

atea

Course: 2024 / 2025 - Course planning

Politeknikoa Escuela Politécnica Superior

[GIH304] SOFTWARE ENGINEERING **GENERAL INFORMATION** Studies DEGREE IN COMPUTER ENGINEERING Subject ? Mention / Field of Semester 1 Course 3 specialisation Character COMPULSORY Plan 2022 Modality Face-to-face Language EUSKARA/CASTELLANO/ENGLISH Credits 4,5 Hours/week 4.1 Total hours 73.8 class hours + 38.7 non-class hours = 112.5 total hours 2030 AGENDA GOALS PROFESSORS AYERDI CANTALEJO, JON REQUIRED PREVIOUS KNOWLEDGE Knowledge Subjects (No specific previous subjects required) (No previous knowledge required) LEARNING RESULTS LEARNING RESULTS кс sк AB ECTS GIR304 - To apply the principles, methodologies and life cycles of software engineering to analyze, 3.78 design, build and maintain applications in a robust, secure and efficient way 0.4 G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, х 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 G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and 0.32 coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language Total: 4,5 KC: Knowledge or Content / SK: Skills / AB: Abilities SECONDARY LEARNING RESULTS 1RGI391 (1 sem) СН NCH ΤН LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in 2 h. 3 h 1 h interdisciplinary contexts, real and/or simulated, individually and/or in teams **EVALUATION SYSTEM** w MAKE-UP MECHANISMS 20% Reports on the completion of exercises, case studies, (No mechanisms) computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems Presentation and defence of exercises, case studies, 50% computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems Prototype / Product 30% Comments: Continuous assessment. CH - Class hours: 2 h. NCH - Non-class hours: 1 h. TH - Total hours: 3 h.

1RGI392 (1 sem)

LEARNING ACTIVITIES		СН	NCH	ТН
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 MAK		NS		
Reports on the completion of exercises, case studies, 20% computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems		(No mechani	sms)	
Presentation and defence of exercises, case studies, 50% computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems				
Prototype / Product 30% Comments: Continuous assessment.				
CH - Class hours: 2 h. NCH - Non-class hours: 1 h. TH - Total hours: 3 h.				
RGI307 [!] Aplica técnicas y herramientas para la verificación y valida	ción del software			

LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	ns, audiov nental inv	visual material, etc. on vestigations carried out	3 h.	,6 h.	3,6 h.
Personal study and flexible development of concepts and foster more meaningful learning	subjects	using active dynamics, to	6 h.	4 h.	10 h.
Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individua	provide so Ily and/or	plutions to problems in in teams	14 h.	8,4 h.	22,4 h.
Presentation by the teacher in the classroom, in participa procedures associated with the subjects	tory class	es, of concepts and	3 h.	1 h.	4 h.
Carrying out exercises and solving problems individually	and/or in	teams	12 h.	8 h.	20 h.
EVALUATION SYSTEM	w	MAKE-UP MECHANIS	MS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	6%	Individual written and/or coding/programming tes Comments: Students w	^r oral tests sts vith less tha	or individual an 5 in the Cor	ntrol point must
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	15%	retake the exam. Control point value will be 25% and retake 7 Practices: Continuous assessment. It may be asked to redo practises, being 5 the maximum grade achievable. Project: T will not be any retake of the individual defense.			nd retake 75%. ed to redo . Project: There
Individual written and/or oral tests or individual coding/programming tests	60%				
Prototype / Product 19%					
Comments: Minimum grade: 5 Project evaluation based technical rubric	on				
CH - Class hours: 38 h. NCH - Non-class hours: 22 h. TH - Total hours: 60 h.					

1RGI390 (1 sem)						
LEARNING ACTIVITIES			СН	NCH	ТН	
Carrying out/resolving projects/challenges/cases, etc. to pinterdisciplinary contexts, real and/or simulated, individual	provide sol Illy and/or i	utions to problems in n 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	20%		(No mech	anisms)		



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	50%
Prototype / Product	30%
Comments: Continuous assessment.	
CH - Class hours: 3 h. NCH - Non-class hours: 1 h. TH - Total hours: 4 h.	

RGI808 [!] Aplica técnicas y herramientas para la ges	tión de la	configuración			
LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	ns, audiovi mental inve	sual material, etc. on estigations carried out	1,8 h.		1,8 h.
Personal study and flexible development of concepts and foster more meaningful learning	subjects (using active dynamics, to	5 h.	3 h.	8 h.
Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individua	provide so Ily and/or	lutions to problems in in teams	7 h.	4,2 h.	11,2 h.
Presentation by the teacher in the classroom, in participat procedures associated with the subjects	es, of concepts and	2 h.		2 h.	
Carrying out exercises and solving problems individually a	and/or in t	eams	7 h.	4,5 h.	11,5 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISI	ИS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	5%	Individual written and/or coding/programming tes Comments: Students w	oral tests its ith less tha	or individual an 5 in the Cont	trol point must
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	13%	retake the exam. Control Practices: Continuous ass practises, being 5 the ma will not be any retake of the	point value sessment. ximum gra ne individu	e will be 25% au It may be aske de achievable. al defense.	nd retake 75%. d to redo Project: There
Individual written and/or oral tests or individual coding/programming tests	37%				
Prototype / Product Comments: Minimum grade: 5 Project evaluation based of technical rubric	45% on				
CH - Class hours: 22,8 h. NCH - Non-class hours: 11,7 h. TH - Total hours: 34,5 h.					

1RGI393 (1 sem)

LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	ns, audiovi mental invo	sual material, etc. on estigations carried out	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	20%		(No mech	anisms)	
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, challences and problems	50%				

Mondragon Unibertsitatea
Goi Eskola Politeknikoa
Escuela Politécnica Superior

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Prototype / Product 30% Comments: Continuous assessment. It may be asked to redo the document.

CH - Class hours: 3 h. NCH - Non-class hours: 1 h. TH - Total hours: 4 h.

1RGI394 (1 sem)						
LEARNING ACTIVITIES			СН	NCH	ТН	
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	ns, audiovis mental inve	sual material, etc. on estigations carried out	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	20%		(No mech	anisms)		
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	50%					
Prototype / Product	30%					
Comments: Continuous assessment.						
CH - Class hours: 3 h. NCH - Non-class hours: 1 h. TH - Total hours: 4 h.						

CONTENTS

1. Introduction to software engineering2. Best practices2.1 Coding style2.2 Documentation3. Verification and Validation3.1 V&V Introduction3.2 Static Analysis3.2.1 Static Analysis Tools(SonarQube, SonarLint, etc.)3.3 Dynamic Analysis3.3.1 Unit Testing Tools (JUnit)3.3.2 User Testing Tools (Katalon)4. Configuration Management and Maintenance4.1 Version control tools

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	https://labur.eus/biblio-GIH304
Technical articles	

Technical articles Moodle Platform Specific Master Software