

Goi Eskola Politeknikoa Escuela Politécnica Superior

	GENER					
Studios DECDEE IN M			ONWATION	2		
Studies DEGREE IN MI		RING	Subject	(
Semester 2	Course 3		specialisation			
	Medality Adapte	d	Longuaga			
Plan 2020	Face-te	o o-face	Language	CASTELLANO		
Credits 3	Hours/week 2.5		Total hours	45 class hours + hours	- 30 non-class	hours = <u>75 to</u>
	Р	ROFES	SORS			
AZKARATE FERNANDEZ, ZUBIETA ANSORREGUI, J	IGOR JON					
	REQUIRED F	PREVIC		GE		
Sub	jects			Knowle	edge	
(No specific previou	us subjects required)		1)	lo previous knov	vledge require	d)
		SKIL	LS			
RIFICA SKILLS						
ECIFIC						
CE12 - Knowledge of the found	lations of automation and au	tomated	systems.			
NERAL						
CG06 - Implement and materia	lize projects of automation a	nd contro	l of equipment, proc	esses and flexib	e industrial sy	stems, through
egration of hardware and softw	are in order to optimize the	operation	of the different units	that make up th	e system to m	eet the needs
e productive sector						
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NCH - Non-class hours: 1 h. TH - Total hours: 2 h.

RCEOLA They define the problem, the development of stifying each of them, making a correct use of the lar	the solution nguage, in	on, as well as the conclu a writing.	isions in ar	effective wa	y, arguing and
LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experir individually and/or in teams	ns, audiovi mental inve	sual material, etc. on estigations carried out	2 h.	1 h.	3 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	SMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Reports on the comple exercises, simulation e projects, challenges ar Comments: Revision a semester project	ition of exercises, la problems and correction	cises, case stu boratory exerc	idies, compute ises, term in report of the
H - Class hours: 2 h. CH - Non-class hours: 1 h. H - Total hours: 3 h.					
LEARNING ACTIVITIES		guage, orany.	СН	NCH	тн
Development and writing of records, reports, presentation	ns. audiovi	sual material, etc. on	2 h.	1 h.	3 h.
projects/work experience/challenges/case studies/experir ndividually and/or in teams	mental inve	estigations carried out			
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	SMS		
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 H - Class hours: 2 h. CH - Non-class hours: 1 h.	100%	Comments: Continuo	(No mech us assessme	<i>anisms)</i> ent. Retake is	∩ot foreseen.
I - Total hours: 3 h.					
RGJ314 They program and develop advanced PLC fu	unctions (I	numerical functions, par	ameterizab	le and analog	, signals)
			CH	NCH	
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experir ndividually and/or in teams	ns, audiovis mental inve	sual material, etc. on estigations carried out	2 11.	2 11.	4 11.
Computer simulation exercises, individually and/or in tear	ms		7 h.	4 h.	11 h.
Presentation by the teacher in the classroom, in participa procedures associated with the subjects	tory classe	es, of concepts and	4 h.	1 h.	5 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	SMS		
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	25%	Individual written and/o coding/programming te Comments: In case of recovery will be made, b	or oral tests ests having a gr being the fina	or individual ade lower that al grade of this	ר 5 in the exam section 25% נ
ndividual written and/or oral tests or individual	75%	the exam grade + 75% of	of the recove	ery grade.	

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coding/programming tests **Comments:** All deliveries must be completed for carrying out the individual test. Necessary condition.

CH - Class hours: 13 h. NCH - Non-class hours: 7 h. TH - Total hours: 20 h.

RGJ3315 They develop structured programs in programmable robots					
LEARNING ACTIVITIES			СН	NCH	ТН
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	s, audiovi nental inv	isual material, etc. on estigations carried out	5 h.	3 h.	8 h.
Computer simulation exercises, individually and/or in teams				14 h.	29 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and 6 h. 2 h. 8 h. procedures associated with the subjects					8 h.
EVALUATION SYSTEM	W	MAKE-UP MECHAN	ISMS		
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	25%	Individual written and coding/programming Comments: In case of recovery will be made, the exam grade + 75%	/or oral tests tests of having a gra being the fina of the recove	or individual ade lower thar al grade of this ery grade.	n 5 in the exam, a s section 25% of
Comments: All deliveries must be completed for carrying individual test. Necessary condition.	out the				
CH - Class hours: 26 h. NCH - Non-class hours: 19 h. TH - Total hours: 45 h.					

CONTENTS

GRAFCET methodology application to PLCs:

- Contact diagram programming (review).
- Structured text programming.

Analog signals.

Data blocks and function blocks.

Indirect addressing.

PID control.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	Autómatas programables y sistemas de automatización. Barcelona.



Course: 2022 / 2023 - Course planning

Topic related web quires Moodle Platform Programmes

Marcombo.

PECIÑA, L. 2018. Programación de controladores avanzados SIMATIC S7 1500 con TIA Portal AWL y SCL. Marcombo Formación YUSTE, R. L. 2017. Autómatas programables SIEMENS Grafcet y Guía Gemma con TIA Portal. Barcelona. Marcombo http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MECATRONICA32&ejecuta=5&_ST