[GJB301] GRAPHIC EXPRESSION

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	?
Semester	2	**Course**	1	**Mention / Field of specialisation**	
Character	BASIC TRAINING				
Plan	2025	**Modality**	Face-to-face	**Language**	CASTELLANO/EUSKARA
Credits	6	**Hours/week**	5	**Total hours**	90 class hours + 60 non-class hours = **150 total hours**

2030 AGENDA GOALS

PROFESSORS

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REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	*(No previous knowledge required)*

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
G-RA12 - To demonstrate spatial vision and knowledge of graphic representation techniques, both through traditional methods of metric geometry and descriptive geometry, and through computer-aided design applications	x	x		5,4
G-TR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and/or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy		x		0,36
G-TR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,24
			Total:	6

KC: Knowledge or Content / SK: Skills / AB: Abilities

SECONDARY LEARNING RESULTS

2RGJ193 (2 sem) Write a clear and concise project report using the information sources and report structure provided, and using language that is correct, inclusive, and non-discriminatory.

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Revision and correction of the written report of the semester project

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RGJ142 They set dimensions and define the required tolerances of the parts forming a mechanical assembly in compliance with the technical drawing standards.

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	3 h.	5 h.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	11 h.	9 h.	20 h.
Carrying out exercises and solving problems individually and/or in teams	37 h.	20 h.	57 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%
Individual written and/or oral tests or individual coding/programming tests	70%

Comments: All assignments must be handed in in order to be able to take part in the checkpoints. Failure to hand in all work will result in the marks for the work being disregarded. If any work is copied or allowed to be copied, the marks for the work will not be taken into account.

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: Given that the learning outcome is continuous, the control points will not be recovered. The test taken at the end of the term for the recovery of the learning outcome will have a weight of 75%.

CH - Class hours: 51 h.
NCH - Non-class hours: 34 h.
TH - Total hours: 85 h.

2RGJ192 (2 sem) Understand and describe the phases involved in developing engineering teams, and identify and describe the professional roles of an engineer, recognizing their contribution to the achievement of sustainable development goals (SDGs).

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RGJ141 Represent different types of parts in accordance with technical drawing standards.

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	1 h.	4 h.	5 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	7 h.	4 h.	11 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	4 h.	8 h.
Carrying out exercises and solving problems individually and/or in teams	18 h.	8 h.	26 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: Given that the learning outcome is continuous, the

Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%	control points will not be recovered. The test taken at the end of the term for the recovery of the learning outcome will have a weight of 75%.
Individual written and/or oral tests or individual coding/programming tests	70%	

Comments: All assignments must be handed in in order to be able to take part in the checkpoints. Failure to hand in all work will result in the marks for the work being disregarded. If any work is copied or allowed to be copied, the marks for the work will not be taken into account.

CH - Class hours: 30 h.
NCH - Non-class hours: 20 h.
TH - Total hours: 50 h.

2RGJ190 (2 sem) Understand and apply the phases for developing, based on defined objectives and planning, a technically complex project in line with your knowledge. Reflect on your training needs, becoming aware of your limitations.

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

2RGJ191 (2 sem) Contribute to the team's operating strategy by prioritizing common goals, encouraging and valuing everyone's participation, and taking responsibility for individual tasks and meeting deadlines.

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseeen.

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

2RGJ194 (2 sem)Give a clear and concise oral presentation and defense of the project, using language correctly.

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	1 h.	2 h.	3 h.

EVALUATION SYSTEM	*W*
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 1 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 3 h.

CONTENTS

1. Representation of parts1.1. Orthogonal representation and cuts1.2. Dimensioning2. Joints3. Tolerances (dimensional, surface, geometrical)4. Mechanical elements and interpretation of assemblies5. SolidWorks

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources
Subject notes
Topic related web quires
Moodle Platform

Bibliography

C. Preciado and F.J. Moral. “Normalización del Dibujo Técnico”. EDITORIAL DONOSTIARRA

J.M. AuriaApilluelo, P. IbañezCarabantesand P. UbietoArtur. “Dibujo Industrial, Conjuntos y Despieces”. Editorial Thomson

Daniel E. Puncochar. “Interpretationof Geometry, Dimensioningand Tolerancing”. Editorial Industrial PressInc

Cecil Jensen. “Geometric, Dimensioning& Tolerancing”. Editorial Delmar

C.H. Simmons and D.E. Maguire. “Manual of Engineering Drawing: to British and International Standards”. DOI: 10.1016/B978-0-08-096652-6.00001-2

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