[GAH202] INSTRUMENTATION AND CONTROL

GENERAL INFORMATION

Studies	DEGREE IN ENERGY ENGINEERING			**Subject**	INSTRUMENTATION, AUTOMATION AND CONTROL
Semester	2	**Course**	2	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2022	**Modality**	Face-to-face	**Language**	CASTELLANO/EUSKARA
Credits	4,5	**Hours/week**	2.56	**Total hours**	46 class hours + 66.5 non-class hours = **112.5 total hours**

PROFESSORS

GOIKOETXEA ARANA, ANDER

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GAR205 - Implements measurement systems and basic control strategies in applications in the energy field	x	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

RGA290 **[!]** ***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 estrategía 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		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)*

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

RGA291 **[!]** ***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		3 h.	3 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies,	100%	*(No mechanisms)*

computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

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

RGA293 **[!]** ***Redacta y estructura correctamente la memoria del proyecto, haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje. Para ello, busca y hace uso de las fuentes de información adecuadas.***

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)*

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

RGA294 **[!]** ***Realiza una presentación oral del proyecto con argumentos elaborados por sí mismos y haciendo un uso correcto, inclusivo y no discriminatorio 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		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)*

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

RGA211 **[!]** ***Diseña e implementa sistemas de medida para aplicaciones de energía***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	6 h.	6 h.	12 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	2,5 h.	4,5 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		12 h.	12 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	8 h.		8 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.	6 h.	10 h.
Practical work in workshops and/or laboratories, individually and/or in teams	8 h.	6 h.	14 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	20%	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%	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
Individual written and/or oral tests or individual coding/programming tests	60%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 28 h.
NCH - Non-class hours: 32,5 h.
TH - Total hours: 60,5 h.

RGA212 **[!]** ***Implementa sistemas básicos de control***

LEARNING ACTIVITIES	*CH*	*NCH*	*TH*
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		4 h.	4 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	4 h.	6 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.	8 h.
Computer simulation exercises, individually and/or in teams	4 h.	4 h.	8 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.		6 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.		4 h.
Practical work in workshops and/or laboratories, individually and/or in teams	2 h.	2 h.	4 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	20%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Individual written and/or oral tests or individual coding/programming tests	80%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 18 h.
NCH - Non-class hours: 22 h.
TH - Total hours: 40 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_lnk.pl?grupo=ENERGIA22&ejecuta=15
Labs	
Class presentations	
Lab practical training	
Specific Master Software	
Slides of the subject	