

## [GEE303] TECHNICAL WORKSHOP AND PROJECT MANAGEMENT

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN INDUSTRIAL ELECTRONICS ENGINEERING		<b>Subject</b>	?	
<b>Semester</b>	2	<b>Course</b>	3	<b>Mention / Field of specialisation</b>	
<b>Character</b>	COMPULSORY				
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face	<b>Language</b>	CASTELLANO/EUSKARA
<b>Credits</b>	4,5	<b>Hours/week</b>	3.75	<b>Total hours</b>	67.5 class hours + 45 non-class hours = <b>112.5 total hours</b>

### PROFESSORS

GUALLAR PEREZ, FRANCISCO JAVIER  
SARALEGUI ZALBIDE, EIDER

### REQUIRED PREVIOUS KNOWLEDGE

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

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>GER312</b> - To know, organize and manage projects. Know the organizational structure and functions of a project office		x		3,78
<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		0,4
<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		0,32
<b>Total:</b>				<b>4,5</b>

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

### ENAAE LEARNING RESULTS

- ENA103** - Knowledge and comprehension: Awareness of the multidisciplinary context of engineering.
- ENA104** - Analysis in engineering: The ability to analyse complex products, processes and systems in their field of study; choose and apply relevant analytical, calculation and experimental methods in a suitable way; and correctly interpret the results of such analyses.
- 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.
- ENA109** - Research and innovation: Ability to consult and apply codes of good practice and security in their speciality.
- ENA110** - Research and innovation: Capacity and ability to project and carry out experimental investigations, interpret results, and reach conclusions in their field of study.
- 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.
- ENA112** - Practical application of engineering: Practical competency to solve complex problems, carry out complex engineering projects, and conduct investigations specific to their speciality.
- ENA113** - Practical application of engineering: Knowledge of application of materials, equipment and tools, engineering technology and processes, 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.

ENA122 - Continued training: Ability to stay up to date on science and technology innovations.

**SECONDARY LEARNING RESULTS**

**RGE390** [!] *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	2 h.	2 h.	4 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)	100%	Observation (technical capacity, attitude and participation) <b>Comments:</b> Continuous assessment.

CH - Class hours: 2 h.  
 NCH - Non-class hours: 2 h.  
 TH - Total hours: 4 h.

**RGE391** [!] *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	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)	100%	Observation (technical capacity, attitude and participation) <b>Comments:</b> Continuous assessment.

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

**RGE392** [!] *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	2 h.	1 h.	3 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	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems <b>Comments:</b> - Continuous assessment. - It may be asked to redo the document.

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

**RGE393** [!] *Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

LEARNING ACTIVITIES	CH	NCH	TH
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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	2 h.	2 h.	4 h.
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EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
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Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems <b>Comments:</b> - Continuous assessment. - It may be asked to redo the document.
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**CH - Class hours:** 2 h.  
**NCH - Non-class hours:** 2 h.  
**TH - Total hours:** 4 h.

**RGE394** [!] *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
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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.	1 h.	4 h.
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EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
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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%	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 <b>Comments:</b> - Continuous assessment.
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**CH - Class hours:** 3 h.  
**NCH - Non-class hours:** 1 h.  
**TH - Total hours:** 4 h.

**RGE330** [!] *Ser capaz de definir de los objetivos de un proyecto y la propia elaboración del planning.*

LEARNING ACTIVITIES	CH	NCH	TH
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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	2 h.	2 h.	4 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		2 h.	2 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.		4 h.
Computer simulation exercises, individually and/or in teams	2 h.	2 h.	4 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.		10 h.
Carrying out exercises and solving problems individually and/or in teams	2 h.	8 h.	10 h.
Carrying out work experience in real environments and writing the corresponding report	8 h.	5 h.	13 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
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Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	5,5%	Individual written and/or oral tests or individual coding/programming tests Prototype / Product
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Individual written and/or oral tests or individual coding/programming tests	86,2%	<b>Comments:</b> - Students with less than a 5 at the control point must retake the exam. - Final note of the control point: control point 25% and retake 75%. - For the courseworks, their correction will be asked. The maximum mark for the corrected courseworks will be 5.0. - In the project / PBL there will not be any retake of the individual defense.
Prototype / Product	8,3%	
<b>Comments:</b> - Control point: minimum grade 5. - Courseworks: minimum grade 5. - PBL project grade: 30% product, 20% technical content of the report and 50% individual technical defense.		
<b>CH - Class hours:</b> 28 h. <b>NCH - Non-class hours:</b> 19 h. <b>TH - Total hours:</b> 47 h.		

<b>RGE331</b> [!] <i>Ser capaz de realizar el seguimiento y control del proyecto en términos de plazo, coste y calidad.</i>			
<b>LEARNING ACTIVITIES</b>	<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	2 h.	2 h.	4 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		2 h.	2 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.		4 h.
Computer simulation exercises, individually and/or in teams	2 h.	2 h.	4 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	9 h.		9 h.
Carrying out exercises and solving problems individually and/or in teams	2,75 h.	7,75 h.	10,5 h.
Carrying out work experience in real environments and writing the corresponding report	8,75 h.	5,25 h.	14 h.
<b>EVALUATION SYSTEM</b>	<b>W</b>	<b>MAKE-UP MECHANISMS</b>	
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	5,9%	<b>Comments:</b> - Students with less than a 5 at the control point must retake the exam. - Final note of the control point: control point 25% and retake 75%. - For the courseworks, their correction will be asked. The maximum mark for the corrected courseworks will be 5.0. - In the project / PBL there will not be any retake of the individual defense.	
Individual written and/or oral tests or individual coding/programming tests	85,3%		
Prototype / Product	8,8%		
<b>Comments:</b> - Control point: minimum grade 5. - Courseworks: minimum grade 5. - PBL project grade: 30% product, 20% technical content of the report and 50% individual technical defense.			
<b>CH - Class hours:</b> 28,5 h. <b>NCH - Non-class hours:</b> 19 h. <b>TH - Total hours:</b> 47,5 h.			

## CONTENTS

1. Traditional Project Management -Waterfall clasical methodology
  - 1.1. What is a project?
  - 1.2. The importance of Project Management and its phases
    - 1.2.1. Definition
    - 1.2.3. Planning
    - 1.2.4. Execution
    - 1.2.5. Monitoring and control
    - 1.2.6. Closing
2. Agile Project Management

2.1. Agile philosophy

2.1.1. SRUM methodology

2.1.2 KANBAN methodology

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

Subject notes  
Technical articles  
Topic related web quires  
Moodle Platform

### Bibliography

Project Management Body of Knowledge, Project Management Institute (2017)  
Wiley Guide, Managing Projects. Morris, P. & Pinto, J.K. (2004)  
The Oxford Handbook of Project Management. Morris, P. ; Pinto, J.K. & Söderlund (2012)