[GMX301] METHODOLOGICAL FOUNDATIONS

GENERAL INFORMATION

Studies	DEGREE IN MECHANICAL ENGINEERING			**Subject**	MECHANICAL PROJECTS
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA
Credits	6	**Hours/week**	4.83	**Total hours**	87 class hours + 63 non-class hours = **150 total hours**

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
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*		3,92
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*		2,08
			Total:	6

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

ENAEE LEARNING RESULTS

ENA102 - Knowledge and comprehension: Knowledge and comprehension of the engineering disciplines of their speciality, at the level necessary to acquire the rest of the competencies of the degree, including notions of the latest advances.

ENA103 - Knowledge and comprehension: Awareness of the multidisciplinary context of engineering.

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.

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

RGM190 **[!]** ***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	10 h.	11 h.	21 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	4 h.	3 h.	7 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.	6 h.	10 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	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	30%	*(No 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	35%	
Individual written and/or oral tests or individual coding/programming tests	15%	
Observation (technical capacity, attitude and participation)	20%	

CH - Class hours: 24 h.
NCH - Non-class hours: 20 h.
TH - Total hours: 44 h.

RGM191 **[!]** ***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	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.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	2 h.	3 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.		4 h.
Carrying out exercises and solving problems individually and/or in teams	10 h.	8 h.	18 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%	*(No 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	35%	
Individual written and/or oral tests or individual coding/programming tests	15%	
Observation (technical capacity, attitude and participation)	20%	

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

RGM192 **[!]** ***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	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	1 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	6 h.	7 h.	13 h.
Carrying out visits and/or learning trips to other university centres, laboratories, companies and/or thermal power plants	4 h.		4 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	60%	*(No mechanisms)*
Individual written and/or oral tests or individual coding/programming tests	20%	
Observation (technical capacity, attitude and participation)	20%	

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

RGM193 **[!]** ***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	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	8 h.	5 h.	13 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.	5 h.	10 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	25%	*(No 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	35%	
Individual written and/or oral tests or individual coding/programming tests	20%	
Observation (technical capacity, attitude and participation)	20%	

CH - Class hours: 16 h.
NCH - Non-class hours: 10 h.
TH - Total hours: 26 h.

RGM194 **[!]** ***Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo uso correcto, inclusivo y no discriminatorio 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	3 h.	5 h.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	3 h.	3 h.	6 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	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	25%	*(No 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	35%	

Individual written and/or oral tests or individual coding/programming tests	20%
Observation (technical capacity, attitude and participation)	20%

CH - Class hours: 14 h.
NCH - Non-class hours: 12 h.
TH - Total hours: 26 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Technical articles
Subject notes
Presentations by external Lecturers
Topic related web quires
Moodle Platform
[!] *Aulas multifuncionales*
[!] *Recursos de la biblioteca de MU*

Bibliography

Bustos, C., & Moreno, A. (2001). Los equipos: cómo trabajar juntos sin tirarnos los trastos. Fundación Esplai; CRAC.

Cubías, A. Taller 1. El trabajo en equipo

Kolmos, A., Du, X., Holgaard, J. E., & Jensen, L. P. (2008). Facilitation in a PBL environment. Center for Engineering Education Research

Martínez, M., & Salvador, M. (2005). Aprender a trabajar en equipo (Vol. 20). Grupo Planeta (GBS).

Ortega, E. M. (2008). Aprender a aprender: clave para el aprendizaje a lo largo de la vida. Tribuna Abierta. CEE Participación Educativa, 9, 72-78.

Servei de Llengües UPC, UAB, UG. (2006). 50 aholku eraginkor, ahozko aurkezpenak egiteko.

Rey, C. A. (2006). Guía para la Elaboración de Artículos y Proyectos de Investigación (Basadas en las normas APA).