

[GOJ303] QUANTITATIVE METHODS FOR INDUSTRIAL ORGANISATION II

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL ORGANIZATION ENGINEERING		Subject	?	
Semester	1	Course	3	Mention / Field of specialisation	
Character	COMPULSORY				
Plan	2022	Modality	Face-to-face	Language	CASTELLANO/EUSKARA
Credits	6	Hours/week	5.33	Total hours	96 class hours + 54 non-class hours = 150 total hours

PROFESSORS

SOTO RUIZ DE GORDOA, MIRIAM

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GOR304 - To analyze supply chains, production plants and/or supply chains using simulation tools, in order to make timely organizational decisions	x			5,08
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		0,44
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		0,48
Total:				6

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

ENAE LEARNING RESULTS

ENAE LEARNING RESULTS	ECTS	
ENAE03 - Knowledge and understanding: Sufficient knowledge of their branch of engineering, including some knowledge at the forefront of their field.	1,8	
ENAE07 - Analysis in engineering: Ability to choose and apply relevant modelling and analytical methods.	0,45	
ENAE09 - Engineering projects: Understanding of the different methods and ability to use them.	0,45	
ENAE11 - Research & innovation: Ability to design and carry out experiments, to interpret data and draw conclusions.	1,8	
ENAE12 - Research & innovation: Technical and lab competences.	0,3	
ENAE15 - Practical application of engineering: Understanding of applicable methods and techniques and their limitations.	0,3	
ENAE17 - Transversal competences: To work effectively, both individually and in a team.	0,45	
ENAE18 - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,45	
Total:		6

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

	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	3 h.	1 h.	4 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 3 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 4 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		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		3 h.	1 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP 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	100%	(No mechanisms)		

CH - Class hours: 3 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 4 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		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		
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%	(No mechanisms)		

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

RG0393 [!] *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		4 h.	2 h.	6 h.
EVALUATION SYSTEM	W	MAKE-UP 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	100%	(No mechanisms)		

CH - Class hours: 4 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 6 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.*

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	4 h.	2 h.	6 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 4 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 6 h.

RG0308 [!] *DESARROLLA modelos de simulación adecuados de entornos logísticos reales.*

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Computer simulation exercises, individually and/or in teams	20 h.	30 h.	50 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	30 h.		30 h.

EVALUATION SYSTEM

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

W

20%

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

80%

MAKE-UP MECHANISMS

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

CH - Class hours: 50 h.
NCH - Non-class hours: 30 h.
TH - Total hours: 80 h.

RG0309 [!] *ANALIZA los resultados obtenidos tras la simulación*

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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	20 h.	17 h.	37 h.

EVALUATION SYSTEM

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

W

30%

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

70%

MAKE-UP MECHANISMS

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

CH - Class hours: 30 h.
NCH - Non-class hours: 17 h.
TH - Total hours: 47 h.

CONTENTS

1. Introduction to simulation
2. How to simulate using Flexsim
 1. Flexsim: concepts and terminology
 2. Grouping and ungrouping flowitems
 3. Global tables
 4. Conveyors
 5. Production prioritization
 6. Production sequencing
 7. Task executers
 8. Experimenter
3. Decision making using Flexsim

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Specific Master Software
Slides of the subject
Video projections
Moodle Platform
Class presentations

Bibliography

(No bibliography)