60800 - Installations of high and low tension

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	532 - Master's in Industrial Engineering
ECTS	6.0
Course	1
Period	Half-yearly
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process has been proposed to encourage continued student work focused on the theoretical aspects to understand, analyze and apply that knowledge to solve real problems.
For the development of the subject, theoretical sessions will be held with the whole group, in which the theoretical foundations of the subject will be presented in the form of lectures and supplemented by problem solving-type. Moreover laboratory sessions, in which each student will work as a member of a small group of students, putting into practice the knowledge acquired in the theoretical lectures will be made.
In parallel, during the teaching period, students will do one or more work supervised by the teacher.

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5.2.Learning activities

The program offered to the student to help him to achieve the expected results includes the following activities...

Lectures (45 contact hours).

Sessions exposure and explanation of contents, along with problems and cases of practical application of such content. Student participation through questions and brief discussions will be encouraged.

Laboratory Practice (15 contact hours).

The student will have a script practice previously provided at the beginning of the practical session, which will be accompanied with explanations and instructions necessary for the completion thereof, in the session itself, and given by the corresponding teacher.

Assessment tests (3 contact hours).

Assessment tests besides having a qualifying function, also a learning tool with which the student checks the degree of understanding and assimilation of knowledge and skills achieved.

Tutorial activities.

Direct student care, identification of learning problems, orientation in the subject, attention to exercises and assignments...

Tutored work (34 hours Non-contact).

During the course, the subject teacher raise students solving a set of problems and cases or conducting course work, which are applied in a practical way the contents of the developed subject in different course topics.

Individual study (53 hours Non-contact).

The ongoing work of the student will be promoted by the evenly distributed throughout the semester of the various learning activities.

5.3.Program

The program contents are:

- Fundamentals of Electrical Power System
- LV systems:
  - Planning and design of electrical distribution systems and LV installations.
  - Calculating short-circuit current in three-phase systems: calculation variables to IEC 60909.
  - Electrical installation equipment.
  - Grounding systems.
  - Reactive power compensation equipments.
  - Earthing schemes: TT, TN and IT systems
- HV systems:
  - Design of high and médium voltage installatoins.
  - HV equipment.
  - Grounding systems.
  - Fundamentals of insulation coordination.

5.4.Planning and scheduling

The theoretical lectures and laboratory sessions are held in the classroom or in the laboratory according to schedule set by the center and published prior to the start date of the course.

Each teacher will inform about its hours of tutoring and they will be published in the ADD network https://moodle.unizar.es

The other activities will be planned depending on the number of students and will be announced in time.

5.5.Bibliography and recomended resources