

[GCM301] LIFE CYCLE ANALYSIS

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 [!] 72 class hours + 67 non-class hours = 139 total hours
Credits	3	Hours/week	4	

PROFESSORS

GALLO FERNANDEZ, ANGEL

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GCR309 - Assesses the environmental impact of a product or industrial process throughout its life cycle		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

	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

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

W

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		2 h.	2 h.

projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

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.

RGC324 Evaluates the optimization in consumption and in the environmental impact of an industrial product throughout its entire life cycle

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 h.

8 h.

20 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

20 h.

20 h.

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

24 h.

24 h.

Comments: It is mandatory to fulfil every task and questionnaire.

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%

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

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

35%

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

35%

Comments: It is mandatory to obtain an average mark of 4 both on the tasks and on the questionnaires in order to apply the forementioned percentages. Otherwise, the lowest mark will be the final mark.

CH - Class hours: 36 h.

NCH - Non-class hours: 28 h.

TH - Total hours: 64 h.

RGC324 [!] *Valora la optimización en el consumo e impacto medioambiental de un producto industrial en todo su ciclo de vida.*

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

12 h.

8 h.

20 h.

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

20 h.

20 h.

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

24 h.

24 h.

Comments: It is mandatory to fulfil every task and questionnaire.

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%

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

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

35%

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

35%

Comments: It is mandatory to obtain an average mark of 4 both on the tasks and on the questionnaires in order to apply the forementioned percentages. Otherwise, the lowest mark will be the final mark.

CH - Class hours: 36 h.

NCH - Non-class hours: 28 h.

TH - Total hours: 64 h.

CONTENTS

1. Definition and assessment of environmental impact:

-Preliminary concepts

-ISO 14040 and 14044 standards (methodology)

-Definition of the steps of the methodology:

-objectives and boundaries

-Inventory

-evaluation

-IT tools 2. Product design and eco-design

-Market analysis and functional analysis

-Specification booklet

-Product design

-Design for X (DfX)

-Ecodesign tools

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform	https://katalogoa.mondragon.edu/janium-bin/referencista.pl?Id=20231112111600
Slides of the subject	
Programmes	