

Academic Year: (2024 / 2025)

Review date: 04-02-2025

Department assigned to the subject: Electronic Technology Department

Coordinating teacher: LINDOSO MUÑOZ, ALMUDENA

Type: Bachelor Thesis ECTS Credits : 12.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

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

<http://www.uc3m.es/ss/Satellite/SecretariaVirtual/es/TextoMixta/1371210936260/>

SKILLS AND LEARNING OUTCOMES

RA1.2: A systematic understanding of the key aspects and concepts of their branch of industrial engineering.

RA2.1: The ability to apply their knowledge and understanding to identify, formulate and solve engineering problems using established methods.

RA3.2: An understanding of design methodologies, and an ability to use them.

RA4.1: The ability to conduct searches of literature, and to use data bases and other sources of information.

RA5.1: The ability to select and use appropriate equipment, tools and methods.

RA5.3: An understanding of applicable techniques and methods, and of their limitations.

RA5.4: An awareness of the non-technical implications of engineering practice.

RA6.2: Use diverse methods to communicate effectively with the engineering community and with society at large.

RA6.3: 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.

RA6.5: Recognise the need for, and have the ability to engage in independent, life-long learning. Systems, Industrial Computing and Communications.

CB1: Students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.

CB2: Students are able to apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the development and defence of arguments and problem solving within their field of study.

CB3: Students have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgements which include reflection on relevant social, scientific or ethical issues.

CB4: Students should be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

CB5: Students will have developed the learning skills necessary to undertake further study with a high degree of autonomy.

CG1: Ability to resolve problems with initiative, creativity decision-making and critical reasoning skills, and to communicate and transmit knowledge, skills and abilities in the Industrial Engineering area.

CG3: Capacity to design a system, component or process in the area of electronic and automatic engineering in compliance with required specifications.

CG4: Knowledge and capacity to apply current legislation as well as mandatory specifications, requirements and norms in the area of electronic and automatic engineering.

CE6: Ability to design analog, digital and power electronic systems.

CE11: Capacity for designing control systems and industrial automation.

CT1: Ability to communicate knowledge orally as well as in writing to a specialized and non-specialized public.

CT3: Ability to organize and plan work, making appropriate decisions based on available information, gathering and interpreting relevant data to make sound judgement within the study area.

CT4: Motivation and ability to commit to lifelong autonomous learning to enable graduates to adapt to any new situation.

CETFG1: Original individual work presented and defended before a university examining committee. It should consist of a project in the area of technologies specific to Industrial Engineering, and be of a professional nature, which synthesizes and integrates the competences acquired in the program.

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

Original exercise to be presented and defended in front of an academic committee. The work will be an integral project in the field of the Bachelor degree that will be professionally oriented where the different competences acquired during the degree courses should be demonstrated or an innovative work developing an idea, prototype or a model of systems or equipments within the field developed during the Bachelor degree.

LEARNING ACTIVITIES AND METHODOLOGY

Students apply competences and knowledge acquired during their studies in a Project from an area of the degree program, concluding with a written report. The foregoing reflects the corresponding project's analysis, resolution of issues and conclusions. The Project represents 299 hours/0% on-site.

The student will defend their Project in front of a tribunal, clearly presenting the corresponding points with resolution of any problems arising in the Project. 1 hour/100% on-site.

The tutor for the Bachelor's Degree Final Project helps and guides the student in all aspects necessary to carry out a solid final Project, and to write a corresponding clear and professional report. The tutoring sessions can be on-site or on-line.

ASSESSMENT SYSTEM

This is done through an oral Bachelor's Degree Final Project defense before a tribunal selected to assess the student's work, the learning outcomes, and its presentation, according to an evaluation model.

Prior to the defense, the student must have duly presented their written report to the tribunal members.

The students of the English track must write and defend their bachelor thesis completely in English.

In addition, the originality of the Bachelor Thesis is evaluated. The University uses the Turnitin

Feedback Studio program within the Aula Global for the delivery of student work. This program compares the originality of the work delivered by each student with millions of electronic resources and detects those parts of the text that are copied and pasted.

Represents 100% of the evaluation.

BASIC ELECTRONIC RESOURCES

- Biblioteca . UC3M Bachelor Thesis. : <https://uc3m.libguides.com/TFG/EN/Home>
- Biblioteca . Turnitin guide.: <https://uc3m.libguides.com/EN/Turnitin>