Goi Eskola Politeknikoa | Mondragon Unibertsitatea
Course: 2023 / 2024 - Course planning

[GJK207] INSTRUMENTATION LABORATORY

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	INDUSTRIAL ELECTRONICS
Semester	1	**Course**	4	**Mention / Field of specialisation**	???
Character	OPTIONAL				
Plan	2022	**Modality**	Face-to-face	**Language**	CASTELLANO
Credits	4,5	**Hours/week**	2.81	**Total hours**	50.5 class hours + 62 non-class hours = **112.5 total hours**

PROFESSORS

ANZOLA GARCIA, JON

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GJR406 - To know and apply principles of electronic instrumentation			x	4,02
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		0,24
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:	**4,5**

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

SECONDARY LEARNING RESULTS

RGJ490 [!] *Definir y gestionar los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías específicas de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrate*

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		3 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: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

RGJ491 [!] *Coordinar el equipo de trabajo, estimulando la cohesión y buen clima para lograr la integración de todas las personas y su contribución para alcanzar un rendimiento apropiado, tanto a nivel individual como grupal, para el desarrollo del proyecto en*

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		3 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: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

RGJ493 **[!]** *Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

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		3 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: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

RGJ494 **[!]** *Realiza una presentación oral del proyecto, justificando las soluciones propuestas con argumentos elaborados y precisos, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

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		3 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: 0 h.
NCH - Non-class hours: 3 h.
TH - Total hours: 3 h.

RGJ418 **[!]** *Diseña circuitos electrónicos para realizar mediciones de corriente con diferentes sensores*

LEARNING ACTIVITIES	CH	NCH	TH
Computer simulation exercises, individually and/or in teams	8 h.	14 h.	22 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4,5 h.	4 h.	8,5 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.	8 h.	12 h.
Practical work in workshops and/or laboratories, individually and/or in teams	6 h.	2 h.	8 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	50%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	50%	

CH - Class hours: 22,5 h.

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Goi Eskola
Politeknikoa
Escuela Politécnica
Superior

NCH - Non-class hours: 28 h.
TH - Total hours: 50,5 h.

RGJ419 **[!]** *Diseña circuitos electrónicos para controlar máquinas eléctricas*

LEARNING ACTIVITIES	CH	NCH	TH
Computer simulation exercises, individually and/or in teams	5 h.	12 h.	17 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	5 h.		5 h.
Carrying out exercises and solving problems individually and/or in teams	6 h.	10 h.	16 h.
Practical work in workshops and/or laboratories, individually and/or in teams	12 h.		12 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	50%	*(No mechanisms)*
Individual written and/or oral tests or individual coding/programming tests	50%	

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

CONTENTS

The course consists of two laboratory practicals:Practical 1: Design of a temperature alarmPractical 2: Design of a speed controller for a DC motor.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Topic related web quires Moodle Platform Class presentations Lab practical training	[1] P. Arruti, J. Errasti and J. C. Lizarbe. (2001, Logika Digitala Eta Mikroprogramagarria Available: www.elhuyar.org/edizioak/produktuak/LOGIKA-DIGITALA.pdf [2] C. Cole. (2011, 2011). Real Digital - A Hands-on Approach to Digital Design Available: http://www.digilentinc.com/classroom/realdigital/. [3] B. Holdsworth and R. C. Woods, Digital Logic Design. Oxford: Newnes, 2003. http://ezproxy.mondragon.edu:81/login?url=http://www.engineeringvillage.com/controller/servlet/OpenURL?genre=book&isb n=9780750645829 [4] R. F. Tinder, R. F. Tinder and Referex, Engineering Digital Design. San Diego: Academic Press, 2000. ezproxy.mondragon.edu:81/login? url=http://www.engineeringvillage.com/controller/servlet/OpenURL?ge nre=book&isbn=9780126912951