

[GAC201] FUNDAMENTALS OF COMPUTING SCIENCE

GENERAL INFORMATION

Studies	DEGREE IN ENERGY ENGINEERING	Subject	COMPUTER SCIENCE
Semester	1	Course	1
Character	BASIC TRAINING	Mention / Field of specialisation	
Plan	2022	Modality	Face-to-face
Credits	6	Language	EUSKARA
		Total hours	78 class hours + 72 non-class hours = 150 total hours

PROFESSORS

ALDALUR CEBERIO, IÑIGO

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
G-RA04 - To know the use and programming of computers, operating systems, databases and computer programs with applications in engineering		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

RGA107 [!] *Desarrolla y estructura programas para resolver problemas haciendo uso de estructuras de control de flujo, variables y operadores lógicos*

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		3,6 h.	3,6 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	13 h.	2,4 h.	15,4 h.
Carrying out exercises and solving problems individually and/or in teams	10 h.	5 h.	15 h.

EVALUATION SYSTEM

	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%
Individual written and/or oral tests or individual coding/programming tests	90%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 25 h.

NCH - Non-class hours: 11 h.

TH - Total hours: 36 h.

RGA108 [!] *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*

LEARNING ACTIVITIES

CH	NCH	TH
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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		4,5 h.	4,5 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	13 h.	5 h.	18 h.
Carrying out exercises and solving problems individually and/or in teams	10 h.	10,5 h.	20,5 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

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

10%

90%

(No mechanisms)

CH - Class hours: 25 h.

NCH - Non-class hours: 20 h.

TH - Total hours: 45 h.

RGA109 [!] *Diseña y hace uso de arrays de forma correcta para resolver problemas mediante programas*

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		5,4 h.	5,4 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	13 h.		13 h.
Carrying out exercises and solving problems individually and/or in teams	13 h.	20,6 h.	33,6 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

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

10%

90%

(No mechanisms)

CH - Class hours: 28 h.

NCH - Non-class hours: 26 h.

TH - Total hours: 54 h.

RGA190 [!] *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

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		4 h.	4 h.
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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: 4 h.

TH - Total hours: 4 h.

RG191 [!] *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

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.

RG193 [!] *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

4 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

100%

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 4 h.

TH - Total hours: 4 h.

RG194 [!] *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

4 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

100%

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 4 h.

TH - Total hours: 4 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Subject notes
Moodle Platform
Class presentations
Computer practical training
Specific Master Software

Bibliography

[http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in
k.pl?grupo=ENERGIA11&ejecuta=15](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in
k.pl?grupo=ENERGIA11&ejecuta=15)