

Electrical Installations

Academic Year: (2022 / 2023)

Review date: 11-05-2023

Department assigned to the subject: Electrical Engineering Department

Coordinating teacher: BURGOS DIAZ, JUAN CARLOS

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Electrical Power Engineering Fundamentals
 Transient in Power Systems Fundamentals
 Transformers and Magnetic Circuits
 Transmission Lines and Switchgear

OBJECTIVES

This subject enables the student to acquire the following competences and skills.

- Designing a L.V. installations and select its components properly.
- Anlizing electromagnetic transients in electrical systems.
- Knowing the origin of the main overvoltages in an electrical system (clasifierd according their duration) and how to protect equipment against those overvoltages.
- Selecting properly the switchgear of a médium and high voltaje facility.
- Acquiring skills on the use of simulation softwares for electrical systems.
- Acquirin the knowledge to analyze the steady state and the transient state of an electrical facility.

DESCRIPTION OF CONTENTS: PROGRAMME

L.V. Installations. Conductor selection. Fuse selection. Breaker selection.

H.V. and M.V. Installations. Circuit breaker selection. Current and Voltage Transformers. Overvoltages (temporary, switching transientes, lighthning overvoltages). Surge arresters.

LEARNING ACTIVITIES AND METHODOLOGY

Two sessions of teaching classes, one of them of theory and the other of problems.
 3 practical sessions about designing electrical facilities.

ASSESSMENT SYSTEM

Theory exams
 Problem exams
 Laboratory sessions.

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

BASIC BIBLIOGRAPHY

- A.R. Hileman Insulation Coordination for Power Systems, CRC Taylor and Francis, 1999
- Jorge Moreno Mohino y otros Sistemas de Puesta a Tierra en Instalaciones de Alta Tensión, Garceta, 2015
- Jose Garcia Trasancos Instalaciones Electricas en Media y Baja Tension , Paraninfo , 2016

ADDITIONAL BIBLIOGRAPHY

- Juan A. Martínez Velasco y otros Coordinación de Aislamiento en Redes Electricas de Alta Tensión, McGaw Hill, 2880