

## [GDL301] CHEMISTRY

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING		<b>Subject</b>	CHEMISTRY
<b>Semester</b>	2	<b>Course</b>	1	<b>Mention / Field of specialisation</b>
<b>Character</b>	BASIC TRAINING		<b>Language</b>	EUSKARA
<b>Plan</b>	2022	<b>Modality</b>	Face-to-face	<b>Total hours</b>
<b>Credits</b>	6	<b>Hours/week</b>	4.56	82 class hours + 68 non-class hours = <b>150 total hours</b>

### 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
<b>G-RA08</b> - To understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering		x		5,4
<b>G-RTR1</b> - 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		0,28
<b>G-RTR2</b> - 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		0,32
<b>Total:</b>				<b>6</b>

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

### ENAE LEARNING RESULTS

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

### 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.
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.

**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.

**RGD190** [!] *Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los cono*

**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.
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**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:** 4 h.  
**TH - Total hours:** 4 h.

**RGD191** [!] *Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de plazos.*

**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**

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%

**MAKE-UP MECHANISMS**

(No mechanisms)

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

**RGD193** [!] *Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, 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.	4 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%

**MAKE-UP MECHANISMS**

(No mechanisms)

**CH - Class hours:** 0 h.  
**NCH - Non-class hours:** 4 h.  
**TH - Total hours:** 4 h.

**RGD194** [!] *Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo 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.	4 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%

**MAKE-UP MECHANISMS**

(No mechanisms)

**CH - Class hours:** 0 h.

**NCH - Non-class hours:** 4 h.  
**TH - Total hours:** 4 h.

## CONTENTS

### LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Topic related web quires	Química la ciencia central, 11a edición. Theodore L. Brown, H. Eugene LeMay, Bruce E. Bursten, Catherine J. Murphy. Editorial Pearson (2009)
Moodle Platform	Química general, 10a edición. Ralph H. Petrucci, F Geoffrey Herring, Jeffrey D. Madura, Carey Bissonnette. Editorial Pearson (2011)
Class presentations	Kimikaren Oinarriak, Teresa Arbeola Lopez (2010)
Lab practical training	Kimika Orokorra, 2. argitalpena, UEUko Kimika Saila (1996)
Video projections	
Slides of the subject	