

[GCJ303] MATERIAL ENGINEERING AND SELECTION

GENERAL INFORMATION

Studies	DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS		Subject	MATERIAL ENGINEERING	
Semester	2	Course	2	Mention / Field of specialisation	
Character	COMPULSORY				
Plan	2022	Modality	Face-to-face	Language	EUSKARA
Credits	6	Hours/week	3.89	Total hours	70 class hours + 80 non-class hours = 150 total hours

PROFESSORS

ESNAOLA ARRUTI, ARITZ

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GCR207 - To select the most appropriate material considering its behavior in service, degradation phenomena and environmental impact		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		0,32
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		0,28

Total: 6

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

SECONDARY LEARNING RESULTS

RGC290 [!] *Proponer los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías propias de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategia de aprendiz*

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

4 h.

4 h.

EVALUATION SYSTEM

Self-assessment
Co-assessment

W

50%
50%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 4 h.

TH - Total hours: 4 h.

RGC291 [!] *Establecer las responsabilidades de los miembros del equipo utilizando técnicas adecuadas para fomentar la eficiencia del equipo para el desarrollo del proyecto en los plazos establecidos (compartir recursos, aportar ideas, habilidades comunicativas*

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

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.

RGC293 [!] *Redacta y estructura correctamente la memoria del proyecto, haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje. Para ello, busca y hace uso de las fuentes de información adecuadas.*

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.

RGC294 [!] *Realiza una presentación oral del proyecto con argumentos elaborados por sí mismos 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)

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

RGC222 [!] *Comprende los diferentes tipos de materiales y los fundamentos de los principales fenómenos de degradación que pueden experimentar los materiales en uso*

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.

8 h.

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

2 h.

2 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

11 h.

11 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 20 h. 12 h. 32 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%

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

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

80%

CH - Class hours: 26 h.

NCH - Non-class hours: 29 h.

TH - Total hours: 55 h.

RGC223 [!] *Conoce y aplica la metodología de selección de materiales, seleccionando los materiales teniendo en cuenta el comportamiento en servicio, procesabilidad e impacto medioambiental de los componentes*

LEARNING ACTIVITIES

CH

NCH

TH

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning

2 h.

2 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

8 h.

8 h.

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

17 h.

5 h.

22 h.

Carrying out exercises and solving problems individually and/or in teams

4 h.

2 h.

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

20%

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

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

80%

CH - Class hours: 23 h.

NCH - Non-class hours: 17 h.

TH - Total hours: 40 h.

RGC224 [!] *Analiza y selecciona métodos y sistemas de reutilización y reciclado de materiales*

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

8 h.

4 h.

12 h.

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

2 h.

2 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

8 h.

8 h.

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

11 h.

5 h.

16 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%

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

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

80%

CH - Class hours: 21 h.

NCH - Non-class hours: 19 h.

TH - Total hours: 40 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Subject notes
Technical articles
Moodle Platform
Slides of the subject
Specific Master Software
Class presentations

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=EKOTEKNOLOGIA22&ejecuta=40&_ST
http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=EKOTEKNOLOGIA41&ejecuta=20&_ST