

[GCZ302] BASIC INDUSTRIAL AUTOMATION

GENERAL INFORMATION

Studies	DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS		Subject	?
Semester	1	Course	3	Mention / Field of specialisation
Character	COMPULSORY		Language	ENGLISH
Plan	2022	Modality	Face-to-face	Total hours 32 class hours + 43 non-class hours = 75 total hours
Credits	3	Hours/week	1.78	

2030 AGENDA GOALS



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

1RGC391 (1 sem)

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

Self-assessment

W

50%

Co-assessment

50%

MAKE-UP MECHANISMS

(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: 2 h.

TH - Total hours: 2 h.

1RGC394 (1 sem)

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

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%

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.

1RGC393 (1 sem)

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.

1RGC390 (1 sem)

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

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: 2 h.

TH - Total hours: 2 h.

1RGC392 (1 sem)

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

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)

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: 1 h.

TH - Total hours: 1 h.

RGC303 [!] *Diseña, implementa y monitoriza un sistema automatizado*

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

6,5 h.

6,5 h.

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

2 h.

6 h.

8 h.

Computer simulation exercises, individually and/or in teams

20 h.

7 h.

27 h.

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

10 h.

10 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

25%

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

75%

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

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

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

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

CH - Class hours: 32 h.

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

TH - Total hours: 51,5 h.

RGC304 [!] *Valida un sistema automatizado en base a los requerimientos necesarios.*

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

12,5 h.

12,5 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

100%

(No mechanisms)

Comments: Continuous evaluation

CH - Class hours: 0 h.
NCH - Non-class hours: 12,5 h.
TH - Total hours: 12,5 h.

CONTENTS

Control and protection devices:- Protection devices.- Control devices or drive mechanisms.- Interpretation of electrical diagrams. Programming devices (PLC):- Basic concepts.- Programming environment with TIA Portal software.- Software development and simulation.- Connection with the digital twin: virtual commissioning.- Implementation of practical sessions.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

[!] *Transparencias de la asignatura*
 [!] *Software específico de la titulación*
 [!] *Plataforma Moodle*
 [!] *Realización de prácticas en laboratorio*

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=EKOTEKNOLOGIA31&ejecuta=35