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Mondragon Unibertsitatea Goi Eskola Politeknikoa Escuela Politécnica

# Goi Eskola Politeknikoa | Mondragon Unibertsitatea

Course: 2023 / 2024 - Course planning

			OF COMPUT	ING SCIEI	NCE		
			FORMATION				
Studies DEGREE IN ME			Subject	2			
Semester 1	Course 1		Mention / Field of				
Character BASIC TRAININ			specialisation				
Plan 2022	Modality Face-te	o-face	Language	CASTELLANO	FUSKARA		
Credits 6	Hours/week 5	0 1000		90 class hours		ss hours	= 150 to
				hours			
	Р	ROFE	SSORS				
ARKAUZ ARABAOLAZA, JA	VIER						
CHICOTE GUTIERREZ, BE	ATRIZ						
	REQUIRED F	PREVIO	OUS KNOWLED	GE			
Subj	ects			Knowl	edge		
(No specific previou	s subjects required)		(1	Vo previous know	wledge requi	red)	
	LEA	RNING	RESULTS				
ARNING RESULTS					кс ѕк	AB	ECTS
A04 - To know the use and prog		perating s	systems, databases a	ind computer	x		5,4
grams with applications in engir TR1 - To develop interdisciplina		specialty	and of gradual com	olexity	x		0,28
oming aware of respect for hum	nan rights and fundamental	rights, a	ind analyzing and ass	sessing the			
act of the proposed solutions or							
nt-garde, demonstrating the abi	linty to work in multidiscipiin	ary team	is and/or undertake fi	urther studies			
<b>TR2</b> - To express information, ic	deas and the arguments that	at suppo	rt them in an orderly,	clear and	x		0,32
erent manner, orally and in writi		nation, se	elf-made or obtained	from different			
rces, using inclusive and non-di	iscriminatory language						
						Total:	6
: Knowledge or Content / SK: Skills / AB:		RY LEA	RNING RESULT	ſS		Total:	6
<b>(GJ121</b> [!] Desarrolla y estruc ariables y operadores lógicos	SECONDAR				ras de contr NCH		ijo,
<b>(GJ121</b> [!] Desarrolla y estruc ariables y operadores lógicos LEARNING ACTIVITIES	SECONDAR	olver pr	oblemas haciendo u	iso de estructu		ol de flu	ıjo, H
<b>(GJ121 [!]</b> <i>Desarrolla y estruc</i> <b>priables y operadores lógicos</b> <b>LEARNING ACTIVITIES</b> Development and writing of reco projects/work experience/challer	SECONDAR	olver pro	oblemas haciendo u sual material, etc. on	uso de estructur CH 3 h.	лсн	rol de flu Tł	ıjo, H
RGJ121 [!] Desarrolla y estructuriables y operadores lógicos   briables y operadores lógicos   LEARNING ACTIVITIES   Development and writing of recorrojects/work experience/challer   ndividually and/or in teams   Conducting tests, giving present   checkpoints	SECONDAR ctura programas para rese ords, reports, presentations, nges/case studies/experime ations, presenting defences	olver pro , audiovia ental inve s, taking	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or	iso de estructur <u>Сн</u> 3 h. t doing 2 h.	<b>NCH</b> 1 h.	rol de flui Tr 41	<b>ijo,</b> <b>4</b> h.
<b>Conducting tests, giving presentation by the teacher in the</b>	SECONDAR ctura programas para resu ords, reports, presentations, nges/case studies/experime rations, presenting defences ne classroom, in participato	olver pro , audiovia ental inve s, taking	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or	iso de estructul CH 3 h. t	лсн	rol de flui Tr 41	<b>ijo,</b> <u>4</u> h.
<b>Conducting tests, giving presentation by the teacher in the procedures associated with the stored ass</b>	SECONDAR ctura programas para rest ords, reports, presentations, nges/case studies/experime ations, presenting defences ne classroom, in participato subjects	olver pro , audiovia ental inve s, taking ry classe	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or es, of concepts and	iso de estructur <u>Сн</u> 3 h. t doing 2 h.	<b>NCH</b> 1 h.	rol de flui Tr 41 21 15	<b>ijo,</b> <b>4</b> h.
