Goi Eskola Politeknikoa | Mondragon Unibertsitatea
Course: 2024 / 2025 - Course planning

Mondragon
Unibertsitatea

Goi Eskola
Politeknikoa
Escuela Politécnica
Superior

[GDL301] CHEMISTRY

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING	**Subject**	CHEMISTRY
Semester	2	**Course**	1
Character	BASIC TRAINING	**Mention / Field of specialisation**	
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA
Credits	6	**Hours/week**	4.67	**Total hours**	84 class hours + 66 non-class hours = **150 total hours**

2030 AGENDA GOALS

PROFESSORS

	SARRIONANDIA ARIZNABARRETA, MARIASUN
	OROBENGOA GURIDI, DANEL

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
G-RA08 - To understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering		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		0,36
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:	**6**

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

ENAEE LEARNING RESULTS	ECTS
ENAE01 - Knowledge and understanding: Knowledge and understanding of the underlying scientific and mathematical principles in their branch of engineering.	1,92
ENAE02 - Knowledge and understanding: A systematic understanding of the key aspects and concepts of their branch of engineering.	0,4
ENAE05 - Analysis in engineering: Ability to apply their knowledge and understanding in identifying, formulating and solving engineering problems using established methods.	1,52
ENAE06 - Analysis in engineering: Ability to apply their knowledge and understanding in analysing product, process and method engineering.	0,56
ENAE08 - Engineering projects: Ability to apply their knowledge in the development and completion of projects which meet specific requirements.	0,68
ENAE10 - Research & innovation: Ability to perform bibliographic searches, to use databases and other sources of information.	0,48
ENAE14 - Practical application of engineering: Ability to combine theory and practice in order to solve engineering problems.	0,28
ENAE18 - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,16
	Total: **6**

SECONDARY LEARNING RESULTS

RGD115 [!] *Conoce las características de los materiales que tienen una situación física diferente partiendo de las características atómicas*

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.

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	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	6 h.	10 h.	16 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.		6 h.
Carrying out exercises and solving problems individually and/or in teams	14 h.	7 h.	21 h.
Practical work in workshops and/or laboratories, individually and/or in teams	3 h.	1 h.	4 h.
Tutoring sessions and monitoring of training activities	8 h.	2 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	15%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	85%	

CH - Class hours: 41 h.
NCH - Non-class hours: 24 h.
TH - Total hours: 65 h.

2RGD191 (2 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.	2 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: 1 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 3 h.

2RGD193 (2 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	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.

2RGD190 (2 sem)

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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.

2RGD192 (2 sem)

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	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	100%	*(No mechanisms)*

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

RGD116 [!] *Identifica y desarrolla las reacciones químicas que ocurren en diferentes situaciones de servicio*

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.	9 h.	19 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	6 h.	10 h.	16 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.		10 h.
Carrying out exercises and solving problems individually and/or in teams	11 h.	10 h.	21 h.
Practical work in workshops and/or laboratories, individually and/or in teams	3 h.	1 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	15%	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	20%	
Individual written and/or oral tests or individual coding/programming tests	65%	

CH - Class hours: 40 h.
NCH - Non-class hours: 30 h.
TH - Total hours: 70 h.

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2RGD194 (2 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	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.

CONTENTS

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1. Atomic Model and Periodic Properties2. Basic concepts about chemical bonds3. States of matter: solid,
liquid and gas.4. Basic concepts about chemical reactions5. Thermochemistry6. Acid-base reactions7. Elect
rochemistry
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LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
[!] *Consultas en páginas web relacionadas con el tema*	Química la ciencia central, 11a edición. Theodore L. Brown, H. Eugene LeMay, Bruce E. Bursten, Catherine J. Murphy. Editorial Pearson (2009)
[!] *Plataforma Moodle*	
[!] *Presentaciones en clase*	Química general, 10a edición. Ralph H. Petrucci, F Geoffrey Herring, Jeffry D. Madura, Carey Bissonnette. Editorial Pearson (2011)
[!] *Realización de prácticas en laboratorio*	
[!] *Proyección de videos*	Kimikaren Oinarriak, Teresa Arbeola Lopez (2010)
[!] *Transparencias de la asignatura*	Kimika Orokorra, 2. argitalpena, UEUko Kimika Saila (1996)