

#### Información del Plan Docente

Academic Year 2016/17

Academic center 110 - Escuela de Ingeniería y Arquitectura

**Degree** 430 - Bachelor's Degree in Electrical Engineering

ECTS 6.0
Course 4

Period First semester

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 teaching methodology will be structured in four levels: theory classes, problems, laboratory sessions and supervised practices.

In the theory classes the fundamental concepts and standards relating to the implementation of projects and electrical drawings, morphology and project methodology, the activity of the technical offices and work done on it will be presented: Likewise, will into consideration the pre-project studies, planning, programming and project management and technical



documentation to develop each topic illustrated with numerous examples.
In the kinds of problems students perform exercises, cases and problems, such as planning and scheduling of the execution of a project under supervision of a teacher.
The laboratory practices will be developed in small groups, where the student will handle the necessary for the execution of the proposed works software.
5.2.Learning activities
There will be the following activities:
1) Teaching type 1: Lectures (30h) Explanation of contents. It is based on the exhibition in the classroom theoretical concepts, using slate and teaching aids and teaching support (slides, videos, software presentations,).
2) Teaching type 2: Classes of problems (15h) Kinds of problems in which the teacher will present various exercises based on the concepts explained in the theory classes. For this learning process individual attention in the classroom will be established, resolving the difficulties that every student is in solving problems and cases.
3) Teaching type 3: Lab (15h) Practice in computer rooms. It is based on the explanation, approach problem solving cases and the use of applications used in development projects: Project, Open Project, Visio, layout and presentation tools,
4) Teaching type 6: supervised practical work. Sheltered practices monitoring and control of the proposed work, individually for each group and by mandatory appointment at the office.
5) Teaching type 7: Personal study. Individual dedication necessary to consolidate a correct learning process.
6) Teaching type 8: Assessment Test. In addition to the qualifying function, evaluation is also a learning tool with which the student tests the degree of understanding and assimilation that has reached the matter.



7) Other activities: Tutoring. direct student care, identification of learning problems, orientation in the subject, attention to exercises and assignments, etc.

#### 5.3.Program

- T.1.- REGULATIONS AND REPRESENTATION OF ELECTRICAL PLANS AND SCHEMES.
- 1.1.- GENERAL RULES FOR CONSULTATION AND REPRESENTATION.
- 1.2.- TYPES OF OUTLINES, DIAGRAMS AND TABLES.
- 1.3.- TYPES OF PLANS USED IN ELECTRICAL PROJECTS.
- 1.4.- GENERAL AND INDIVIDUAL IDENTIFICATION OF ELEMENTS ELECTROTECHNICAL.
- T.2.- GENERAL RULES FOR PROJECT DEVELOPMENT.
- 2.1.- TECHNICAL OFFICE IN THE STRUCTURE OF COMPANY.
- 2.2.- UNE 157001: 2002. GENERAL RULES.
- 2.3.- TECHNICAL PROJECTS IN THE FIELD OF ELECTRICITY.
- 2.4.- PROJECTS SPECIALTY: LOW VOLTAGE, TRANSFORMERS, HIGH VOLTAGE LINES.
- T.3.- PROJECT MANAGEMENT.
- 3.1.- INTRODUCTION TO PROJECT MANAGEMENT
- 3.2.- INTEGRATION PROJECT
- 3.3.- DEFINITION AND SCOPE OF THE PROJECT
- 3.4.- DEADLINES PROJECT
- 3.5.- TECHNICAL GRAPHICS PROJECT MANAGEMENT
- T.4.- APPLICATION REGULATIONS IN PROJECT DESIGN ELECTRICAL.



- 4.1.- INDUSTRIAL ENGINEER.
- 4.2.- APPLICATION OF REGULATIONS OFFICIAL OF ELECTRIC FIELD.
- 4.3.- APPLICATION OF REGULACIÓN OF ELECTRICAL COMPANIES.
- 4.4.- APPLICATION OF COMPLEMENTS REGULATIONS.
- T.5.- PROJECT IMPLEMENTATION.
- 5.1.- POWERS, AUTHORIZATION AND COMMISSIONING OF FACILITIES ELECTRICAL.
- 5.2.- PLAYERS INVOLVED IN THE LEGALIZATION OF FACILITIES.
- 5.3.- CONTROL AND TECHNICAL MANAGEMENT OF PROJECTS.

#### 5.4. Planning and scheduling

The schedule of lectures and problems, as well as the practice sessions in the laboratory are held according to schedule established by the EINA and published prior to the start date of the course on the website of the Centre and bulletin boards.

At the beginning of the course will be informed of delivery dates of partial project reports and delivery and presentation of the final project.

#### 5.5.Bibliography and recomended resources

Bibliography can be found in <a href="http://psfunizar7.unizar.es/br13/eGrados.php?id=220">http://psfunizar7.unizar.es/br13/eGrados.php?id=220</a>