CGJ121 [!] Desarrolla y estructure   ariables y operadores lógicos   EARNING ACTIVITIES   Development and writing of recorrojects/work experience/challer   ndividually and/or in teams   Conducting tests, giving present   checkpoints   Presentation by the teacher in the   procedures associated with the s   Carrying out exercises and solving	SECONDAR ctura programas para rest ords, reports, presentations, nges/case studies/experime ations, presenting defences ne classroom, in participato subjects	olver pro , audiovi: ental inve s, taking ry classe nd/or in te	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or es, of concepts and eams	Iso de estructur CH 3 h. t doing 2 h. 8 h. 8 h.	<b>NCH</b> 1 h. 7 h.	rol de flui Tr 41 21 15	<b>ijo,</b> 4 h. 5 h.
RGJ121 [!] Desarrolla y estructure   ariables y operadores lógicos   LEARNING ACTIVITIES   Development and writing of recorrojects/work experience/challer   ndividually and/or in teams   Conducting tests, giving present   checkpoints   Presentation by the teacher in the   corrocedures associated with the s   Carrying out exercises and solvi   EVALUATION SYSTEM	SECONDAR ctura programas para resu ords, reports, presentations, nges/case studies/experime ations, presenting defences he classroom, in participato subjects ng problems individually an	olver pro , audiovia ental inve s, taking ry classe nd/or in te W	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or es, of concepts and eams MAKE-UP MECH	Iso de estructur CH 3 h. t doing 2 h. 8 h. 8 h. 8 h.	NCH 1 h. 7 h. 7 h.	rol de flu <u>T</u> 41 21 15	<b>ijo,</b> 4 h. 5 h.
RGJ121 [!] Desarrolla y estruct   ariables y operadores lógicos   LEARNING ACTIVITIES   Development and writing of recorrojects/work experience/challer   ndividually and/or in teams   Conducting tests, giving present   checkpoints   Presentation by the teacher in the   corrying out exercises and solvi   EVALUATION SYSTEM   Presentation and defence of exercised work, simulat   aboratory practical work, term poroject, master's thesis, challenge	SECONDAR ctura programas para resu ords, reports, presentations, nges/case studies/experime ations, presenting defences ne classroom, in participato subjects ng problems individually an ercises, case studies, tion practical work, rojects, end of degree ges and problems	olver pro , audiovia ental inve s, taking ry classe nd/or in te <u>w</u> 10%	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or es, of concepts and eams	ISO de estructur CH 3 h. t doing 2 h. 8 h. 8 h. 8 h. ANISMS and/or oral tests	NCH 1 h. 7 h. 7 h.	rol de flu <u>T</u> 41 21 15	<b>ijo,</b> <b>4</b> h. 5 h.
Knowledge or Content / SK: Skills / AB: <b>RGJ121</b> [!] Desarrolla y estruct ariables y operadores lógicos <b>LEARNING ACTIVITIES</b> Development and writing of reco projects/work experience/challer ndividually and/or in teams Conducting tests, giving present checkpoints Presentation by the teacher in the procedures associated with the se Carrying out exercises and solvi <b>EVALUATION SYSTEM</b> Presentation and defence of exercise computer practical work, simulat aboratory practical work, term p project, master's thesis, challeng Individual written and/or oral test coding/programming tests	SECONDAR ctura programas para resu ords, reports, presentations, nges/case studies/experime ations, presenting defences ne classroom, in participato subjects ng problems individually an ercises, case studies, tion practical work, rojects, end of degree ges and problems	olver pro , audiovia ental inve s, taking ry classe nd/or in te W	oblemas haciendo u sual material, etc. on estigations carried ou examinations and/or es, of concepts and eams <u>MAKE-UP MECH</u> Individual written a	ISO de estructur CH 3 h. t doing 2 h. 8 h. 8 h. 8 h. ANISMS and/or oral tests	NCH 1 h. 7 h. 7 h.	rol de flu TH 41 21 15	<b>ijo,</b> <b>4</b> h. 5 h.

