

## [GBD201] GRAPHIC EXPRESSION I

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN BIOMEDICAL ENGINEERING	<b>Subject</b>	GRAPHIC EXPRESSION
<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
		<b>Total hours</b>	94 class hours + 56 non-class hours = <b>150 total hours</b>

### 2030 AGENDA GOALS



### PROFESSORS

LAPEIRA AZCUE, ESTELA

### 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

#### 2RGB190 (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

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems  
Observation (technical capacity, attitude and participation)

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

#### 2RGB192 (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	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	(No mechanisms)
<b>CH - Class hours:</b> 2 h. <b>NCH - Non-class hours:</b> 1 h. <b>TH - Total hours:</b> 3 h.		

**RGB103** [!] *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	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	20 h.	6 h.	26 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS	
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%	Individual written and/or oral tests or individual coding/programming tests	
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%		

**CH - Class hours:** 31 h.

**NCH - Non-class hours:** 19 h.

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

**RGB104** [!] *Acota y define las tolerancias necesarias de las piezas que forman un conjunto mecánico 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	3 h.	5 h.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	10 h.	7 h.	17 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	8 h.		8 h.
Carrying out exercises and solving problems individually and/or in teams	32 h.	20 h.	52 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS	
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%	Individual written and/or oral tests or individual coding/programming tests	
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%		

**CH - Class hours:** 53 h.  
**NCH - Non-class hours:** 32 h.  
**TH - Total hours:** 85 h.

### 2RGB193 (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

W

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

100%

#### MAKE-UP MECHANISMS

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

Observation (technical capacity, attitude and participation)

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

### 2RGB194 (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

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.

### 2RGB191 (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

W

Self-assessment

25%

Co-assessment

25%

Observation (technical capacity, attitude and participation)

50%

#### MAKE-UP MECHANISMS

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

Observation (technical capacity, attitude and participation)

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

## CONTENTS

1. Representation of parts1.1. Orthogonal representation and cuts1.2. Dimensioning2. Threaded joints3. Clearances (dimensional, surface, geometric)4. Mechanical elements and interpretation of assemblies5. Solid Works

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

- [!] *Plataforma Moodle*
- [!] *Consultas en páginas web relacionadas con el tema*
- [!] *Transparencias de la asignatura*
- [!] *Software específico de la titulación*
- [!] *Proyección de videos*

### Bibliography

Prácticas de Dibujo Técnico (Cortes y secciones). Joaquín Gonzalo. Editorial Donostiarra. ISBN 8470633163  
Vistas y visualización de formas. Gaspar Fernández. Editorial Donostiarra. ISBN 8470633155  
Normalización del Dibujo Técnico. Candido Preciado y Francisco Jesús Moral. Editorial Donostiarra. ISBN 9788470633096