

[GBD202] GRAPHIC EXPRESSION II

GENERAL INFORMATION

Studies	DEGREE IN BIOMEDICAL ENGINEERING		Subject	GRAPHIC EXPRESSION
Semester	1	Course	2	Mention / Field of specialisation
Character	COMPULSORY		Language	EUSKARA
Plan	2022	Modality	Face-to-face	Total hours
Credits	4,5	Hours/week	3.88	69.8 class hours + 42.7 non-class hours = 112.5 total hours

2030 AGENDA GOALS



PROFESSORS

LAPEIRA AZCUE, ESTELA
 IRIBECAMPOS JUARISTI, MIKEL

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC EXPRESSION I	(No previous knowledge required)

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GBR205 - To integrate the principles of mechanical elements and assemblies to solve Biomedical Engineering problems.		x		4,02
G-RTR1 - 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		0,32
G-RTR2 - 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		0,16
Total:				4,5

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

SECONDARY LEARNING RESULTS

RGB210 [!] *Representa y acota correctamente cualquier pieza de un conjunto mecánico definiendo si fuesen necesarias, las tolerancias para su correcto funcionamiento*

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	5 h.	3 h.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	14 h.	5 h.	19 h.
Carrying out exercises and solving problems individually and/or in teams	17 h.	14,25 h.	31,25 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	42,5%	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	15%		
Individual written and/or oral tests or individual coding/programming tests	42,5%		

CH - Class hours: 38 h.
NCH - Non-class hours: 22,25 h.

TH - Total hours: 60,25 h.

1RGB293 (1 sem)

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.	1 h.	2 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: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 h.

1RGB290 (1 sem)

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	1,9 h.	1,1 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

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: 1,9 h.

NCH - Non-class hours: 1,1 h.

TH - Total hours: 3 h.

RGB209 [!] *Entiende el objetivo y funcionamiento de un conjunto mecánico y representa correctamente las piezas de cualquier conjunto siguiendo las normas de representación*

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	5 h.	3 h.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.		4 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	7 h.	4 h.	11 h.
Carrying out exercises and solving problems individually and/or in teams	9 h.	8,25 h.	17,25 h.

EVALUATION SYSTEM

W

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

40%

Presentation and defence of exercises, case studies, computer practical work, simulation practical work,

20%

MAKE-UP MECHANISMS

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

laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems
 Individual written and/or oral tests or individual coding/programming tests 40%

CH - Class hours: 25 h.
NCH - Non-class hours: 15,25 h.
TH - Total hours: 40,25 h.

1RGB291 (1 sem)

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	1,9 h.	1,1 h.	3 h.

EVALUATION SYSTEM

	<i>W</i>
Self-assessment	25%
Co-assessment	25%
Observation (technical capacity, attitude and participation)	50%

MAKE-UP MECHANISMS

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,9 h.
NCH - Non-class hours: 1,1 h.
TH - Total hours: 3 h.

1RGB292 (1 sem)

LEARNING ACTIVITIES

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

EVALUATION SYSTEM

	<i>W</i>
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: 1 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 2 h.

1RGB294 (1 sem)

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	1 h.	1 h.	2 h.

EVALUATION SYSTEM

	<i>W</i>
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

Observation (technical capacity, attitude and participation)

CH - Class hours: 1 h.

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

CONTENTS

[!]

1. Representación de conjuntos mecánicos
2. Representación de despieces
3. Conocimiento de elementos comerciales
 - a. Identificación de elementos comerciales en un plano
 - b. Saber elegir los elementos comerciales desde un catálogo
4. Tolerancias
 - a. Tolerancias dimensionales
 - b. Tolerancias superficiales
 - c. Tolerancias geométricas
5. SolidWorks

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

- [!] *Apuntes de la asignatura*
- [!] *Presentaciones en clase*
- [!] *Plataforma Moodle*
- [!] *Programas*

Bibliography

1. U.D. Adierazpen grafikoa I
2. U.D. Elementu mekanikoak
3. U.D. Perdoi dimentsionalak
4. U.D. Gainazal perdoiak
5. U.D. Perdoi geometrikoak
6. "Normalización del dibujo técnico" Cándido Preciado y Francisco Jesús Moral; Editorial Donostiarra
7. "Dibujo Industrial, Conjuntos y Despieces" J.M. Auria Apilluelo, P. Ibañez Carabantes y P. Ubieto Artur; Editorial Thomson
8. "Interpretation of Geometry, Dimensioning and Tolerancing" Daniel E. Puncochar; Editorial Industrial Press Inc
http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=BIOMEDIKOA21&ejecuta=65&_ST