**RGJ122** [!] Automatiza operaciones y organiza el código fuente en funciones para mejorar el proceso de desarrollo de programas y dar solución a problemas genéricos que se les plantea

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LEARNING ACTIVITIES		СН	NCH	ТН	
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			7 h.	4 h.	11 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or do checkpoints					2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects				7 h.	16 h.
Carrying out exercises and solving problems individually and/or in teams			9 h.	7 h.	16 h.
EVALUATION SYSTEM W MAKE-UP MECHAN					
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	coding/programming			or individual	
Individual written and/or oral tests or individual coding/programming tests	90%				
CH - Class hours: 27 h. NCH - Non-class hours: 18 h. TH - Total hours: 45 h.					

**RGJ123** [!] Diseña y hace uso de arrays y estructuras de datos de forma correcta para resolver problemas mediante programas.

LEARNING ACTIVITIES		СН	NCH	ТН	
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.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints			2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects			11 h.	8 h.	19 h.
Carrying out exercises and solving problems individually and/or in teams			12 h.	7 h.	19 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISM	IS		
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	coding/programming tes			or individual	
Individual written and/or oral tests or individual coding/programming tests	90%				
CH - Class hours: 33 h. NCH - Non-class hours: 21 h. TH - Total hours: 54 h.					

**RGJ190** [!] Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los cono

LEARNING ACTIVITIES	СН	NCH	ТН			
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in 2 h. 1 h. 3 h. interdisciplinary contexts, real and/or simulated, individually and/or in teams						
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS			

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

**RCJ191** [!] Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de plazos.

LEARNING ACTIVITIES			СН	NCH	тн
Carrying out/resolving projects/challenges/cases, etc. to pinterdisciplinary contexts, real and/or simulated, individuated individuation of the second secon			2 h.	2 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Comments: With the	(No mech project of the	,	ester
<b>:H - Class hours:</b> 2 h. ICH - Non-class hours: 2 h. 'H - Total hours: 4 h.					
RGJ193 [!] Redacta una memoria de proyecto clara y cilitadas, y haciendo un uso correcto, inclusivo y no			e informacio	ón y estructur	a de memo
			СН	NCH	тн
LEARNING ACTIVITIES Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams			3 h.	1 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	<b>Comments:</b> Revision semester project	(No mech and correcti	,	n report of t
CH - Class hours: 3 h. NCH - Non-class hours: 1 h. IH - Total hours: 4 h.					
RGJ194 [!] Realiza una presentación oral y defensa c	iel proyec	to clara y concisa, haci	endo un us	o correcto del	lenguaje
RGJ194 [!] Realiza una presentación oral y defensa c	iel proyec	to clara y concisa, haci	endo un us сн	o correcto del NCH	lenguaje TH
	ns, audiovi	sual material, etc. on			

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%	( <i>No mechanisms</i> ) <b>Comments:</b> With the oral presentation of the project of the second semester
CH - Class hours: 2 h.		

NCH - Non-class hours: 2 h.

#### TH - Total hours: 4 h.



### CONTENTS

1. Presentation of the subject2. Installation and configuration of the development environment3. Introduc tion to the subject4. Development of basic programs in the C language5. Functions and decomposition of th e algorithm and code6. Array-s (number vectors)7. Characters and strings (String)8. Data structures and a rray-s of data structures

### LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes Moodle Platform	El lenguaje de programación C, 2ª Ed. (1991) / Brian W. Kernighan, Dennis M. Ritchie, ISBN: 968-880-205-0.
Class presentations Computer practical training	Programazioaren oinarriak. (1999) / Iñaki Goirizelaia, EHUko argitalpen zerbitzua, ISBN: ISBN: 978-84-8373-139-0
	Curso de programación C/C++, 3ª Ed. (2007) / Francisco Javier Ceballos, Edit. Ra-Ma, ISBN: 84-7897-762-7
	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MECATRONICA11&ejecuta=15&_ST