

## [GJG201] MANUFACTURING TECHNOLOGY

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN MECHATRONICS ENGINEERING		<b>Subject</b>	?	
<b>Semester</b>	2	<b>Course</b>	1	<b>Mention / Field of specialisation</b>	
<b>Character</b>	OPTIONAL	<b>Modality</b>	Face-to-face	<b>Language</b>	CASTELLANO/EUSKARA
<b>Plan</b>	2022	<b>Hours/week</b>	5	<b>Total hours</b>	90 class hours + 60 non-class hours = <b>150 total hours</b>

### PROFESSORS

SAENZ DE ARGANDOÑA FERNANDEZ DE GOROSTIZA, ENEKO
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OTEGI MARTINEZ, NAGORE
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IRIARTE ELORZA, ARANTZAZU

### REQUIRED PREVIOUS KNOWLEDGE

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

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>GJR105</b> - To know the different production and manufacturing systems, their characteristics and the main parameters that define them	x			5,4
<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		0,32
<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		0,28
<b>Total:</b>				<b>6</b>

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

### SECONDARY LEARNING RESULTS

**RGJ190** [!] *Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los cono*

#### 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
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

#### MAKE-UP MECHANISMS

(No mechanisms)  
**Comments:** Continuous assessment. Retake is not foreseen.

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

**RGJ191** [!] *Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de plazos.*

#### LEARNING ACTIVITIES

	CH	NCH	TH
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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**

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

100%

(No mechanisms)

**Comments:** Continuous assessment. Retake is not foreseen.

**CH - Class hours:** 2 h.

**NCH - Non-class hours:** 2 h.

**TH - Total hours:** 4 h.

**RGJ193** [!] *Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

**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.

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)

**Comments:** Revision and correction of the written report of the semester project.

**CH - Class hours:** 2 h.

**NCH - Non-class hours:** 1 h.

**TH - Total hours:** 3 h.

**RGJ194** [!] *Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo un uso correcto del lenguaje*

**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.

2 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

100%

(No mechanisms)

**Comments:** Continuous assessment. Retake is not foreseen.

**CH - Class hours:** 2 h.

**NCH - Non-class hours:** 2 h.

**TH - Total hours:** 4 h.

**RGJ1011** [!] *Conoce los procesos de fabricación por conformado existentes comprendiendo sus ventajas y limitaciones así como sus principales variables*

**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.

7 h.

17 h.

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

4 h.

10 h.

14 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and

15 h.

4 h.

19 h.

procedures associated with the subjects

**EVALUATION SYSTEM**

**W**

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

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

**Comments:** In the event of having to take the make-up test, final mark: 75% mark for the make-up test + 25% mark for the first test.

**CH - Class hours:** 29 h.

**NCH - Non-class hours:** 21 h.

**TH - Total hours:** 50 h.

**RGJ2012** [!] *Conoce los procesos de fabricación por arranque de viruta existentes comprendiendo sus ventajas y limitaciones así como sus principales variables*

**LEARNING ACTIVITIES**

**CH**

**NCH**

**TH**

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

2 h.

6 h.

8 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

26 h.

16 h.

42 h.

**EVALUATION SYSTEM**

**W**

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

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

**Comments:** In the event of having to take the make-up test, final mark: 75% mark for the make-up test + 25% mark for the first test.

**CH - Class hours:** 28 h.

**NCH - Non-class hours:** 22 h.

**TH - Total hours:** 50 h.

**RGJ2013** [!] *Es capaz de seleccionar y desarrollar el proceso de fabricación óptimo para un componente mecánico que tenga una geometría y material dados*

**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

25 h.

10 h.

35 h.

**EVALUATION SYSTEM**

**W**

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%

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**Comments:** Continuous assessment, no make-up foreseen

**CH - Class hours:** 25 h.

**NCH - Non-class hours:** 10 h.

**TH - Total hours:** 35 h.

**CONTENTS**

Forming

-Sheet metal forming-Casting

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Machining

-Turning-Milling-Drilling-Basic cutting tools-Basic cutting conditions-Process sheets-CNC

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**LEARNING RESOURCES AND BIBLIOGRAPHY**

**Learning resources**

Subject notes  
Video projections  
Lab practical training

**Bibliography**

Fundamentals of Modern Manufacturing. Materials, Processes and Systems. Mikell P. Groover.  
Kalpakjian, S., Schmid, R.S. Manufacturing Engineering and Technology. Prentice Hall, New Jersey, 2000. ISBN: 978-0133128741  
[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_Ink.pl?grupo=MECATRONICA12&ejecuta=25&\\_ST](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=MECATRONICA12&ejecuta=25&_ST)