

## 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.

<b>% end-of-term-examination:</b>	60
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	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