67232 - Electronic Systems for Access Control and Security

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	527 - Master's in Electronic Engineering
ECTS	5.0
Course	1
Period	First semester
Subject Type	Optional
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 that is designed for this subject is based on the following:

The teaching-learning process is divided into three main levels: lectures, problems and laboratory sessions, with increasing student participation.

- In the lectures the theoretical basis of electronic systems for access control and security will be exposed.

- In the classes of problems representative designs will be developed.

- Laboratory sessions, based on computer programing or experimental implementation, will be conducted in small groups up to two students per equipment.

5.2.Learning activities

The learning activities under this subject are as follows :

Classroom activities (1.96 ECTS, 49 hours)

A01 Master class (20 hours)

In this activity the fundamental contents of the subject will be presented and a set of representative problems will be made. This activity will take place in the classroom. The materials presented in the lectures will be available to students through the Anillo Digital Docente.

A02 Problem resolution (10 hours)

In this activity, a set of representative problems will be solved. This activity will take place in the classroom. The materials presented in the lectures will be available to students through the Anillo Digital Docente.

A03 Laboratory sessions (15 hours)

Representative examples will be developed in the laboratory. The statements of the practices will be available to students in the Anillo Digital Docente.

A06 Work supervision (2 hours)

Supervision of the works to be developed by the students.

A08 Assessment (2 hours)

Non-contact activities (3.04 ECTS, 76 hours)

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A06 Personal works (51 hours)

In this activity work related to the practices will be performed. Works will be done individually or in groups of two people maximum.

A07 Study (25 hours)

This activity includes both personal study aimed at achieving adequate monitoring of the subject, conducting practices, exam preparation and tutoring.

5.3.Program

Master classes:

- T1: Introduction to Machine Learning
- T2: Introduction to Electronics systems for Access control
- T3: Biometrics
- T4: Traffic monitoring and vial security
- T5: Video-surveillance

Laboratory sessions:

- S1: Face detection
- S2: Facial biometrics
- S3: Fingerprint recognition
- S4: Motion detection and tracking
- S5: Video-surveillance application

5.4.Planning and scheduling

Classroom calendar and presentation of works

Lectures and problem classes and practice sessions, held in the laboratory, will be given according to schedule set by the center (schedules available on their website). The other activities will be planned depending on the number of students and will be announced in advance.

5.5.Bibliography and recomended resources

Main references

- Slides available at http://moodle2.unizar.es .
- Lab statements available at http://moodle2.unizar.es .
- Materials for the personal work available at http://moodle2.unizar.es .

Books

- Anil K. Jain and others. *BIOMETRICS: Personal Identification in Networked Society* . Ed. Kluwer Academic Publishers. 2006

Complementary reading

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- Christopher M Bishop. *Pattern Recognition and Machine Learning* . Ed. Springer. 2006.