[GJI302] OP S2. MECHATRONIC SYSTEM ASSEMBLY LABORATORY II

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	?
Semester	2	**Course**	2	**Mention / Field of specialisation**	???
Character	OPTIONAL				
Plan	2025	**Modality**	Face-to-face	**Language**	CASTELLANO/EUSKARA
Credits	4,5	**Hours/week**	3.75	**Total hours**	67.5 class hours + 45 non-class hours = **112.5 total hours**

2030 AGENDA GOALS

PROFESSORS

ANZOLA GARCIA, JON
SUEIRO ANDINO, URKO
BADIOLA AIESTARAN, XABIER
AZPI-VIGURI, MIGUEL ANGEL (SOMORROSTRO)
CABEZAS OLIVENZA, MIREYA

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
BASIC INDUSTRIAL AUTOMATION	*(No previous knowledge required)*
ELECTRICAL POWER SYSTEMS	

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GJR220 - To know and apply principles of installation of automated electrical systems and measurement of electrical variables	x			4,02
G-TR1 - 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
G-TR2 - 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		0,16
			Total:	4,5

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

SECONDARY LEARNING RESULTS

2RGJ291 **(2 sem)**

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	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: Continuous assessment. Retake is not foreseen.

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

2RGJ292 **(2 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	1 h.	1 h.	2 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: 1 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 2 h.

RGJ229 **[!]** ***Utiliza diferentes instrumentos para la verificación y medida de variables eléctricas***

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	8 h.	6 h.	14 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	2 h.	6 h.
Practical work in workshops and/or laboratories, individually and/or in teams	19,5 h.	11 h.	30,5 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	80%	Individual written and/or oral tests or individual coding/programming tests **Comments:** In case of need of recovery, final result: 25% grade obtained in practical exercises + 75% recovery grade.
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%	

CH - Class hours: 31,5 h.
NCH - Non-class hours: 19 h.
TH - Total hours: 50,5 h.

2RGJ293 **(2 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.	1 h.	2 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: 1 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 2 h.

2RGJ290 **[!]** ***(2 sem)Proponer los objetivos y planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías - que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategia de aprendizaje eficaz***

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

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

2RGJ294 **[!]** ***(2 sem)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	1 h.	1 h.	2 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: 1 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 2 h.

RGJ228 **[!]** ***Realiza instalaciones de sistemas eléctricos automatizados, interpretando planos, esquemas y procedimientos.***

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	9 h.	5 h.	14 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	2 h.	6 h.	8 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	8 h.	4 h.	12 h.
Seminars, debates and/or workshops to deepen and/or share experiences.	10 h.	6 h.	16 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	80%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
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%	**Comments:** The mark is calculated by the grade obtained from the results of the practical exercises. In case of need of recovery, final result: 25% grade obtained in practical exercises + 75% recovery grade.

CH - Class hours: 29 h.
NCH - Non-class hours: 21 h.
TH - Total hours: 50 h.

CONTENTS

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INSTALACIÓN DE SISTEMAS ELÉCTRICOS AUTOMATIZADOS

- Interpretación de planos eléctricos (Software EPLAN)

- Cableado de instalaciones eléctricas automatizadas para diferentes aplicaciones

TÉCNICAS DE VERIFICACIÓN Y MEDICIÓN DE MAGNITUDES EN SISTEMAS ELÉCTRICOS/ELECTRÓNICOS

- Instrumentación de medida

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

[!] *Plataforma Moodle*
[!] *Transparencias de la asignatura*
[!] *Laboratorios*
[!] *Presentaciones en clase*
[!] *Realización de prácticas en laboratorio*

Bibliography

PALLAS, R. 2003. Sensores y acondicionadores de señal. Barcelona. Marcombo

LÁZARO, A.M. 1994. Problemas resueltos de instrumentación y medidas electrónicas. Madrid. Paraninfo.

CERDÁ, L.M. 2014. Instalaciones eléctricas y automatismos. Madrid. Paraninfo.

GISCHEL, B. 2016. EPLAN Electric P8 Reference Handbook. Hanser Gardner Publications

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_lnk.pl?grupo=MECATRONICA22&ejecuta=30&_ST