

[GJZ301] CHEMISTRY

GENERAL INFORMATION

Studies DEGREE IN MECHATRONICS ENGINEERING

Semester 1

Course 4

Character OPTIONAL

Plan 2025

Modality Face-to-face

Credits 6

Hours/week 2.22

Subject ?

Mention / Field of specialisation ???

Language CASTELLANO/EUSKARA

Total hours 40 class hours + 110 non-class hours = **150 total hours**

PROFESSORS

BERNAL RODRIGUEZ, DANIEL

REQUIRED PREVIOUS KNOWLEDGE

Subjects

(No specific previous subjects required)

Knowledge

(No previous knowledge required)

LEARNING RESULTS

LEARNING RESULTS

G-RAJ8 - To understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering

G-TR1 - 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

G-TR2 - 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

KC **SK** **AB** **ECTS**

x 5,4

x 0,36

x 0,24

Total: 6

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

SECONDARY LEARNING RESULTS

RGJRJ8B Identify and develop the chemical reactions that occur in different operating situations

LEARNING ACTIVITIES

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

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

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

CH **NCH** **TH**

2 h. 11 h. 13 h.

15 h. 16 h. 31 h.

3 h. 23 h. 26 h.

EVALUATION SYSTEM

W

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

MAKE-UP MECHANISMS

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

CH - Class hours: 20 h.

NCH - Non-class hours: 50 h.

TH - Total hours: 70 h.

RGJ491 Coordinate the work team, fostering cohesion and a positive atmosphere to achieve the integration of all individuals and their contribution to achieving appropriate performance, both individually and as a group, for the development of the project.

LEARNING ACTIVITIES

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

CH **NCH** **TH**

1 h. 2 h. 3 h.

EVALUATION SYSTEM

W

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

MAKE-UP MECHANISMS

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

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

RGJ493 Prepare the project report, providing detailed arguments and using language that is correct, inclusive, and non-discriminatory.

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

2 h.

3 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

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

CH - Class hours: 1 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 3 h.

RGJ490 Define and manage the objectives and planning of a project that allows you to acquire and/or reinforce knowledge of specific technologies in your field of expertise—which are sometimes at the cutting edge of knowledge—and define a strategy.

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

2 h.

3 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

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

CH - Class hours: 1 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 3 h.

RGJ494 Give an oral presentation of the project, justifying the proposed solutions with detailed and precise arguments, and using language that is correct, inclusive, and non-discriminatory.

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

2 h.

3 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

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

CH - Class hours: 1 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 3 h.

RGJ492 Identify and accurately explain the SDGs that the project affects, suggesting possible actions for improvement.

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

2 h.

3 h.

EVALUATION SYSTEM

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

W

MAKE-UP MECHANISMS

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

CH - Class hours: 1 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 3 h.

RGJRJ8 Understand the characteristics of materials that have different physical states based on their atomic characteristics

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

11 h.

12 h.

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

12 h.

16 h.

28 h.

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

2 h.

23 h.

25 h.

EVALUATION SYSTEM

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

W

MAKE-UP MECHANISMS

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

CH - Class hours: 15 h.

NCH - Non-class hours: 50 h.

TH - Total hours: 65 h.

CONTENTS

1. Atomic model and periodic characteristics
2. Basic concepts of chemical bonds
3. States of matter: solid s, liquids, and gases
4. Basic concepts of chemical reactions
5. Thermochemistry
6. Acid-base reactions
7. Electrochemistry

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

- Subject notes
- Topic related web quires
- Moodle Platform
- Class presentations

Bibliography

- Química la ciencia central, 11a edición. Theodore L. Brown, H. Eugene LeMay, Bruce E. Bursten, Catherine J. Murphy. Editorial Pearson (2009)
- Química general, 10a edición. Ralph H. Petrucci, F Geoffrey Herring, Jeffry D. Madura, Carey Bissonnette. Editorial Pearson (2011)
- Kimikaren Oinarriak, Teresa Arbeola Lopez (2010)
- Kimika Orokorra, 2. argitalpena, UEUko Kimika Saila (1996)