Universidad Zaragoza

Academic Year/course: 2021/22

29637 - Lighting and Domotic

Syllabus Information

Academic Year: 2021/22
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

1.1. Aims of the course

The subject and its expected results respond to the following approaches and objectives:

The objective of the course is for the student to obtain knowledge and skills that allow them to understand and design lighting and home automation installations.

1.2. Context and importance of this course in the degree

To take it, the knowledge developed in Fundamentals of Electrical Engineering, Analysis of Electrical Circuits and Electrical Installations is required, all from previous courses.

1.3. Recommendations to take this course

It is recommended to have passed the Electrical Installations course. Continuous study and work, from the first day of the course, are essential to successfully pass the subject. It is important to resolve any doubts that may arise as soon as possible, for which the student has the advice of the teachers, both during classes and in the hours of tutoring allocated to it.

2. Learning goals

2.1. Competences

By passing the subject, the student will be more competent to ...

Generic competences:

Ability to conceive, design and develop Electrical Engineering projects (C1).
Ability to combine basic and specialized knowledge of Electrical Engineering to generate innovative and competitive proposals in professional activity (C3).
Ability to analyze and assess the social and environmental impact of technical solutions, acting with ethics, professional responsibility and social commitment, always seeking quality and continuous improvement (C8).
Information management capacity, management and application of technical specifications and legislation necessary for the practice of Electrical Engineering (C10).

2.2. Learning goals

The student, to pass this subject, must demonstrate the following results ...

Identify, classify and describe lighting installations and their components.

Calculate and design lighting installations.

Know and select the characteristics of materials and equipment in lighting installations, in accordance with current regulations.

Identify, classify and describe auxiliary electrical installations in buildings.

2.3. Importance of learning goals

The design principles, techniques and tools developed in this subject are important in the context of studies. Thus, the student will obtain the necessary skills to be able to understand and design this type of facility.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he has achieved the expected learning results through the following evaluation activities

The evaluation of the subject will be global in nature and will include the following activities:

1. Evaluation activities during the teaching period:

1.1. Laboratory Practices (20%)

The laboratory practices will be evaluated in the laboratory sessions themselves. Prior preparation for each of the practice sessions, the initiative and participation in them will be valued.

1.2. Assessable Jobs and Activities (70%)

In order to encourage continuous student work, in addition to laboratory practices, other assessable activities will be carried out throughout the semester. These activities may consist of deliverables, practical work, or other activities.

1.3. Written exercises (10%)

During the course, written tests of some parts of the content may be proposed.

2. Evaluation activities on the dates set by the center for the Official Calls:

2.1. Final exam

Where appropriate, it will consist of theoretical and / or practical exercises on the knowledge developed in the subject.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on participation and the active role of the student favors the development of communication and decision-making skills. A wide range of teaching and learning tasks are implemented, such as lectures, guided assignments, laboratory sessions, autonomous work, and tutorials.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

4.2. Learning tasks

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

The course includes 6 ECTS organized according to:

Lectures (30 hours). Whole group sessions. Presentation of the main theoretical contents combined with problem-solving tasks. Student participation is encouraged through questions and brief discussions.

Laboratory sessions (30 hours). Students will work in small groups to practice the contents learned in lectures. They will have task instructions provided at the beginning of the session, which will be accompanied by the necessary teacher's explanations.

Assessment (3 hours). Assessment tests have a grading function, but they also work as a learning tool to check the student's progress, understanding of the course contents and acquisition of skills.

Tutorials. Teacher's office hours for students to review and discuss course contents, solve doubts, follow-up of assignments, etc.

Autonomous work and study (87 hours). The continuous work of the student will be encouraged by the evenly distributed tasks throughout the semester.

4.3. Syllabus

The course will address the following topics:

Domotics

1. General features.
2. Elements of domotic installations.
3. Domotic system architecture.
4. Physical means of transmission.
5. Mono and multifunction devices.
6. Classification of domotic systems.

Illumination

1. The light and the vision.
2. Basic magnitudes.
3. Lamps and auxiliary equipment.
4. Luminaires.
5. Interior lighting.
6. Road lighting.
7. Projection lighting.

4.4. Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course, please refer to the Escuela de Ingeniería y Arquitectura de la Universidad de Zaragoza, website, https://eina.unizar.es/.

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=29637&Identificador=15363