Universidad Zaragoza

69211 -

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	519 - Master's in Architecture
ECTS	3.0
Year	1
Semester	First semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

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

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is based on the PBL (Project Based Learning) that promotes continuous work and the student's active role in order to the understanding and application of knowledge to solving real problems. A wide range of teaching and learning tasks are implemented, such as laboratory sessions where students acquire manual skills and manage professional software, case studies, group work, and visits to facilities.

5.2.Learning tasks

The course includes the following learning tasks:

- **Lectures (15 hours).** The teacher explains the concepts and fundamentals related to the course contents, illustrating them with real examples. Student participation through questions and brief discussions will be encouraged. The contents are grouped into two sections: home automation and lighting.
- **Laboratory Sessions (15 hours).** Sessions organized in small groups where students work individually or in small groups. The student will select, schedule and perform the assembly of different automation systems and checking their operation. Dialux software will be used for the design and calculation of several lighting projects. Visits to facilities and buildings complement the practical training of students.
- **Assessment (3 hours).** In addition to the grading function, assessment is also a learning tool with which the student checks the degree of understanding and assimilation they have reached.
- **Tutorials.** Direct interaction between teacher and students, identification of learning problems, orientation in the course.
- **Guided assignments (12 hours).** Several exercises and case studies will be proposed to the students. These may be obtained from the Moodle platform https://moodle2.unizar.es
- **Autonomous work and study (30 hours)**. cCntinuous work of the students is encouraged by various learning activities throughout the semester.

5.3.Syllabus

The course will address the following topics:

Section 1. Home Automation.

1. Elements of home automation installations.
2. Home automation systems architecture.
3. Physical transmission media.
4. Home automation systems classification according to REBT ITC-51.
5. Description of commercial systems based on standards KNX and LON.
6. Description of commercial systems with proprietary protocols.
7. Criteria for choosing a home automation system based on control requirements and the characteristics of the building.

Section 2. Lighting

1. Light and vision.
2. Basic figures.
3. Lamps and auxiliary equipment.
4. Luminaires.
5. Interior lighting.
6. Emergency lighting.
7. Outdoor lighting: road and projection.
8. Control systems.

5.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website (http://eina.unizar.es) and Moodle (http://moodle2.unizar.es)

5.5.Bibliography and recommended resources

- Romero Morales, Cristóbal / Vázquez Serrano, Fco. Javier / De Castro Lozano, Carlos. Domótica e inmótica: Viviendas y edificios inteligentes. 3ª ed. Madrid, Ra-Ma Editorial, 2010

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- AENOR. Cuaderno de divulgación domótica. 2ª ed. Madrid, Aenor, 2008
- Moro Vallina, Miguel. Instalaciones domóticas. 1ª ed. Madrid, Ed. Paraninfo, 2011