

## [GJJ204] MACHINE ELEMENTS

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN MECHATRONICS ENGINEERING		<b>Subject</b>	?
<b>Semester</b>	1	<b>Course</b>	2	<b>Mention / Field of specialisation</b>
<b>Character</b>	OPTIONAL		<b>Language</b>	CASTELLANO/EUSKARA
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face	<b>Total hours</b>
<b>Credits</b>	3	<b>Hours/week</b>	2.5	45 class hours + 30 non-class hours = <b>75 total hours</b>

### PROFESSORS

ULACIA GARMENDIA, IBAI

### REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC EXPRESION	(No previous knowledge required)

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GJR211 - To know the basic principles of machine elements	x			2,6
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		0,16
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
<b>Total:</b>				<b>3</b>

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

### SECONDARY LEARNING RESULTS

**RGJ290** [!] *Proponer los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías propias de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategia de aprendiz*

#### 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	1 h.	1 h.	2 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

(No mechanisms)

Comments: With the project of the second semester

CH - Class hours: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 h.

**RGJ291** [!] *Establecer las responsabilidades de los miembros del equipo utilizando técnicas adecuadas para fomentar la eficiencia del equipo para el desarrollo del proyecto en los plazos establecidos (compartir recursos, aportar ideas, habilidades comunicativas*

#### 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	1 h.	1 h.	2 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

(No mechanisms)

Comments: With the project of the second semester

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

**RGJ293** [!] *Redacta y estructura correctamente la memoria del proyecto, haciendo un uso correcto del lenguaje. Para ello, busca y hace uso de las fuentes de información adecuadas*

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.
<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	100%	(No mechanisms)	
<b>Comments:</b> 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.

**RGJ294** [!] *Realiza una presentación oral del proyecto argumentando de forma eficaz, y 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.	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	100%	(No mechanisms)	
<b>Comments:</b> With the oral presentation of the project of the second semester			

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

**RGJ230** [!] *Conoce elementos de máquina mecánicos y sus funciones, identificando los parámetros de selección de los mismos*

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	5 h.	3 h.	8 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	6 h.	5 h.	11 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.	6 h.	16 h.
Practical work in workshops and/or laboratories, individually and/or in teams	3 h.	2 h.	5 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	35%	Individual written and/or oral tests or individual coding/programming tests	
<b>Comments:</b> Final mark: written retake exam (75%) + exam (25%).			

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

65%

Laboratory practices will be made-up by on-going evaluation.

**CH - Class hours:** 24 h.

**NCH - Non-class hours:** 16 h.

**TH - Total hours:** 40 h.

**RGJ231** [!] *Selecciona elementos de máquina mecánicos a partir de catálogos comerciales, valorando sus condiciones operativas*

**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	3 h.	2 h.	5 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	4 h.	3 h.	7 h.
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Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	2 h.	6 h.
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Carrying out exercises and solving problems individually and/or in teams	4 h.	3 h.	7 h.
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**EVALUATION SYSTEM**

*W*

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

35%

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

65%

**MAKE-UP MECHANISMS**

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

**Comments:** Final mark: written retake exam (75%) + exam (25%). Laboratory practices will be made-up by on-going evaluation.

**CH - Class hours:** 15 h.

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

**TH - Total hours:** 25 h.

**CONTENTS**

1. CONNECTING ELEMENTS AND FITTINGS
2. ROTARY MOVEMENT GUIDING ELEMENTS
  - Friction guiding elements
  - Rolling guiding elements
3. LINEAR MOVEMENT GUIDING ELEMENTS
  - Friction guiding elements
  - Rolling guiding elements
4. SEALING ELEMENTS
  - Static sealing
  - Dynamic sealing

**LEARNING RESOURCES AND BIBLIOGRAPHY**

**Learning resources**

Topic related web quires  
 Labs  
 Presentations by external Lecturers  
 Slides of the subject  
 Moodle Platform

**Bibliography**

[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_in\\_k.pl?grupo=MECATRONICA21&ejecuta=25&\\_ST](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in_k.pl?grupo=MECATRONICA21&ejecuta=25&_ST)