[GIC303] PROGRAMMING

GENERAL INFORMATION

Studies	DEGREE IN COMPUTER ENGINEERING			**Subject**	COMPUTING
Semester	2	**Course**	1	**Mention / Field of specialisation**	
Character	BASIC TRAINING				
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA
Credits	6	**Hours/week**	5.39	**Total hours**	97 class hours + 53 non-class hours = **150 total hours**

PROFESSORS

AGIRRE BASTEGIETA, JOSEBA ANDONI
VELEZ DE MENDIZABAL GONZALEZ, IÑAKI

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GIR103 - To know how to program computers with development environments, using the most appropriate types and data structures to solve engineering problems efficiently			*x*	5,4
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*		0,28
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*		0,32
			Total:	6

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

SECONDARY LEARNING RESULTS

RGI190 **[!]** ***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	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.	1 h.	4 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, 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	50%
Prototype / Product	30%

Comments: Continuous assessment.

MAKE-UP MECHANISMS

(No mechanisms)

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

RGI191 **[!]** ***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	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	2 h.	1 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	20%	*(No mechanisms)*
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: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RGI193 **[!]** ***Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, 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.	1 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%	*(No mechanisms)*
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. It may be asked to redo the document.

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

RGI194 **[!]** ***Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo 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.	1 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%	*(No mechanisms)*
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.

RGI128 **[!]** ***Diseña estructuras de datos y utiliza recursos de entrada/salida adecuadamente en la resolución de problemas mediante programas en el lenguaje C***

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	1 h.		1 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 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	3 h.	1 h.	4 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	8 h.	5 h.	13 h.
Carrying out exercises and solving problems individually and/or in teams	12 h.	8 h.	20 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	2%
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	6%
Individual written and/or oral tests or individual coding/programming tests	89%
Prototype / Product	3%

Comments: Minimum grade: 5 Project evaluation based on technical rubric

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: Students with less than 5 in the Control point must retake the exam. Control point value will be 25% and retake 75%. Project: There will not be any retake of the individual defense.

CH - Class hours: 26 h.
NCH - Non-class hours: 14 h.
TH - Total hours: 40 h.

RGI129 **[!]** ***Implementa algoritmos de ordenación, búsqueda, inserción y eliminación en arrays, matrices y listas dinámicas***

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	2 h.		2 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	6 h.	4 h.	10 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	3 h.	1 h.	4 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	5 h.	3 h.	8 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	12 h.	8 h.	20 h.
Carrying out exercises and solving problems individually and/or in teams	30 h.	19 h.	49 h.
Self-assessment tests in a context of autonomous and continuous learning	2 h.		2 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory	2%

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

exercises, term projects, challenges and problems		**Comments:** Students with less than 5 in the Control point must retake the exam. Control point value will be 25% and retake 75%. Project: There will not be any retake of the individual defense.
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	6%	
Individual written and/or oral tests or individual coding/programming tests	89%	
Prototype / Product	3%	

Comments: Minimum grade: 5 Project evaluation based on technical rubric

CH - Class hours: 60 h.
NCH - Non-class hours: 35 h.
TH - Total hours: 95 h.

CONTENTS

1- User-defined data structures 1.1- Data structures 1.2- Data structure vectors 1.3- Use of data structures in functions2- Using files for data persistence 2.1 Text files 2.2 Binary files3. Advanced Algorithmic Concepts 3.1 Recursion 3.2 Sorting methods4- Dynamic Memory Management 4.1- Pointers and memory addressing 4.2- Dynamic memory 4.3- Linked lists and stacks

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	https://labur.eus/biblio-GIC303
Moodle Platform	
Specific Master Software	