230741 – MASTER THESIS

Credits: 20 ECTS

LECTURER

Coordinating lecturer: Head of studies of MEE

Others:

PRIOR SKILLS

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

Prepare an original work to be carried out individually and present and defend before a university tribunal, consisting of an engineering project in the field of electronics and Information and Communication Technologies, in which the skills acquired in the teachings are synthesized of the Master.

Transversal:

CT1- Entrepreneurship and innovation. Know and understand the mechanisms on which scientific research is based, as well as the mechanisms and instruments for transferring results between the different socioeconomic agents involved in R&D&i processes.

CT2- Sustainability and Social Commitment. Know and understand the complexity of the economic and social phenomena typical of the welfare society; have the ability to relate well-being to globalization and sustainability; achieve skills to use technique, technology, economy and sustainability in a balanced and compatible way.

CT4- Solvent use of information resources. Manage the acquisition, structuring, analysis and visualization of data and information in the field of specialty and critically assess the results of said management.

CT5- Third language. Know a third language, preferably English, with an adequate oral and written level and in line with the needs that graduates will have.

TEACHING METHODOLOGY

Each student will be assigned a thesis advisor. The advisor and the student together prepare a working plan. During the development of the thesis, they hold periodical meetings where the advisor advises the student on next steps to follow. Most of the time the student works autonomously. At the end, the student prepares the technical report and performs the public presentation of the results.
LEARNING OBJECTIVES OF THE SUBJECT

Learning objectives of the subject:

The objective of this course is to introduce the student into the scientific research methodologies. In this regard, and under the supervision of a research advisor, the student will carry out a research project in the area of Electronic Engineering.

If the advisor is not a UPC member, a co-advisor belonging to UPC academic staff must be proposed. Both the advisor and co-advisor must hold a PhD degree.

Learning results of the subject:

The student is able to individually develop, present and defend an original exercise of a professional and/or research nature in the field of Engineering Electronics and Information and Communication Technologies as a demonstration and synthesis of the skills acquired in the teachings.

The student uses strategic knowledge and skills to create and manage projects with an innovative vision, apply systemic solutions to complex problems:

1. - Plan and use the necessary information for a project or academic work based on a critical reflection on information resources used.

2. - Applies the skills acquired to perform a task autonomously. Identifies the need for continuous learning and develops own strategy to carry it out.

3. - Identifies and models complex systems. It carries out qualitative analyzes and approximations, establishing the uncertainty of the results.

4. - Proposes hypotheses and experimental methods to validate them.

5. - Identifies main components and establishes commitments and priorities.

6. - Design experiments and measurements to verify hypotheses or validate the operation of equipment, processes, systems or services in the field of Electronic Engineering.

7. - Select the appropriate equipment or software tools and carry out advanced analyzes with the data.

The student knows the concept of a product life cycle and applies it to the development of ICT products and services, using the appropriate regulations and legislation.

The student can make an oral presentation and answer questions from the audience.

The student communicates clearly and efficiently in oral and written presentations on complex topics, adapting to the situation, the type of audience and the objectives of the communication.

STUDY LOAD

Hours large group: 0

Hours small group: 0

Hours self study: 500

CONTENTS

They will depend on the specific contents of the proposal
GRADING SYSTEM

The TFM is evaluated by a board assigned for that purpose. The evaluation board consists of a President, a Secretary and one other Board Member. The Secretary of the evaluation board is the TFM advisor, the President is, normally, a professor of the same department than the Secretary, and the third member is a professor of another department than the President and the Secretary.

In order to determine the numerical mark of the TFM, the evaluation board will take into special account the scientific or technical quality of the work and technical report, the clarity of the presentation and oral defence, response to questions and, if applicable, the economic feasibility study, environmental impact and/or sustainable development.

RESOURCES

Other resources:

TFM regulations: Look at

http://etsetb.upc.edu/ca/estudis/normatives-academiques/normatives-academiques-etsetb

TFM procedures: Look at

http://etsetb.upc.edu/ca/els-serveis(secretaria-oberta/procediments-i-tramits/tfm-masters-tic)