

[GMX301] METHODOLOGICAL FOUNDATIONS

GENERAL INFORMATION

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

2030 AGENDA GOALS



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

ENAAE LEARNING RESULTS

ENA102 - Knowledge and comprehension: Knowledge and comprehension of the engineering disciplines of their specialty, 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 specialty, 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 specialty.

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

1RGM194 (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	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	3 h.		3 h.

procedures associated with the subjects

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

25%

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%

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

CH - Class hours: 14 h.

NCH - Non-class hours: 12 h.

TH - Total hours: 26 h.

1RGM192 (1 sem)

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

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

60%

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

20%

Observation (technical capacity, attitude and participation)

20%

Comments: The final deliverable should include the recommendations received in the feedback received during the course of the work.

MAKE-UP MECHANISMS

(No mechanisms)

Comments: The final deliverable should include the recommendations received in the feedback received during the course of the work.

CH - Class hours: 14 h.

NCH - Non-class hours: 8 h.

TH - Total hours: 22 h.

1RGM193 (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

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%
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%

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

CH - Class hours: 16 h.

NCH - Non-class hours: 10 h.

TH - Total hours: 26 h.

1RGM190 (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	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

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	35%
Individual written and/or oral tests or individual coding/programming tests	15%
Observation (technical capacity, attitude and participation)	20%

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

CH - Class hours: 24 h.

NCH - Non-class hours: 20 h.

TH - Total hours: 44 h.

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

1RGM191 (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	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%

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

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

15%

Observation (technical capacity, attitude and participation)

20%

Comments: Continuous evaluation. Through the meetings with the tutor and the experts throughout the project, the work is channelled, mistakes are corrected and feedback is given to overcome the project.

CH - Class hours: 19 h.

NCH - Non-class hours: 13 h.

TH - Total hours: 32 h.

CONTENTS

1. Teamwork
2. Written communication in engineering
3. Oral communication in engineering
4. Learning to learn
5. POPBL learning methodology
6. Profile of mechanical engineer

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

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