Goi Eskola Politeknikoa | Mondragon Unibertsitatea
Course: 2024 / 2025 - Course planning

Mondragon
Unibertsitatea
Goi Eskola
Politeknikoa
Escuela Politécnica
Superior

[GOD304] MANUFACTURING ENGINEERING

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL ORGANIZATION ENGINEERING	**Subject**	PRODUCTION ENGINEERING
Semester	1	**Course** 2	
Character	COMPULSORY	**Mention / Field of specialisation**	
Plan	2022	**Modality** Face-to-face	**Language** EUSKARA/CASTELLANO
Credits	6	**Hours/week** 5.11	**Total hours** 92 class hours + 58 non-class hours = **150 total hours**

2030 AGENDA GOALS

PROFESSORS

	LARRINAGA URZELAY, GAIZKA
	OSINAGA URIZAR, BEÑAT

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GOR206 - To apply appropriate tools and methods to minimize and/or eliminate waste incurred by a productive or service company.		x		5,4
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		0,36
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		0,24
			Total:	**6**

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

ENAEE LEARNING RESULTS	ECTS
ENAE02 - Knowledge and understanding: A systematic understanding of the key aspects and concepts of their branch of engineering.	2,56
ENAE04 - Knowledge and understanding: To be aware of the multidisciplinary context of engineering.	0,2
ENAE06 - Analysis in engineering: Ability to apply their knowledge and understanding in analysing product, process and method engineering.	0,2
ENAE08 - Engineering projects: Ability to apply their knowledge in the development and completion of projects which meet specific requirements.	0,51
ENAE12 - Research & innovation: Technical and lab competences.	0,52
ENAE13 - Practical application of engineering: Ability to select and use suitable equipment, tools and methods.	1
ENAE17 - Transversal competences: To work effectively, both individually and in a team.	0,51
ENAE18 - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,51
Total:	**6**

SECONDARY LEARNING RESULTS

1RGO291 **(1 sem)**

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.	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	100%	*(No mechanisms)*	

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project, master's thesis, challenges and problems

CH - Class hours: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

RGO212 [!] *Aplica las técnicas y herramientas adecuadas para minimizar y/o eliminar las fuentes de despilfarro*

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	2 h.	10 h.	12 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	3 h.		3 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	15 h.	5 h.	20 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	14 h.		14 h.
Carrying out exercises and solving problems individually and/or in teams	10 h.	5 h.	15 h.
Role-playing games	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	40%	Individual written and/or oral tests or individual coding/programming tests
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	20%	
Individual written and/or oral tests or individual coding/programming tests	40%	

CH - Class hours: 48 h.
NCH - Non-class hours: 20 h.
TH - Total hours: 68 h.

RGO213 [!] *Desarrolla la distribución en planta (funcional, lineal, celular, etc.) adecuada a la demanda de producto o productos de una empresa productiva*

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	2 h.	13 h.	15 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	5 h.		5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	15 h.		15 h.
Carrying out exercises and solving problems individually and/or in teams	16 h.	12 h.	28 h.
Role-playing games	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	30%	Individual written and/or oral tests or individual coding/programming tests
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	30%	
Individual written and/or oral tests or individual	40%	

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coding/programming tests

CH - Class hours: 42 h.
NCH - Non-class hours: 25 h.
TH - Total hours: 67 h.

1RGO292 (1 sem)

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%	*(No mechanisms)*

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

1RGO290 (1 sem)

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.	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%	*(No mechanisms)*

CH - Class hours: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

1RGO293 (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.	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: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

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1RGO294 (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.	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%	*(No mechanisms)*

CH - Class hours: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

CONTENTS

INDUSTRIAL PRODUCTION

1.Introduction to the Industrial company

2. New Industrial approach

3.5S's

4.SMED

5.6 big losses

6.Work method analysis

7.Plant distribution (layout)

8.Balancing

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LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
[!] *Apuntes de la asignatura* [!] *Plataforma Moodle* [!] *Presentaciones en clase* [!] *Realización de prácticas en laboratorio*	5S for Operators. 5 pillars of the visual workplace American Technical Publishers Ltd. ISBN: 1.56327-123-0 BLACK, J. T. y HUNTER, Steve L. Lean manufacturing systems and cell design. Dearborn, Michigan: Society of Manufacturing Engineers, 2003 CUATRECASAS, Lluís. Diseño avanzado de procesos y plantas de producción flexible. Profit Editorial, 2009 WOMACK, James P. y JONES, Daniel T. Lean thinking: cómo utilizar el pensamiento lean para eliminar los despilfarros y crear valor en la empresa. Ediciones Gestión 2000, 2005 WOMACK, James P.; JONES, Daniel T. y ROOS, Daniel. The machine that changed the world: How Lean Production revolutionized