[GJI102] MECHATRONIC SYSTEMS ASSEMBLY LABORATORY II

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	?
Semester	2	**Course**	2	**Mention / Field of specialisation**	
Character	OPTIONAL				
Plan	2020	**Modality**	Face-to-face	**Language**	EUSKARA/CASTELLANO
Credits	4,5	**Hours/week**	3.75	**Total hours**	67.5 class hours + 45 non-class hours = **112.5 total hours**

PROFESSORS

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REQUIRED PREVIOUS KNOWLEDGE

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

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE34 - Knowledge and capacity for the assembly and servicing of electrical / electronic systems

GENERAL

GJCG03 - Addressing and optimising activities of assembly, commissioning, assistance and maintenance of facilities, machinery, and industrial mechatronic systems

GJCG04 - Managing technically teams and people in activities of assembly, commissioning, assistance and maintenance of facilities, machinery and industrial systems, through the methodology of administration by projects for the effective execution of planning

CROSS

GJCTR2 - To be able to understand and apply knowledge to problem solving in complex work situations or specialised and professional environments calling for creative and innovative ideas, using self-developed arguments and procedures;

LEARNING RESULTS

RG201 They coordinate their work with the other members of the team, contribute in their team to the development of the tasks to be carried out and the creation of a good working climate.

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
Self-assessment	30%
Co-assessment	35%
Observation (technical capacity, attitude and participation)	35%

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.

RG202 They make decisions and assess the possible consequences of the selected alternative.

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

Observation (technical capacity, attitude and participation)	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.

RG204 **They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, in writing.**

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

RG205 **They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, orally.**

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

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

RGJ230 **They carry out installations of automated electrical systems, interpreting plans, schemes and procedures.**

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.
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 note is calculated according to the qualification obtained from the results of practice. In case of need for make-up, final result: 25% mark in practical exercises + 75% mark of the make-up.

CH - Class hours: 28 h.
NCH - Non-class hours: 22 h.
TH - Total hours: 50 h.

RGJ231 They use different devices for the verification and measurement of electrical 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	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
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:** In case of need for make-up, final result: 25% mark in practical exercises + 75% mark of the make-up.

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

CONTENTS

INSTALLATION OF AUTOMATED ELECTRICAL SYSTEMS

- Interpretation of electrical plans (Software EPLAN)

- Wiring of automated electrical installations for different applications

VERIFICATION TECHNIQUES AND MEASUREMENT OF MAGNITUDES IN ELECTRICAL/ELECTRONIC SYSTEMS

- Measuring instrumentation

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform Slides of the subject Labs Class presentations Lab practical training	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