

## [GMX302] TECHNICAL WORKSHOP: MECHANICAL PROJECTS

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN MECHANICAL ENGINEERING	<b>Subject</b>	?
<b>Semester</b>	1	<b>Course</b>	3
<b>Character</b>	COMPULSORY	<b>Mention / Field of specialisation</b>	
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face
<b>Credits</b>	3	<b>Hours/week</b>	1.56
		<b>Language</b>	CASTELLANO/EUSKARA
		<b>Total hours</b>	28 class hours + 47 non-class hours = <b>75 total hours</b>

### PROFESSORS

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### REQUIRED PREVIOUS KNOWLEDGE

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

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>GMR312</b> - To demonstrate knowledge and ability to organize and manage projects. Know the organizational structure and functions of a project office		x		2,56
<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		0,2
<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
<b>Total:</b>				<b>3</b>

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

#### ENAE LEARNING RESULTS

- ENA103** - Knowledge and comprehension: Awareness of the multidisciplinary context of engineering.
- ENA105** - Analysis in engineering: The ability to identify, formulate and solve engineering problems in their speciality; choose and apply adequately established analytical, calculation and experimental methods; and acknowledge the importance of social, health and safety, environmental, economic, and industrial restrictions.
- ENA106** - Engineering projects: Ability to project, design and develop complex products (parts, components, finished products, etc.), processes and systems of their speciality, which meet the established requirements, including awareness of the social, health and safety, environmental, economic and industrial aspects, as well as selecting and applying appropriate project methods.
- ENA108** - Research and innovation: Ability to carry out bibliographic searches and consult and use databases and other information sources with discretion, in order to carry out simulation and analysis with the aim of conducting research on technical topics of their speciality.
- ENA111** - Practical application of engineering: Understanding of the applicable techniques and methods for analysis, design and research and their limitations in the field of their speciality.
- ENA114** - Practical application of engineering: Ability to apply standards of engineering practice in their speciality.
- ENA115** - Practical application of engineering: Knowledge of the social, health and safety, environmental, economic and industrial implications of engineering practice.
- ENA116** - Practical application of engineering: General ideas on economic, organisational and management issues (such as project, risk and change management) in the industrial and business context.
- ENA117** - Preparation of judgements: Ability to collect and interpret data and handle complex concepts within their speciality, in order to make judgements that involve reflection on ethical and social issues.
- ENA118** - Preparation of judgements: Ability to manage complex technical or professional activities or projects of their speciality, taking responsibility for decision making.
- ENA119** - Communication and Teamwork: Ability to effectively communicate information, ideas, problems and solutions in the field of engineering and with society in general.
- ENA120** - Communication and Teamwork: Ability to operate effectively in domestic and international contexts, individually and as a team, and to cooperate with both engineers and people from other disciplines.
- ENA121** - Continued training: Ability to acknowledge the need for their own continued training and to undertake this activity throughout their professional life independently.
- ENA122** - Continued training: Ability to stay up to date on science and technology innovations.

### SECONDARY LEARNING RESULTS

**RGM390** [!] *Definir y gestionar los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías específicas de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrate*

**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	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

**Comments:** Students have the responsibility of meeting the tutor to do the tracking of the project and to ensure the achievement of the goals.

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**Comments:** Continuous assessment and project feedback.

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

**RGM391** [!] *Coordinar el equipo de trabajo, estimulando la cohesión y buen clima para lograr la integración de todas las personas y su contribución para alcanzar un rendimiento apropiado, tanto a nivel individual como grupal, para el desarrollo del proyecto en*

**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	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

**Comments:** Students have the responsibility of meeting the tutor to do the tracking of the project and to ensure the achievement of the goals.

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**Comments:** Continuous assessment and project feedback.

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

**RGM392** [!] *Identificar y argumentar de forma precisa los ODS en los que incide el proyecto realizado, aportando posibles acciones para la mejora.*

**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		1 h.	1 h.

**EVALUATION SYSTEM**

**W**

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

**Comments:** Students have the responsibility of meeting the tutor to do the tracking of the project and to ensure the achievement of the goals.

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**Comments:** Continuous assessment and project feedback.

**CH - Class hours:** 0 h.

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

**RGM393** [!] *Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

**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	1 h.	2 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%

**Comments:** Students have the responsibility of meeting the tutor to do the tracking of the project and to ensure the achievement of the goals.

**MAKE-UP MECHANISMS**

(No mechanisms)

**Comments:** Continuous assessment and project feedback.

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

**RGM394** [!] *Realiza una presentación oral del proyecto, justificando las soluciones propuestas con argumentos elaborados y precisos, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

**LEARNING ACTIVITIES**

	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	2 h.	3 h.

**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%

**Comments:** Students have the responsibility of meeting the tutor to do the tracking of the project and to ensure the achievement of the goals.

**MAKE-UP MECHANISMS**

(No mechanisms)

**Comments:** Continuous assessment and project feedback.

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

**RGM329** [!] *Gestionar el tiempo, costos, especificaciones, recursos humanos y materiales para cumplir los objetivos de un proyecto*

**LEARNING ACTIVITIES**

	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	4 h.	5 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	1 h.	12 h.	13 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	2 h.	4 h.	6 h.

**EVALUATION SYSTEM**

	W
Reports on the completion of exercises, case studies,	40%

**MAKE-UP MECHANISMS**

Reports on the completion of exercises, case studies, computer

computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems		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	30%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	30%	<b>Comments:</b> Continuous assessment and project feedback.
<b>CH - Class hours:</b> 12 h.		
<b>NCH - Non-class hours:</b> 20 h.		
<b>TH - Total hours:</b> 32 h.		

**RGM330** [!] *Conocer las claves del proceso de creación de nuevas empresas, y ser consciente de la importancia de generar y obtener ideas de negocio, profundizando en la búsqueda de información relevante*

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	2 h.	4 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	6 h.	16 h.	22 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	2 h.	6 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	30%	Reports on the completion of exercises, case studies, 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	30%	<b>Comments:</b> Continuous assessment and project feedback.
Observation (technical capacity, attitude and participation)	40%	

**CH - Class hours:** 12 h.  
**NCH - Non-class hours:** 20 h.  
**TH - Total hours:** 32 h.

**CONTENTS**

**1. Management of the phases of a project:**

1. Introduction.
2. Definition.
3. Planning.
4. Execution.
5. Monitoring and control.
6. Completion and closure.

**2. Entrepreneurship:**

1. Entrepreneurial Process
2. From the Idea to the Business Opportunity.
3. Saiolan-BIC GIPUZKOA
4. APC Projects (High Growth Potential).
5. Business model CANVAS.
6. Standardisation and Industrial Property

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

Subject notes  
Moodle Platform  
Class presentations

### Bibliography

<https://katalogoa.mondragon.edu/janium-bin/sumario.pl?id=20230904145831>  
<https://www.inc.com/inc5000/2023>  
Alexander Osterwalder y Yves Pigneur. Business Model Generation&#8239;:A Handbook for Visionaries, Game Changers, and Challengers, 2010