

[GOM302] ENVIRONMENTAL ENGINEERING

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL ORGANIZATION ENGINEERING	Subject	?
Semester	2	Course	3
Character	COMPULSORY	Mention / Field of specialisation	
Plan	2022	Modality	Face-to-face
Credits	6	Hours/week	4.67
		Language	CASTELLANO/EUSKARA
		Total hours	84 class hours + 66 non-class hours = 150 total hours

PROFESSORS

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URAIN DESCARGA, IDOIA
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REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
<i>(No specific previous subjects required)</i>	<i>(No previous knowledge required)</i>

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GOR301 - To identify improvements in production processes to reduce their environmental impact by efficiently using the resources of the productive environment		x		5,08
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		0,44
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		0,48
Total:				6

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

ENAE LEARNING RESULTS

ENAE LEARNING RESULTS	ECTS
ENAE02 - Knowledge and understanding: A systematic understanding of the key aspects and concepts of their branch of engineering.	2,4
ENAE06 - Analysis in engineering: Ability to apply their knowledge and understanding in analysing product, process and method engineering.	0,6
ENAE08 - Engineering projects: Ability to apply their knowledge in the development and completion of projects which meet specific requirements.	0,36
ENAE09 - Engineering projects: Understanding of the different methods and ability to use them.	0,36
ENAE15 - Practical application of engineering: Understanding of applicable methods and techniques and their limitations.	1,2
ENAE17 - Transversal competences: To work effectively, both individually and in a team.	0,36
ENAE18 - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,36
ENAE19 - Transversal competences: Demonstrate that they are aware of the responsibility implied in the practical application of engineering, the social and environmental impact, and show commitment with professional ethics, responsibility and regulations of the practical application of engineering.	0,36
Total:	6

SECONDARY LEARNING RESULTS

RG0390 [!] *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

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.	4 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, *W*
75%

MAKE-UP MECHANISMS

(No mechanisms)

computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
 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

25%

CH - Class hours: 2 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 4 h.

RG0391 [!] *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.	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	75%	(No 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	25%	

CH - Class hours: 2 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 4 h.

RG0392 [!] *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	2 h.	1 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	75%	(No 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	25%	

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RG0393 [!] *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		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	75%	<i>(No mechanisms)</i>		
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	25%			
CH - Class hours: 4 h. NCH - Non-class hours: 2 h. TH - Total hours: 6 h.				

RG0394 [!] *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		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	75%	<i>(No mechanisms)</i>		
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	25%			
CH - Class hours: 4 h. NCH - Non-class hours: 2 h. TH - Total hours: 6 h.				

RG0301 [!] *Analiza, evalúa y propone mejoras en todo el ciclo de vida de un producto*

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		10 h.	15 h.	25 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects		10 h.	15 h.	25 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	50%	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	50%	Individual written and/or oral tests or individual coding/programming tests		
CH - Class hours: 20 h. NCH - Non-class hours: 30 h.				

TH - Total hours: 50 h.

RG0302 [!] *Identifica y describe cómo tratar los vertidos, residuos y emisiones generados por una empresa y propone buenas prácticas para reducir el impacto generado, cumpliendo la ley.*

LEARNING ACTIVITIES		CH	NCH	TH
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects		35 h.	18 h.	53 h.
Carrying out exercises and solving problems individually and/or in teams		10 h.	9 h.	19 h.
Carrying out visits and/or learning trips to other university centres, laboratories, companies and/or thermal power plants		5 h.		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 project, master's thesis, challenges and problems	50%	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	50%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 50 h.

NCH - Non-class hours: 27 h.

TH - Total hours: 77 h.

CONTENTS

1.Basic environmental concepts
2.Management and treatment of drinking water
3.Wastewater management and treatment
4.Waste management
5.Air pollution

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	OSCAR, C., ALEXANDRA, M. & IVÁN, M. Alternativas para la gestión ambiental en el siglo XXI, enfoque: iniciativa de investigación en cero emisiones. Memorias del Primer Congreso Internacional Ambiental del Caribe-Concaribe, 2002.
Moodle Platform	NIETO, J. & SANTAMARTA, J. 2007. Evolución de las emisiones de gases de efecto invernadero en España (1990-2006). CCOO, Madrid.
Slides of the subject	RODRÍGUEZ, J. J. & IRABIEN, A. 1999. Los residuos peligrosos. Caracterización, tratamiento y gestión. Editorial Síntesis SA, Madrid (Spain), 211-226.
Video projections	http://campus.usal.es/~retribucionesysalud/ssalud/calid_amb/manual.htm Manual Práctico de Tramitaciones Administrativas Ambientales para la Industria Vasca. Manual práctico de legislación industrial para la industria vasca 2007 KIELY, G. 1999. Ingeniería ambiental: fundamentos, entornos, tecnologías y sistemas de gestión, McGraw-Hill. IHOBE: SOCIEDAD PÚBLICA DE GESTIÓN AMBIENTAL: http://www.ihobe.net/ihobeline : 900.15.08.64. DEPARTAMENTO DE MEDIO AMBIENTE Y ORDENACIÓN DEL TERRITORIO; DEL GOBIERNO VASCO: http://www.ingurumena.ejv.euskadi.net/r49-387/es GOMELLA, C. & GUERRÉE, H. 1977. Tratamiento de aguas para abastecimiento público, Reverte. https://labur.eus/pZT6g