

29637 - Lighting and Domotic

Syllabus Information

Academic year: 2023/24

Subject: 29637 - Lighting and Domotic

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 430 - Bachelor's Degree in Electrical Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Optional

Module:

1. General information

The subject is designed to obtain knowledge and skills to understand and design lighting and home automation installations.

This subject is related to some of the SDGs, such as No. 7 and No. 9.

2. Learning results

In order to pass this subject, the students shall demonstrate they has acquired the following results:

- Conceive, design and develop electrical engineering projects in lighting, auxiliary electrical installations, lighting and home automation.
- Manage information, technical specifications and legislation to develop projects.
- Identify, classify and describe lighting installations and their components.
- Calculate and design lighting installations with their materials and equipment.
- Identify, classify and describe auxiliary electrical installations in buildings.
- Calculate and design auxiliary electrical installations with their materials and equipment.
- Understand user and consumer needs in the design of ancillary facilities.
- Identify, classify and describe low, medium and high voltage electrical installations and electrical protections.

3. Syllabus

The contents to be developed are detailed in the course syllabus and are structured in three thematic blocks:

INTERIOR AND EXTERIOR LIGHTING.

- Light, vision and basic magnitudes
- Lamps, auxiliary equipment and luminaires
- Indoor, outdoor/road and projection lighting
- Lighting software (DIALux).
- The lighting project.

AUXILIARY INSTALLATIONS: HOME AUTOMATION

- General aspects.
- Home automation installations: elements, architectures, transmission media, topologies and protocols.
- Commercial domotic systems and large management areas.
- Home automation software (KNX, Logo, SmartLife, etc.).
- The domotization project.

LABORATORY PRACTICES

This subject has a very high practical load to be able to analyze its contents in depth, which greatly facilitates the student's learning.

4. Academic activities

The learning and teaching process will be developed at three main levels:

A) **THEORY CLASSES and PROBLEMS (30 hours):** where the contents of Lighting and Home Automation will be presented, as well as some problems and some problems and real cases of lighting (or domotic installations) in industries

or premises to be solved with the participation of the teacher and sometimes the students.

B) LABORATORY PRACTICES (30 hours): with a great weight in the percentage of hours in the subject. laboratory practices will be developed in small groups, where the student will check the operation of the mainlighting and home automation systems as well as related computer programs to carry out this type of projects.

C) ACTIVITIES AND EVALUABLE WORK (20 hours): in order to encourage the continuous work of the student, in addition to the laboratory practices, other evaluable activities will be carried out throughout the semester. These activities may consist of deliverable problems, practical work, projects or other activities.

D) TUTORIALS: the professor offers various schedules for direct attention to the student, guidance in the work and projects, among others.

5. Assessment system

Two types of assessment are proposed: "per course" (for the majority) and "global" (for very exceptional cases).

ASSESSMENT BY TERM:

1) ACTIVITIES AND EVALUABLE WORK (70%)

Its mission is to encourage continued work, achieve better learning, facilitate the passing of the subject, among other aspects. No minimum grade to pass the subject.

2) LABORATORY PRACTICES (20%)

The laboratory practices will be evaluated in the laboratory sessions themselves. Previous preparation for each one of the practice sessions, initiative and participation in them will be valued. Minimum grade of 5.

3) WRITTEN EXERCISES (10%)

During the term, written tests of some parts of the contents may be proposed. There is no minimum grade.

GLOBAL ASSESSMENT:

If any student has not been able to follow the course in the normal way and has not been able to attend the theoretical and practical classes, will facilitate the completion of a 'Final Exam'. This will consist of theoretical and/or practical exercises on the knowledge developed in the subject, together with a practice exam.