

## Bachelor Thesis

Academic Year: ( 2019 / 2020 )

Review date: 04-05-2020

Department assigned to the subject: Electronic Technology Department

Coordinating teacher: CONTRERAS LALLANA, PEDRO

Type: Bachelor Thesis ECTS Credits : 12.0

Year : XX Semester :

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Those required by the University in relation to the conditions to start the Bachelor Thesis.

## OBJECTIVES

By the end of this subject, students will be prepared to have:

1. A systematic understanding of the key aspects and concepts of their branch of engineering;
2. The ability to apply their knowledge and understanding to identify, formulate and solve engineering problems using established methods;
3. An understanding of design methodologies, and an ability to use them.
4. The ability to conduct searches of literature, and to use data bases and other sources of information;
5. The ability to select and use appropriate equipment, tools and methods;
6. An understanding of applicable techniques and methods, and of their limitations;
7. An awareness of the non-technical implications of engineering practice.
8. Use diverse methods to communicate effectively with the engineering community and with society at large
9. Demonstrate awareness of the health, safety and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commit to professional ethics, responsibilities and norms of engineering practice;
10. Recognise the need for, and have the ability to engage in independent, life-long learning.

## DESCRIPTION OF CONTENTS: PROGRAMME

This course includes the completion of one engineering work requiring the practical use of knowledge acquired during the engineering studies.

Regarding the contents of industrial electronics, the work could be focused on the design of a subsystem-oriented electronic instrumentation and industrial control. The work could require some experimental work in laboratory, the use of CAD and simulation tools or some programming language, especially for embedded applications in real time. The complexity of the work will be consistent with the credits of half the subject, i.e. 6 credits.

Regarding the contents of system engineering and automation, the work may involve analysis and / or control system design, automation or robotics. The work may require implementation in the laboratory or the use of simulation tools. Its complexity is consistent with the credits of half the subject, i.e. 6 credits.

## LEARNING ACTIVITIES AND METHODOLOGY

Learning activities will consist of lectures and tutorials. At the beginning of the course a lecture will be

imparted in which the problems to solve are exposed (both for the automatic part and for the electronic part) giving guidance to students to address solutions. In the middle of the course another working session will be done in which the common difficulties found by the students have about the organization and development of their work will be treated and guide to solve the student problems will be given.

These lectures will be complemented by tutorials to complete an average of 60 hours of tutoring for each group of 20 students. These lectures optionally could take place in the laboratory for those students whose project requires experimental work

#### ASSESSMENT SYSTEM

The formative evaluation will be conducted by a committee that will assess the Bachelor Final Project of each student individually. The student will defend his Project before this committee in an oral session, clearly presenting the corresponding points with resolution of any problems arising in the Project. The student will also elaborate a document detailing his work. This document will be submitted to the committee in advance. The final grade of the student will take into account all these aspects. A rubric (public evaluation matrix) will be used to evaluate the different aspects of the Bachelor's Final Project. This formative evaluation will constitute 100% of the student's final grade.

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