1. BASIC INFORMATION

Course	Graphic expression for engineering
Degree program	Bachelor's Degree in Industrial Systems Engineering
School	School of Architecture, Engineering, Science and Computing
Year	1
ECTS	6
Credit type	Basic
Language(s)	English
Delivery mode	Face to face
Semester	1
Academic year	25-26
Coordinating professor	Carlos Castellote

2. PRESENTATION

The course “Graphic Expression” allows students to learn the concepts that will enable them to understand the basic principles and techniques of engineering graphics.

Graphic Expression contents:

- Technical drawing
- Computer Assisted drawing

The module on Technical Drawing will cover the basics of technical drawing, including systems of representation, the standard representation of the industrial design, the procedures for marking, and the calculation of tolerances.

Computer Assisted Drawing is focused on learning and using vector programs as a working tool for the design and representation of documents and technical drawings.

3. LEARNING OUTCOMES

Knowledge

KNO4: Spatial vision skills and knowledge of graphical representation techniques, both by traditional methods of metric geometry and descriptive geometry, as well as by computer-aided design applications

- Identify the regulations relating to the production of industrial drawings
- Recognize the regulations regarding the dimensioning of mechanical parts and assemblies

Skills

SK17: Ability to apply the techniques of graphic representation of parts, assemblies and drawings

- Calculate Normalized Tolerances and Adjustments
- Dimensioning mechanical parts and assemblies according to regulations
- Create mechanical parts and assemblies using Computer Aided Design (CAD) programs
- Create drawings of installations, parts, and assemblies using Computer Aided Design (CAD) programs

Competences

CP9: Create new ideas and concepts based on known ideas and concepts, reaching conclusions or solving problems, challenges and situations in an original way in the academic and professional environment.

4. CONTENT

- Standarized part representations
- Representation of assemblies
- Listo of materials
- Dimensioning rules and procedures
- Dimensional tolerances.
- Industrial drawings

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Master class
- Problem based learning
- Simulation environments

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Campus-based mode:

Learning activity	Number of hours
Master classes	10
Practical seminars	30
Problem solving	40
Autonomous study	60
Debates and panel discussions	5
Face-to-face assessment test	5
TOTAL	**150**

7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Campus-based mode:

Assessment system	Weight min. %	Weight max. %
Face-to-face assessment test	50	70
Case/problem	20	50
Performance evaluation	5	5

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Campus-based mode:

Assessable activities	Deadline
Technical drawing assesments	Weeks 1-8
Computer Assisted Drawing Assignments	Weeks 9-16
Engineering project	Weeks 17
Final exam / Final project	Weeks 17

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

9. BIBLIOGRAPHY

The main reference work for this subject is:

- FÉLEZ, Jesús. MARTINEZ, María Luisa. Dibujo Industrial. Editorial Síntesis S.A.

The recommended Bibliography is:

- PERÉZ DIAZ J.L; PALACIOS CHUECA, S; Expresión Gráfica en la Ingeniería, Introducción al Dibujo Industrial. Prentice Hall.

- JAMES M. LEAKE; with special contributions by JACOB L. BORGERSON. Engineering design graphics: Sketching, modeling, and visualization. John Wiley & Sons Inc.
- ISO STANDARDS HANDBOOK. Technical drawings. International Organization for Standardization.

10. EDUCATIONAL GUIDANCE, DIVERSITY AND INCLUSION UNIT

From the Educational Guidance, Diversity and Inclusion Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.
4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:

orientacioneducativa@universidadeuropea.es

11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.

WORK PLAN FOR THE COURSE

HOW TO COMMUNICATE WITH YOUR PROFESSOR

Whenever you have a question about the content or activities, don't forget to post it to your course forum so that your classmates can read it.

You might not be the only one with the same question!

If you have a question that you only want to ask your professor, you can send him/her a private message from the Campus Virtual. And if you need to discuss something in more detail, you can arrange an advisory session with your professor.

It's a good idea to check the course forum on a regular basis and read the messages posted by your classmates and professors, as this can be another way to learn.

PLAGIARISM REGULATION

In accordance with the current student disciplinary regulations at Universidad Europea:

- Plagiarism, in full or in part, of intellectual works of any kind, is considered a very serious offense.
- Very serious offenses relating to plagiarism and the use of fraudulent means to pass assessment tests shall result in exclusion from the exams for the relevant period, as well as the inclusion of the offense and its details in the student's academic record. For more information you can find all information regarding disciplinary regulations at the following link:

USE OF IA REGULATION

The student must be the author of his/her work/activities.

The use of Artificial Intelligence tools (AI) must be authorized by the teacher in each assignment/activity, indicating in what way it uses are permitted. The teacher will inform in advance in which situations AI tools may be used to improve spelling, grammar and editing in general. The student is responsible for clarifying the information given by the tool and duly declaring the use of any AI tool, according to the guidelines given by the teacher. The final decision on the authorship of the work and the appropriateness of the reported use of an AI tool rests with the lecturer and those responsible for the degree.