

**COURSE DATA****DATA SUBJECT****Code:** 34922**Name:** Engineering, society and university**Cycle:** Undergraduate Studies**ECTS Credits:** 6**Academic year:** 2025-26**STUDY (S)**

Degree	Center	Acad. year	Period
1404 - Degree in Industrial Electronic Engineering	Escola Tècnica Superior d'Enginyeria	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1404 - Degree in Industrial Electronic Engineering	Engineering, society and university	COMPULSORY

COORDINATION

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SUMMARY

The subject "Engineering, Society and University" is compulsory in the first course of the degree in Industrial Electronic Engineering. It comprises 6 ECTS and is taught in the first semester of the first course.

This subject aims to place the new students in the context in which they will develop both their studies and their profession once they graduate. To do this, the subject is divided into two main blocks. In the first, work aims facilitating the integration of college students, providing them with knowledge and tools to facilitate the transition from high school to college.

The second section provides an overview of engineering in their various specialties and in particular of one of Industrial Electronic Engineering as seen from the perspective of their relations with science, technology, economics, society and the environment. It is to show the profession accounting for the implications of this in the development of societies, stressing at all times, in the ethical and environmental commitments of the engineer as well as in the principles of equality of opportunity, democratic values and culture of peace.



The main objectives of the course are:

- Facilitate the incorporation and integration of students into university life, especially in graduate studies in Industrial Electronic Engineering:
 - structure and organization of the University of Valencia
 - services and human resources, administrative and information offered by the University of Valencia
 - objectives, content and studies program.
- Develop an action plan to guide and tutorial following the process of joining the university.
- Encourage student participation in representative bodies and academic extracurricular activities.
- Develop transferable skills: planning time and study skills, management of information technologies and communication tools for calculation and presentation of documents, reports, and literature search, basic laboratory and experimentation techniques.
- Provide a historical perspective of engineering, its major periods and problems, all within the context of its relations with science, technology, economy, society and the environment.
- Provide a vision of sex / gender system given equal opportunities, incentives and obstacles for women in the areas of engineering.
- Provide an overview of the features of the scientific and technical terminology.
- Encourage and foster in students those values and attitudes that should be inherent to an engineer.
- Disseminate the profiles and the areas of performance of engineering graduates.

The course contents are:

- Introduction to college. Mentoring program for new students. Structure of the university. Curriculum. Study techniques and troubleshooting. Tools for access to Information: Library, corporate website, corporate email, e-learning platform.
- Engineering and society:
 - Engineer in the company and management. Professional ethics.
 - Sustainable development and environmental responsibility.
 - Equality opportunities and gender: incentives and barriers.

To cover the course content is organized into two parts distributed according to:

Part I. Joining the University and graduate studies in Industrial Electronic Engineering: thematic units 1 to 9.

Part II. Engineering, Industrial Electronic Engineering and Society: Thematic units 10 to 14.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS



COMPETENCES / LEARNING OUTCOMES

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CG10 - Ability to work in a multilingual and multidisciplinary environment.

CG11 - Knowledge, understanding and ability to apply the necessary legislation for practising professionally as a qualified industrial engineer.

CG4 - Ability to solve problems with initiative, decision-making skills, creativity and critical reasoning and to communicate and transmit knowledge, abilities and skills in the field of industrial engineering (with specific industrial electronics technology).

CG7 - Ability to analyse and assess the social and environmental impact of technical solutions.

CG9 - Ability to organise and plan work in companies and in other institutions and organisations.

DESCRIPTION OF CONTENTS

1. Host activity.

Host session. Objectives of the studies. Organization of the first course: school calendar, timetable, exam schedule. Agenda.

Conference: The transition to the University of Valencia.

2. The University of Valencia. Presentation and structure

History of the University. Mission. Structure. Campus and Centers.

activities:

Questionnaire about structure of the University of Valencia

Locating Centers and Study programs

Organization of School: Central Board, Departments, Commissions. Academic Title Committee. ADR and student representation. Secretariat. Facilities. Quality programs, mobility and placement. Procedure to follow in a emergency scenario. Web ETSE.

activities:

Questionnaire about structure ETSE

Location of student representatives



3. ETSE

Organization of School: Central Board, Departments, Commissions. Academic Title Committee. ADR and student representation. Secretariat. Facilities. Quality programs, mobility and placement. Procedure to follow in a emergency scenario. Web ETSE.

activities:

Collection of times and places for students attention

4. Resources and Services University of Valencia

DISE, CADE, CAL, OPAL, University Library, Physical Education and Sports, Students, SFP, Safety, Health and Environmental Quality. Virtual Secretary. Email. Virtual Classroom. Web of the University of Valencia.

activities:

Special presentations by staff of the services of most interest to students.

