

[GJB101] GRAPHIC EXPRESION

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING		Subject	?
Semester	2	Course	1	Mention / Field of specialisation
Character	BASIC TRAINING		Language	CASTELLANO/EUSKARA
Plan	2020	Modality	Face-to-face	Total hours
Credits	6	Hours/week	5	90 class hours + 60 non-class hours = 150 total hours

PROFESSORS

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REQUIRED PREVIOUS KNOWLEDGE

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

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE04 - To have spatial skills and be familiar with graphic representation techniques using both traditional metric and descriptive geometry methods and computer-aided design applications.

CROSS

GJCTR2 - To be able to understand and apply knowledge to problem solving in complex work situations or specialised and professional environments calling for creative and innovative ideas, using self-developed arguments and procedures;

BASIC

G_CB2 - To be able to apply knowledge to occupational or professional tasks; have the necessary skills to pose and defend arguments, and to solve problems within their field of study

G_CB5 - To have developed learning abilities required to embark on subsequent studies with a high level of autonomy.

LEARNING RESULTS

RGJ141 They draw different types of parts in compliance 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	3 h.	2 h.	5 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	6 h.	5 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%
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: If the weighted average grade of the PCs is less than 3 out of 7, the student must take the recovery exam. If the score resulting from the weighted average of the PCs and the recovery is still less than 3 out of 7, this will be the grade of the learning result.

MAKE-UP MECHANISMS

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

Comments: - As a result of the continuous learning, it will only be one retake exam at the end of the semester. - Final score for PCs: %25 Weighted Average PC + %75 Retake

CH - Class hours: 31 h.

NCH - Non-class hours: 19 h.

TH - Total hours: 50 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

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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	5 h.	3 h.	8 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	10 h.	10 h.	20 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.	2 h.	12 h.
Carrying out exercises and solving problems individually and/or in teams	25 h.	20 h.	45 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%
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	10%
Individual written and/or oral tests or individual coding/programming tests	70%

Comments: If the weighted average grade of the PCs is less than 3 out of 7, the student must take the recovery exam. If the score resulting from the weighted average of the PCs and the recovery is still less than 3 out of 7, this will be the grade of the learning result.

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests
Comments: - As a result of continuous learning, it will only be one recovery exam at the end of the semester. - The recovery exam will be weighted by 75% at the end of the semester.

CH - Class hours: 50 h.

NCH - Non-class hours: 35 h.

TH - Total hours: 85 h.

RGJ181 They communicate, search and structure written information: they write a clear and concise project report following the criteria established in the guide for written reports using the appropriate software.

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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.	2 h.	4 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%
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MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Comments: Revision and correction of the written report of the semester project

CH - Class hours: 2 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 4 h.

RGJ182 They communicate, search and structure orally the information correctly: they make a clear and concise oral presentation and defense of the project, considering the aspects gathered in the oral communication guide and using the proper software approp

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.
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EVALUATION SYSTEM

W

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

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.

RGJ191 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

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

3 h.

1 h.

4 h.

EVALUATION SYSTEM

W

Observation (technical capacity, attitude and participation)

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen

CH - Class hours: 3 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 4 h.

RGJ192 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

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.

2 h.

4 h.

EVALUATION SYSTEM

W

Self-assessment

30%

Co-assessment

35%

Observation (technical capacity, attitude and participation)

35%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen

CH - Class hours: 2 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 4 h.

CONTENTS

1. Representation and interpretation of industrial parts
 - 1.1 Orthogonal representation
 - 1.2 Dimensioning
2. Threaded joints
3. Tolerances (dimensional, surface and geometrical)
4. Mechanical elements and assembly drawings
5. Solid works

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