

## [GJB201] GRAPHIC EXPRESION

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN MECHATRONICS ENGINEERING	<b>Subject</b>	?
<b>Semester</b>	2	<b>Course</b>	1
<b>Character</b>	BASIC TRAINING	<b>Mention / Field of specialisation</b>	
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face
<b>Credits</b>	6	<b>Language</b>	EUSKARA/CASTELLANO
		<b>Total hours</b>	92 class hours + 58 non-class hours = <b>150 total hours</b>

### 2030 AGENDA GOALS



### PROFESSORS

AZPI-UNZUETA, JAVIER (SOMORROSTRO)  
LASA BASTIDA, MIKEL

### REQUIRED PREVIOUS KNOWLEDGE

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

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>G-RA02</b> - 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
<b>G-RTR1</b> - 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
<b>G-RTR2</b> - 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)

#### LEARNING ACTIVITIES

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

CH

2 h.

NCH

1 h.

TH

3 h.

#### EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

W

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 [!] Acota y define las tolerancias necesarias de las piezas que forman un conjunto mecánico respetando las normas de dibujo técnico

#### LEARNING ACTIVITIES

Development and writing of records, reports, presentations, audiovisual material, etc. on

CH

3 h.

NCH

5 h.

TH

8 h.

projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

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

10%

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

80%

**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)

#### 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 [!] Representa diferentes tipos de piezas respetando las normas de dibujo técnico

#### 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

20 h.

6 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

10%

#### 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%.

project, master's thesis, challenges and problems

Individual written and/or oral tests or individual coding/programming tests 80%

**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:** 32 h.

**NCH - Non-class hours:** 18 h.

**TH - Total hours:** 50 h.

### **2RGJ190 (2 sem)**

#### **LEARNING ACTIVITIES**

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

**CH**

2 h.

**NCH**

1 h.

**TH**

3 h.

#### **EVALUATION SYSTEM**

**W**

100%

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

#### **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)**

#### **LEARNING ACTIVITIES**

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

**CH**

2 h.

**NCH**

1 h.

**TH**

3 h.

#### **EVALUATION SYSTEM**

**W**

100%

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

#### **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.

### **2RGJ194 (2 sem)**

#### **LEARNING ACTIVITIES**

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

**CH**

1 h.

**NCH**

2 h.

**TH**

3 h.

#### **EVALUATION SYSTEM**

**W**

100%

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

#### **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

[!] *Apuntes de la asignatura*
  
[!] *Consultas en páginas web relacionadas con el tema*
  
[!] *Plataforma Moodle*

### Bibliography

C. Preciado and F.J. Moral. &#8220;Normalización del Dibujo Técnico&#8221;. EDITORIAL DONOSTIARRA
  
J.M. AuriaApilluelo, P. IbañezCarabantesand P. UbietoArtur. &#8220;Dibujo Industrial, Conjuntos y Despieces&#8221;. Editorial Thomson
  
Daniel E. Puncochar. &#8220;Interpretationof Geometry, Dimensioningand Tolerancing&#8221;. Editorial Industrial PressInc
  
Cecil Jensen. &#8220;Geometric, Dimensioning& Tolerancing&#8221;. Editorial Delmar
  
C.H. Simmons and D.E. Maguire. &#8220;Manual of Engineering Drawing: to British and International Standards&#8221;. DOI: 10.1016/B978-0-08-096652-6.00001-2
  
[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_in k.pl?grupo=MECATRONICA12&ejecuta=5&\\_ST](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in k.pl?grupo=MECATRONICA12&ejecuta=5&_ST)