5. Graduate Studies in Industrial Electronic Engineering

Legal Framework. Curriculum at the University of Valencia. Curriculum at other universities. Postgraduate studies.

activities:

Analysis of the sequencing of subjects for the acquisition of competencies of the grade.

Consultation and comparison of curricula from other Spanish universities and / or European.

6. Tutorial Action Plan for new students

Tutoring and guidance on topics of subjects, study methods, planning of activities and difficulties detection and monitoring of incorporation.

activities:

Individual and group meetings with the tutor or mentor.

7. Work planning and study techniques

Agenda organization, planning of study in higher education: planning for the short, medium and long term. Factors influencing the study. Reading. Basic teaching techniques and active study, underline and outline, abstract, memorization and recitation. Structuring reports.

activities:

Task of planning of work

Homework on study skills



8. ICT tools in graduate studies in Industrial Electronic Engineering

Handling word processing, spreadsheet, presentation programs, and mathematical software. activities:

- Preparation of a presentation: What is Industrial Electronic Engineering?
- Practice of treatment of experimental results: performing calculations, adjustments and graphics
- Preparing a report of experimental results

9. Basic laboratory and experimentation techniques

Safety in the laboratory. Common material handling in a laboratory of Industrial Electronic Engineering. Measure voltage, current and frequency.

activities:

- Development of a guide-summary of laboratory
- Practice material handling and customary measures in Industrial Electronic Engineering

10. History of technology.

Main periods in the history of technology. Introduction: primitive techniques, technology in the Ancient world, the Middle Ages and the Scientific Revolution. Industrial Revolution. Technology in 19th century. Technoscience in 20th century.

Activities:

- Activity dealing with the history of technology.

11. Science, technology and society

Introduction. Technological systems. Technological innovation and scientific research. Transfer and spread of technological novelties. Technology and gender. Women in technology. Technology and socio-economic development. Technology and environment. Technology and culture.

Activities:

- Questions on science, technology and society

Introduction to the problem of the scientific method. Scientific and technical terminology. Technological information: oral, written and graphical communication. The technical report. Patent systems and the protection of inventions. Circulation of information in science and technology. Recovery of information:



12. Work methods in science and technology.

databases, encyclopaedias, reference works

Activities:

Activity dealing with the localization of a patent and the analysis of its structure and content.

13. Engineering as a profession.

Professions and occupations in science and technology. Scientific and technological disciplines. The formation and development of specialities. The teaching of science and technology. The control of professional practice. The role of experts in contemporary societies. Technology and risk society. Engineering and its application fields: industry, utility companies, public administration. Professional associations. Ethics and professional deontology. Technology and its current and future challenges.

Activities :

Activities dealing with ethical problems and/or the professional practice of engineering.

14. Industrial Electronic Engineering and Electronic engineer

Industrial activity and the process industry. The emergence and evolution of Industrial Electronic Engineering. Definition of Industrial Electronic Engineering. The industrial engineer and chemical engineer. Functions of the chemical engineer in the industrial enterprise in the service business and in administration. Current challenges for Industrial Electronic Engineering.

Activities:

Conferences of professionals from various fields of Industrial Electronic Engineering
Visit to a electronic engineering industry.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	25,00
Laboratory	10,00
Classroom practices	25,00
Total hours	60,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00



Individual or group project	40,00
Independent study and work	0,00
Preparation of lessons	35,00
Preparation for assessment activities	15,00
Resolution of case studies	0,00
Total hours	90,00

TEACHING METHODOLOGY

The development of the course is structured around the theory classes, practical classes and seminars, visits, lectures, tutorials and completion of work.

In the lectures the teacher will present and explain the contents of each issue to highlight those key aspects of comprehension (G4, G9).

