

SUBJECT TEACHING GUIDE

G327 - Experimental Chemistry

Degree in Chemical Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Chemical Engineering			Type and Year	Compulsory. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Materials and Chemistry Module: Compulsory Training in Common with the Industrial Branch				
Course unit title and code	G327 - Experimental 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. DE QUIMICA E INGENIERIA DE PROCESOS Y RECURSOS.				
Name of lecturer	ANA CARMEN PERDIGON ALLER				
E-mail	anacarmen.perdigon@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO (S3094)				
Other lecturers	ROSA MARTIN RODRIGUEZ				

3.1 LEARNING OUTCOMES
- To know the basic issues of the chemistry related with the weight laws (mol concept, Avogadro number, atomic and molecular mass)
- To know issues related with chemical compounds reactivity and to distinguish the different types of chemical reactions.
- To know and accomplish the security and management standard rules for laboratories.
- To know and handle material and laboratory equipment with skill,
- To be able to develop a specific procedure of characterization and analysis necessary for chemical engineering practice.

4. OBJECTIVES

To acquire knowledge, abilities and skills in the chemical laboratory.

To understand and apply the Chemical knowledge to qualitative and quantitative analysis of substances in mixtures.

To understand and apply the Chemical knowledge to the separation, purification and characterization of substances.

To understand and perform an standard laboratory procedure.

6. COURSE ORGANIZATION

CONTENTS

1	Introduction to experimental Chemistry. Security Guidelines. The Chemistry Laboratory.
2	Titrations: acid-base, oxidation-reduction, complexometry.
3	General Laboratory Techniques: Absorption spectrophotometry VIS-UV, potentiometric, conductivimetry.
4	Separation, purification and characterization of the compounds in a substance.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
50% of the total punctuation.	Written exam	Yes	Yes	50,00
Over the semester. 10% of the total punctuation.	Work	No	No	10,00
Two experimental exams. 40% of the total punctuation.	Laboratory evaluation	No	Yes	40,00
TOTAL				100,00

Observations

This course requires compulsory attendance. Students who have not attended the course to three or more practical laboratory sessions cannot make the experimental tests.

-In the ordinary exam, the experimental tests will be recoverable whenever obtained a score of at least 3 out of 5 on the written test.

- The written exam in the extraordinary call will have a maximum score of 7 and the individual work a score of 1.

Observations for part-time students

Students who pass the written exam will make an experimental test.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Química General. Petrucci, R.H.; Harwood, W. S.; Herring, F.G. Ed. Prentice Hall, 8ª ed.; 2003.

Experimentación en Química General. Martínez, J.; Narros, A.; Fuente, M. de la; Pozas, F. y Diaz., V. M. Ed. Thomson, 2006.

Principios de Análisis Instrumental. Skoog, D.A.; Holler, F.J. Ed. McGraw-Hill, 5ª ed; 2000.

General Chemistry. Petrucci, R.H.; Harwood, W.S.; Herring, F.G. Ed. Prentice Hall, 8ª ed.; 2003

