

SUBJECT TEACHING GUIDE

G419 - Chemistry

Degree in Industrial Technologies Engineering

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Degree in Industrial Technologies Engineering			Type and Year	Core. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Chemistry Basic Training Module				
Course unit title and code	G419 - Chemistry				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIAS QUIMICA Y BIOMOLECULAR				
Name of lecturer	MARIA JOSE RIVERO MARTINEZ				
E-mail	mariajose.rivero@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO MARIA JOSE RIVERO MARTINEZ (S2014)				
Other lecturers	AXEL ARRUTI FERNANDEZ MARIA DE LOS ANGELES MANTECON ORIA				

3.1 LEARNING OUTCOMES

- Understanding of the relationship between Chemistry and chemical products for industrial applications.
- Application of Chemistry principles for the selection of chemical products.

4. OBJECTIVES

Understand how chemical properties determine the applications of products. Analyse the relationship between chemical structure, compounds and their potential uses in the industrial technologies.

6. COURSE ORGANIZATION

CONTENTS	
1	UNIT 1. CHEMISTRY IN THE INDUSTRIAL TECHNOLOGIES Lesson 1. Atoms and Chemical Elements Lesson 2. Chemical Compounds
2	UNIT 2. CHEMICAL TRANSFORMATIONS IN INDUSTRIAL PROCESSES Lesson 3. Chemical Reactions Lesson 4. Chemical Kinetics and Thermodynamics
3	UNIT 3. INORGANIC CHEMISTRY IN THE INDUSTRIAL TECHNOLOGIES Lesson 5. Electrochemistry Lesson 6. Inorganic Chemistry in the Industry
4	UNIT 4. ORGANIC CHEMISTRY IN THE INDUSTRIAL TECHNOLOGIES Lesson 7. Organic Chemistry Lesson 8. Petroleum Industry Lesson 9. Organic Polymers

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exam 1 corresponding to Units 1 and 2.	Written exam	No	Yes	35,00
Exam 2 corresponding to Units 3 and 4.	Written exam	No	Yes	35,00
Case studies.	Others	No	Yes	30,00
TOTAL				100,00
Observations				
Continuous assessment requires attendance to case studies (min. 70%) and delivery of the group assignment. Students can retake Exam 1 in the ordinary period and Exam 1 and 2 in the extraordinary period.				
Observations for part-time students				
In the case of part-time students there will be single exam for the whole subject and the delivery of the Case Studies will be required.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Brown, T.L. et al., "Química: la ciencia central", 12ª ed. En Español, Pearson Education, Mexico (2014).
- Chang, R., "Química", 13ª ed., McGraw-Hill. Mexico, (2020).
- Kotz, J. C., Treichel, P.M., "Química y reactividad química", 5ª ed. Thomson, Australia (2003).
- Petrucci, R.H., "Química General: Principios y aplicaciones modernas", 11ª ed. Prentice Hall, Madrid (2017).