In practical classes and seminars students, under the direction and supervision of staff, will carry out work and presentation and discussion of issues. Include activities in the computer classroom (see web pages, databases, using tools, etc.) and in the laboratory (basic techniques) or workshops (study skills workshops, presentations, etc.) (G4, G7, G9).

To complement this training course visits to the facilities and services of the university and companies in the field of Industrial Electronic Engineering, as well as a series of lectures by professionals who provide students with the vision of the profession and field performance of graduates are scheduled (G4, G7, G9).

The tutorials in this course will guide in matters of subjects, study methods, planning and detection of problems and monitor the incorporation of the student to college.

The proposed work will include both the student reporting and work as the development of questionnaires, in many cases as self-correcting tests, aimed at preparing and / or strengthen the most important concepts of each topic. Some of these activities will be held in class and the rest will have a timetable for completion and delivery by the students. After correction, the students will be informed of their results (G4, G7, G9).

EVALUATION

The evaluation of student learning will be carried out following two models, Modality A (or continuous evaluation) and Modality B, which will be aimed at verifying that the fundamental concepts have been assimilated and the acquisition of skills has been completed.

Mode A - Continuous evaluation.



Continuous evaluation through the evaluation of the participation and degree of involvement in the teaching-learning process, taking into account the participation, the planned activities and the completion of questionnaires and proposed works as well as their qualification. The percentage allocation of each part of the continuous assessment will be as follows:

- Participation: 10% (up to one point in the final grade for the completion of all face-to-face and non-face-to-face activities).
- Questionnaires and assessable activities: 70% (questionnaires in the virtual classroom, activities in the classroom and in the laboratory sessions, etc.).
- Final work: 20%

In order to pass the subject in modality A, a minimum grade of 5 out of 10 must be obtained in the Final Work.

Students who do not pass the subject for modality A will be evaluated with modality B.

Mode B

In modality B, a test of minimum theoretical and practical knowledge will be carried out on the dates of the official call. The final work of the subject will also be taken into account. Finally, for the students who completed the quizzes, activities and works during the continuous assessment, they will be taken into consideration and will be valued up to a maximum of 1.5 points out of 10. In summary, the percentage allocation of each part of the modality B will be as follows:

- Minimum knowledge test in official call: 60%
- Final work: 25%
 - Students can keep the grade corresponding to the work presented during the continuous evaluation.



- Alternatively, an individual assignment may be submitted. The objectives of this, delivery dates and other details must be previously agreed with the teacher responsible for topics 10 to 12. The student will be responsible for contacting the teacher to determine these points.
- Questionnaires and evaluable activities carried out in the continuous assessment: 15%

The obvious copying or plagiarism of any activity that forms part of the assessment will mean the impossibility of passing the subject, subjecting you to the appropriate disciplinary procedures indicated in the PROTOCOL OF ACTION AGAINST FRAUDULENT PRACTICES

AT THE UNIVERSITY OF VALENCIA (ACGUV 123/2020).

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Mode A - Continuous evaluation.

Continuous evaluation through the evaluation of the participation and degree of involvement in the teaching-learning process, taking into account the participation, the planned activities and the completion of questionnaires and proposed works as well as their qualification. The percentage allocation of each part of the continuous assessment will be as follows:

- Participation: 10% (up to one point in the final grade for the completion of all face-to-face and non-face-to-face activities).
- Questionnaires and assessable activities: 70% (questionnaires in the virtual classroom, activities in the classroom and in the laboratory sessions, etc.).
- Final work: 20%

In order to pass the subject in modality A, a minimum grade of 5 out of 10 must be obtained in the Final



Work.

Students who do not pass the subject for modality A will be evaluated with modality B.

Mode B

In modality B, a test of minimum theoretical and practical knowledge will be carried out on the dates of the official call. The final work of the subject will also be taken into account. Finally, for the students who completed the quizzes, activities and works during the continuous assessment, they will be taken into consideration and will be valued up to a maximum of 1.5 points out of 10. In summary, the percentage allocation of each part of the modality B will be as follows:

- Minimum knowledge test in official call: 60%
- Final work: 25%
 - Students can keep the grade corresponding to the work presented during the continuous evaluation.
 - Alternatively, an individual assignment may be submitted. The objectives of this, delivery dates and other details must be previously agreed with the teacher responsible for topics 10 to 12. The student will be responsible for contacting the teacher to determine these points.
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