

Academic Year/course: 2021/22

30220 - Hardware Project

Syllabus Information

Academic Year: 2021/22

Subject: 30220 - Proyecto hardware

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel

Degree: 330 - Complementos de formación Máster/Doctorado
439 - Bachelor's Degree in Informatics Engineering
443 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 443 - Bachelor's Degree in Informatics Engineering: 3

439 - Bachelor's Degree in Informatics Engineering: 3

330 - Complementos de formación Máster/Doctorado: XX

Semester: First semester

Subject Type: 439 - Compulsory

330 - ENG/Complementos de Formación

443 - Compulsory

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

This class enables students to acquire the set of skills and abilities required to deal with semester-long projects. Monthly, students have to complete milestones and present their progress in the lab. Therefore, there are almost no theory classes, and the class provides an ample set of self-study material. Milestones enable continuous tracking of the students, and, at each milestone, students have to defend their progress with real hardware demos and technical written reports showcasing their designs.

This subject will be taught in Spanish.

4.2. Learning tasks

The course includes the following learning tasks:

- Lectures (5 hours): in these master classes an introduction to each project will be done by reviewing the necessary theoretical knowledge, relating the knowledge acquired in previous courses, describing the support materials available, and briefly explaining the expected tasks that should be done.
- Laboratory practical sessions (48 hours, 4 hours per week throughout the course): in these sessions a teacher is present in the lab so that students can query any questions.
- Study and personal work (72 estimated hours): students work on their own, using the material available to acquire the necessary skills and progress in the requested project.

- Documentation (20 hours): after completing the project with the teacher approval to it, students must submit a written technical report.
- Deliveries and corrections (5 hours): students must periodically submit the work to one of the teachers of the subject. These deliveries serve both to evaluate the student and to guide him. In addition teachers will review the reports submitted by students to give them feedback.

4.3. Syllabus

The course will address the following topics:

- Optimization of assembly code.
- Integrating assembler code with high-level language and libraries.
- The compilation, linking and debugging.
- Input / output peripherals.
- Development of an embedded software project with real-time constraints.
- Introduction to performance analysis.
- Performance evaluation and verification of response times.

4.4. Course planning and calendar

It will be implemented for each teaching group when the academic calendar of the University of Zaragoza is approved and established by each centre.

4.5. Bibliography and recommended resources

Students are provided with ample material for self-study related to the hardware devices and software development frameworks used.