge and skills acquired during the course will be assessed by a final exam. The grade

% end-of-term-examination/test: 60

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

obtained in this exam will be 60 % of the final grade . To apply this percentage will be required to have exceeded 30% of the final exam (minimum 3 out of 10 on this test).

BASIC BIBLIOGRAPHY

- R.A.Serway, J.W. Jewett, Jr, Volumen 1 y 2, (3ª edición) . ¿Física ¿, Thomson Editores. Parninfo S.A. 2003.

- P.A.Tipler , G.Mosca, , ¿ Volumen 1 y 2 (5ª edición) ¿Física para la Ciencia y la Tecnología", Edit. Reverté 2005..

- SERRANO DOMINGUEZ V., GARCIA ARANA, G. Y GUTIERREZ ARANZETA, C. Electricidad y Magnetismo. Estrategias para la resolución de problemas y aplicaciones, Pearson Educación, México, 2001.