[GJJ201] MECHANICAL TECHNOLOGY

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	?
Semester	1	**Course**	1	**Mention / Field of specialisation**	???
Character	OPTIONAL				
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

GOMEZ SAGARZAZU, MIREN
OROBENGOA GURIDI, DANEL
AZPI-AURTENETXE, JON (SOMORROSTRO)
BIZKARRA LANGARA, KEPA
OLAZABAL LARRAÑAGA, JON ANDER
URIBE AZKARRETA, MAITANE

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GJR104 - To know and apply the basic principles of materials engineering, metrology and industrial fluidic systems	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

SECONDARY LEARNING RESULTS

1RGJ194 **(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	1 h.	2 h.	3 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: With the oral presentation of the project of the second semester

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

RGJ1113 **[!]** ***Identifica los componentes y describe las funciones que cumplen en un sistema de potencia fluidica e interpreta los circuitos y diagramas en los que estos se representan***

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	4 h.	3 h.	7 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	10 h.	12 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	16 h.	2 h.	18 h.
Carrying out exercises and solving problems individually and/or in teams	8 h.	7 h.	15 h.
Practical work in workshops and/or laboratories, individually and/or in teams	10 h.	6 h.	16 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	27%
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	10%
Individual written and/or oral tests or individual coding/programming tests	63%

MAKE-UP MECHANISMS

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

Comments: If a retake exam is needed, the mark will be calculated 25% first exam 75% retake

CH - Class hours: 40 h.
NCH - Non-class hours: 28 h.
TH - Total hours: 68 h.

1RGJ190 (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
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: With the project of the second semester

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

RGJ1112 [!] *Conoce y aplica las técnicas y aparatos de medida y control utilizados en la industria manufacturera*

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.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	2 h.	1 h.	3 h.
Practical work in workshops and/or laboratories, individually and/or in teams	6 h.	3 h.	9 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	90%
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	10%

MAKE-UP MECHANISMS

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

Comments: If a retake exam is needed, the mark will be calculated 25% first exam 75% retake

CH - Class hours: 11 h.
NCH - Non-class hours: 4 h.
TH - Total hours: 15 h.

1RGJ193 **(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	2 h.	1 h.	3 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: 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.

1RGJ191 **(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
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: With the project of the second semester

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

1RGJ192 **(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
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)

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

RGJ1111 **[!]** ***Distingue entre los diferentes tipos de material entendiendo los fundamentos de ciencia, tecnología y química de materiales, comprendiendo la relación entre la microestructura, la síntesis o procesado y las propiedades de los materiales***

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.	2 h.	5 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	8 h.	10 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	19 h.	6 h.	25 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.	2 h.	6 h.
Practical work in workshops and/or laboratories, individually and/or in teams	4 h.	2 h.	6 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	27%
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	10%
Individual written and/or oral tests or individual coding/programming tests	63%

MAKE-UP MECHANISMS

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

Comments: If a retake exam is needed, the mark will be calculated 25% first exam 75% retake

CH - Class hours: 32 h.
NCH - Non-class hours: 20 h.
TH - Total hours: 52 h.

CONTENTS

The Mechanical Technology course is made up of three well-differentiated sections:1. MATERIALS- Metallic alloys* Steels and castings and their designations.* Heat and surface treatments of steels.* Non-ferrous metals- Plastics* Classification and structure* Mechanical properties* Physical properties- Tests* Mechanical tests* Non-destructive testing2. METROLOGY- Accuracy- Measuring elements: rulers, calipers, micrometers, dial indicators, gauges and standards- Dial gauges, gauges and standards- Roughness meters3. FLUIDS- Fluids applications in industry- Fluids for power transmission applications (hydraulics and pneumatics). - Actuators- Valves and pumps- Compressed air installations- Hydraulic and pneumatic accumulator- Hydraulic circuits of industrial machines (Interpretation and design)

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

[!] *Consultas en páginas web relacionadas con el tema*
[!] *Laboratorios*
[!] *Plataforma Moodle*
[!] *Proyección de videos*
[!] *Realización de prácticas en laboratorio*
[!] *Transparencias de la asignatura*

Bibliography

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