

## 28840 - Advanced IT

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 28840 - Advanced IT

**Faculty / School:** 175 - Escuela Universitaria Politécnica de La Almunia

**Degree:** 424 - Bachelor's Degree in Mechatronic Engineering

**ECTS:** 4.0

**Year:** 4

**Semester:** Second semester

**Subject Type:** Optional

**Module:** ---

## 1.General information

### 1.1.Aims of the course

This subject and their results have to this goals

The general aim of this course is that student acquires knowledge and skills of advanced informatics related to mechatronics.

Students will be trained to use, install and program embedded devices and the operating systems involved. Students will be instructed about when to apply such devices.

### 1.2.Context and importance of this course in the degree

This subject has as main goal that students gain ability to use advanced IT related to mechatronics.

It is a non mandatory second semester subject at the fourth year.

Some not yet covered informatic questions are introduced here.

### 1.3.Recommendations to take this course

It is preferred that student has coursed the first year Informatic subject.

## 2.Learning goals

### 2.1.Competences

### 2.2.Learning goals

### 2.3.Importance of learning goals

## 3.Assessment (1st and 2nd call)

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

## 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. The learning process designed for this subject is based on the following:

Strong interaction between the teacher/student. This interaction is brought into being through a division of work and responsibilities between the students and the teacher. Nevertheless, it must be taken into account that, to a certain degree, students can set their learning pace based on their own needs and availability, following the guidelines set by the teacher.

The organization of teaching will be carried out using the following steps:

- Lectures: Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports

of the subject are displayed, highlighting the fundamental, structuring them in topics and or sections, interrelating them.

- Practice Sessions: The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.
- Laboratory Workshop: The lecture group is divided up into various groups, according to the number of registered students, but never with more than 20 students, in order to make up smaller sized groups.
- Individual Tutorials: Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online through moodle.

## 4.2.Learning tasks

The course includes the following learning tasks:

- Face-to-face generic activities:
  - Lectures: The theoretical concepts of the subject are explained and illustrative examples are developed as a support to the theory when necessary
  - Practice Sessions: Problems and practical cases are carried out, complementary to the theoretical concepts studied
  - Laboratory Workshop: This work is tutored by a teacher, in groups of no more than 20 students
- Generic non-class activities:
  - Study and understanding of the theory taught in the lectures
  - Understanding and assimilation of the problems and practical cases solved in the practical classes
  - Preparation of laboratory workshops, preparation of summaries and reports
  - Preparation of the written tests for continuous assessment and final exams

The subject has 4 ECTS credits, which represents 100 hours of student work in the subject during the trimester.

## 4.3.Syllabus

The course will address the following topics:

### 1 Theoretical contents

- Operating systems
- Object-oriented programming
- Introduction to concurrency and real-time
- Data bases

### 2 Practical contents

- Learn to install, configure and use operating systems.
- Learn to programme with object-oriented languages.
- Learn to install, configure and use complementary software tools, involved in program creation.

## 4.4.Course planning and calendar

The dates of the works deadlines will be communicated in-class sessions or in Moodle platform: <http://moodle.unizar.es>.

The weekly timetable will be published in moodle at the start of the semester. The dates of continuous assessment work and the publication dates of qualifications will be published in moodle at the start of the semester.

The dates of the final exams will be those that are officially published at <http://www.eupla.es/>

In the global evaluation system, the delivery dates of works will be published in moodle and will be previous to final exams.

## 4.5.Bibliography and recommended resources

See following [link](#)