

## [GOM301] OPTIMISATION TECHNIQUES AND TOOLS II

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN INDUSTRIAL ORGANIZATION 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>	3
		<b>Language</b>	CASTELLANO/EUSKARA
		<b>Total hours</b>	54 class hours + 21 non-class hours = <b>75 total hours</b>

### PROFESSORS

EREÑO INCERA, ANA MONSERRAT

### REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
<i>(No specific previous subjects required)</i>	<i>(No previous knowledge required)</i>

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>GOR309</b> - To generate knowledge through the identification and modeling of data to improve the management and evolution of the organization		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

ENAE LEARNING RESULTS	ECTS
<b>ENAE03</b> - Knowledge and understanding: Sufficient knowledge of their branch of engineering, including some knowledge at the forefront of their field.	0,45
<b>ENAE07</b> - Analysis in engineering: Ability to choose and apply relevant modelling and analytical methods.	0,3
<b>ENAE09</b> - Engineering projects: Understanding of the different methods and ability to use them.	0,39
<b>ENAE12</b> - Research & innovation: Technical and lab competences.	0,39
<b>ENAE15</b> - Practical application of engineering: Understanding of applicable methods and techniques and their limitations.	0,3
<b>ENAE17</b> - Transversal competences: To work effectively, both individually and in a team.	0,39
<b>ENAE18</b> - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,39
<b>ENAE20</b> - Transversal competences: Demonstrate that they are aware of entrepreneurial practices and project management, in addition to risk control and management and understand their limitations.	0,39
<b>Total:</b>	<b>3</b>

### SECONDARY LEARNING RESULTS

**RG0390** [!] *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

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	1 h.	1 h.	2 h.

#### EVALUATION SYSTEM

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	75%
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	25%

#### MAKE-UP MECHANISMS

*(No mechanisms)*

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

**RG0391** [!] *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**

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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	1 h.	1 h.	2 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	75%	<i>(No mechanisms)</i>	
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	25%		

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

**RG0392** [!] *Identificar y argumentar de forma precisa los ODS en los que incide el proyecto realizado, aportando posibles acciones para la mejora.*

**LEARNING ACTIVITIES**

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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	1 h.		1 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	75%	<i>(No mechanisms)</i>	
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	25%		

**CH - Class hours:** 1 h.  
**NCH - Non-class hours:** 0 h.  
**TH - Total hours:** 1 h.

**RG0393** [!] *Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

**LEARNING ACTIVITIES**

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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.	1 h.	3 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	75%	(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	25%	

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

**RG0394** [!] *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.*

<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.	1 h.	3 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	75%	(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	25%	

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

**RG0324** [!] *GENERA modelos de los datos de una organización para gestionar los procesos de una organización*

<b>LEARNING ACTIVITIES</b>	<b>CH</b>	<b>NCH</b>	<b>TH</b>
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.	2 h.	8 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	10 h.	4 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	50%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	50%	

**CH - Class hours:** 24 h.  
**NCH - Non-class hours:** 8 h.  
**TH - Total hours:** 32 h.

**RG0325 [!]** *APLICA técnicas y herramientas para el tratamiento de la información y la gestión del conocimiento*

**LEARNING ACTIVITIES**

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Computer simulation exercises, individually and/or in teams	15 h.	5 h.	20 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	8 h.	4 h.	12 h.

**EVALUATION SYSTEM**

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

*W*

100%

**MAKE-UP MECHANISMS**

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

**CH - Class hours:** 23 h.

**NCH - Non-class hours:** 9 h.

**TH - Total hours:** 32 h.

**CONTENTS**

- 1- Introduction to databases
- 2- Data modeling- ER Model
- 3- Data normalization- Relational Model
- 4- Database system creation - Ms Access
- 5- Data exploitation- queries

**LEARNING RESOURCES AND BIBLIOGRAPHY**

**Learning resources**

Subject notes  
 Moodle Platform  
 Class presentations

**Bibliography**

*(No bibliography)*