

## [GJF201] METHODOLOGICAL FOUNDATIONS

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN MECHATRONICS ENGINEERING		<b>Subject</b>	?
<b>Semester</b>	1	<b>Course</b>	1	<b>Mention / Field of specialisation</b>
<b>Character</b>	BASIC TRAINING		<b>Language</b>	CASTELLANO/EUSKARA
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face	<b>Total hours</b>
<b>Credits</b>	6	<b>Hours/week</b>	5	90 class hours + 60 non-class hours = <b>150 total hours</b>

### PROFESSORS

OTEGI MARTINEZ, NAGORE
ARDANZA CUEVAS, ASIER

### REQUIRED PREVIOUS KNOWLEDGE

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

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<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		3,92
<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		2,08
<b>Total:</b>				<b>6</b>

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

### SECONDARY LEARNING RESULTS

**RGJ190** [!] *Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los cono*

#### 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	4 h.	3 h.	7 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	5 h.	4 h.	9 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.		6 h.
Carrying out exercises and solving problems individually and/or in teams	11 h.	11 h.	22 h.

#### EVALUATION SYSTEM

	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	30%
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	50%
Observation (technical capacity, attitude and participation)	20%

#### MAKE-UP MECHANISMS

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  
**Comments:** With the project of the second semester

**CH - Class hours:** 26 h.  
**NCH - Non-class hours:** 18 h.  
**TH - Total hours:** 44 h.

**RGJ191** [!] *Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de*

**plazos.**

**LEARNING ACTIVITIES**

	<b>CH</b>	<b>NCH</b>	<b>TH</b>
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	4 h.	3 h.	7 h.
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.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	3 h.		3 h.
Carrying out exercises and solving problems individually and/or in teams	10 h.	10 h.	20 h.

**EVALUATION SYSTEM**

**W**

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	30%
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	50%
Observation (technical capacity, attitude and participation)	20%

**MAKE-UP MECHANISMS**

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  
**Comments:** With the project of the second semester

**CH - Class hours:** 19 h.  
**NCH - Non-class hours:** 13 h.  
**TH - Total hours:** 32 h.

**RGJ192** [!] *Conoce y describe las fases para desarrollar los equipos de su ingeniería, e identifica y describe las funciones profesionales de un ingeniero, tomando conciencia de la contribución al logro de los objetivos de desarrollo sostenible (ODS)*

**LEARNING ACTIVITIES**

	<b>CH</b>	<b>NCH</b>	<b>TH</b>
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	8 h.	8 h.	16 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.		6 h.

**EVALUATION SYSTEM**

**W**

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	80%
Observation (technical capacity, attitude and participation)	20%

**MAKE-UP MECHANISMS**

(No mechanisms)

**CH - Class hours:** 14 h.  
**NCH - Non-class hours:** 8 h.  
**TH - Total hours:** 22 h.

**RGJ193** [!] *Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

**LEARNING ACTIVITIES**

	<b>CH</b>	<b>NCH</b>	<b>TH</b>
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	8 h.	9 h.	17 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.		4 h.

**EVALUATION SYSTEM**

**W**

Reports on the completion of exercises, case studies,	40%
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**MAKE-UP MECHANISMS**

Reports on the completion of exercises, case studies, computer

computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

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

Observation (technical capacity, attitude and participation)

20%

40%

exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

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

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

**CH - Class hours:** 15 h.

**NCH - Non-class hours:** 11 h.

**TH - Total hours:** 26 h.

**RGJ194** [!] *Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo un uso correcto del lenguaje*

#### 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	4 h.	2 h.	6 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.	4 h.	8 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	3 h.		3 h.
Carrying out exercises and solving problems individually and/or in teams	5 h.	4 h.	9 h.

#### EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	50%
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	30%
Observation (technical capacity, attitude and participation)	20%

#### MAKE-UP MECHANISMS

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

**Comments:** With the oral presentation of the project of the second semester

**CH - Class hours:** 16 h.

**NCH - Non-class hours:** 10 h.

**TH - Total hours:** 26 h.

## CONTENTS

1. Welcome plan
2. Teamwork
3. Oral communication
4. Written communication
5. Professional profile

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

Topic related web quires

Presentations by external Lecturers

Technical articles

Moodle Platform

Class presentations

Subject notes

### Bibliography

Johansen, Lars G., "Project Planning and Management", chapter 3 from: Project-Organised and Problem-Based Learning, Preliminary version

Kolmos, A., Du, X., Holgaard, J. E. and Jensen, L. P.: Facilitation in a PBL Environment, Aalborg University, 2008. (Irakurtzeko 23-34)

Bustos, C.; Moreno, A.; 2011 Los equipos: cómo trabajar juntos, sin tirarnos los trastos. ISBN 978-84-614-3951-5

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Video projections

Arana, N.; Astigarraga, E.; Carrera, X.; Rodríguez, V.; Zubizarreta, M. 2007. Marco conceptual y pedagógico para la implementación de la Formación por Proyectos en el Sena. Didáctica Proyectos Educativos. Bogotá. (irakurtzeko 172-181)  
[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_Ink.pl?grupo=MECATRONICA11&ejecuta=25&\\_ST](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=MECATRONICA11&ejecuta=25&_ST)