

[GCZ303] ADVANCED INDUSTRIAL AUTOMATION

GENERAL INFORMATION

Studies	DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS		Subject	?
Semester	2	Course	3	Mention / Field of specialisation
Character	COMPULSORY		Language	EUSKARA
Plan	2022	Modality	Face-to-face	Total hours [!] 55 class hours + 84 non-class hours = 139 total hours
Credits	3	Hours/week	3.06	

PROFESSORS

MITXELENA MARTIARENA, EKHI

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GCR302 - Develops automation systems and control methods appropriate to the requirements and needs of users		x		2,56
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		0,2
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		0,24

Total: 3

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

SECONDARY LEARNING RESULTS

RGC390 [!] *Definir y gestionar los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías específicas de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrate*

LEARNING ACTIVITIES

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

CH

NCH

TH

2 h.

2 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

CH - Class hours: 0 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 2 h.

RGC391 [!] *Coordinar el equipo de trabajo, estimulando la cohesión y buen clima para lograr la integración de todas las personas y su contribución para alcanzar un rendimiento apropiado, tanto a nivel individual como grupal, para el desarrollo del proyecto en*

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.

EVALUATION SYSTEM

W

Self-assessment

50%

Co-assessment

50%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 2 h.

RGC392 [!] *Identificar y argumentar de forma precisa los ODS en los que incide el proyecto realizado, aportando posibles acciones para la mejora.*

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.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

100%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 1 h.

RGC393 [!] *Elabora la memoria del proyecto, aportando argumentos elaborados 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.

3 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

100%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

RGC394 [!] *Realiza una presentación oral del proyecto, justificando las soluciones propuestas con argumentos elaborados y precisos, 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.

3 h.

EVALUATION SYSTEM

W

MAKE-UP 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

100%

(No mechanisms)

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management:

definition of objectives, planning,... Written and oral communication

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

RGC305 [!] *Diseña, desarrolla y valida la programación avanzada de los PLCs y los HMI*

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.

4 h.

6 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

8 h.

8 h.

Computer simulation exercises, individually and/or in teams

17 h.

5 h.

22 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

8,5 h.

8,5 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

30%

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

70%

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

Comments: For the realization of the average, a 3.5 must be equaled or surpassed in all concepts. A lower grade will block the final qualification.

Comments: Classroom activities: the recovery will have a weight of 75%. PBL: continuous evaluation

CH - Class hours: 27,5 h.

NCH - Non-class hours: 17 h.

TH - Total hours: 44,5 h.

RGC307 [!] *Aplica la programación avanzada de los PLCs y los HMI en un entorno práctico*

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

19,5 h.

19,5 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree

100%

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

project, master's thesis, challenges and problems

and problems

Comments: PBL: continuous evaluation

CH - Class hours: 0 h.

NCH - Non-class hours: 19,5 h.

TH - Total hours: 19,5 h.

RGC305 [!] *Diseña, desarrolla y valida la programación avanzada de los PLCs y los HMI*

LEARNING ACTIVITIES

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

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

Computer simulation exercises, individually and/or in teams

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

CH

2 h.

NCH

4 h.

TH

6 h.

8 h.

8 h.

17 h.

5 h.

22 h.

8,5 h.

8,5 h.

EVALUATION SYSTEM

W

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

70%

Comments: For the realization of the average, a 3.5 must be equaled or surpassed in all concepts. A lower grade will block the final qualification.

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

Comments: Classroom activities: the recovery will have a weight of 75%. PBL: continuous evaluation

CH - Class hours: 27,5 h.

NCH - Non-class hours: 17 h.

TH - Total hours: 44,5 h.

RGC307 [!] *Aplica la programación avanzada de los PLCs y los HMI en un entorno práctico*

LEARNING ACTIVITIES

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

CH

NCH

TH

19,5 h.

19,5 h.

EVALUATION SYSTEM

W

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

100%

MAKE-UP 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

Comments: PBL: continuous evaluation

CH - Class hours: 0 h.

NCH - Non-class hours: 19,5 h.

TH - Total hours: 19,5 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Subject notes

Bibliography

https://katalogoa.mondragon.edu/janium-bin/janium_login_opac.pl?fi

Specific Master Software

nd&ficha_no=151005

Moodle Platform

Lab practical training