UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: LABORATORY BASIC OPERATIONS
Code: 57305
Type: BASIC
ECTS credits: 6
Degree: 398 - UNDERGRADUATE DEGREE PROGRAMME IN CHEMISTRY
Academic year: 2020-21
Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY
Group(s): 20 23
Year: 1
Duration: C2
Main language: Spanish
Second language:
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **AURELIA ALAÑON MOLINA** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
San Alberto Magno/planta baja	Q. ANALÍTICA Y TGIA. ALIMENTOS	926052033	aurelia.alanon@uclm.es	Monday, Tuesday and Wednesday from 10 am to 12 pm

Lecturer: **ALFONSO ARANDA RUBIO** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Marie Curie/2ª planta	QUÍMICA FÍSICA	926051915	alfonso.aranda@uclm.es	Tuesday, Wednesday and Thursday from 12:00 to 14:00

Lecturer: **BEATRIZ CABAÑAS GALAN** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Edificio Marie Curie (primer piso)	QUÍMICA FÍSICA	926052042	beatriz.cabanas@uclm.es	Monday and Tuesday 16:30 to 18:30

Lecturer: **JUAN FERNANDEZ BAEZA** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno	QUÍMICA INORG., ORG., Y BIOQ.	3472	juan.fbaeza@uclm.es	Monday and Tuesday 16.30-18.30 h.

Lecturer: **AGUSTIN LARA SANCHEZ** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno	QUÍMICA INORG., ORG., Y BIOQ.	3499	agustin.lara@uclm.es	Monday and Thursday 17:00-20:00

Lecturer: **MARIA REYES LOPEZ ALAÑON** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Marie Curie (segunda planta))	QUÍMICA FÍSICA	926052779	reyes.lopez@uclm.es	Monday and Tuesday 16:30 to 18:30

Lecturer: **JUANA RODRIGUEZ FLORES** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
S. Alberto Magno	Q. ANALÍTICA Y TGIA. ALIMENTOS	926052428	juana.rflores@uclm.es	Martes y jueves de 16-18 h.

Lecturer: **MARIA DEL PRADO SANCHEZ VERDU** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
S. Alberto Magno, 2ª planta	QUÍMICA INORG., ORG., Y BIOQ.	926052622	mariaprado.sanchez@uclm.es	Tuesday, Thursday 11-13 h.

Lecturer: **ANA SANCHEZ-MIGALLON BERMEJO** - Group(s): **20 23**

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno	QUÍMICA INORG., ORG., Y BIOQ.	+34926051941	ana.smigallon@uclm.es	Monday and Tuesday 16.30-18.30 h.

2. Pre-Requisites

There are no prerequisites for this subject although it is recommended that the student has studied chemistry in high school. It is advisable that the student is taking the subject of Fundamentals of Chemistry

3. Justification in the curriculum, relation to other subjects and to the profession

Basic Laboratory Operations, is a fundamentally experimental subject. In this subject it is intended that the student acquires good working practices in a laboratory, manipulating with responsibility and security the chemical products; he will begin to know the material, the instrumentation and the basic operations of a laboratory through a series of practical activities. Likewise, they will acquire the necessary skills to be able to correctly develop the practical experiments that will be required in other subjects of the curriculum and in their future professional life.

4. Degree competences achieved in this course

Course competences

Code	Description
	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is

CB01	appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
E01	Understand and use chemical terminology, nomenclature, conventions and units
E02	Deduce the variation of the properties of the chemical elements according to the Periodic Table
E03	Handle chemicals safely and with respect to the environment
E07	Relate macroscopic properties with those of atoms, molecules and non-molecular chemical compounds
E15	Know how to handle the standard chemical instrumentation and be able to elaborate and manage standardized procedures of work in the laboratory and chemical industry
G01	Know the principles and theories of Chemistry, as well as the methodologies and applications characteristic of analytical chemistry, physical chemistry, inorganic chemistry and organic chemistry, understanding the physical and mathematical bases that require
G02	Be able to gather and interpret data, information and relevant results, obtain conclusions and issue reasoned reports on scientific, technological or other problems that require the use of chemical tools
T03	Proper oral and written communication
T05	Organization and planning capacity

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Learn to work autonomously in a laboratory and know how to interpret the experimental results obtained.

Know the basic concepts and principles of Chemistry, so that the essential foundations are established so that they can successfully face the study of the different branches of the discipline.

Know and correctly handle the different units.

Homogenize the knowledge of Chemistry already acquired by students in Secondary School courses and complete certain aspects that have not been previously studied with the necessary depth.

Achieve that the student acquires the basic terminology of Chemistry and knows how to use it, as well as being able to establish relationships between the different concepts.

Encourage and promote in the student all those values ¿¿and attitudes inherent to scientific activity.

Additional outcomes

Handle and treat properly chemical reagents and their residues.

Learn the handling of laboratory material as well as different basic measuring instruments in a chemical laboratory.

Learn how to write a laboratory notebook and prepare a report on the activities carried out and the results obtained.

Skillfully perform basic laboratory operations

Knowing and complying with safety regulations in a laboratory.

6. Units / Contents

Unit 1: Security and waste management

Unit 2: Experimental introduction to basic chemical laboratory techniques

Unit 3: Laboratory material handling

Unit 4: Obtaining and analyzing results

Unit 5: Management of bibliographic search databases, calculation and presentation programs

ADDITIONAL COMMENTS, REMARKS

The contents of the course will be developed through a series of practical activities in which the different aspects and basic laboratory operations will be worked on.

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	CB01 CB03 E01 E03 E15 G01 G02 T05	2.56	64	Y	Y	A series of practical activities will be carried out in which the different aspects and basic laboratory operations will be worked on.
Workshops or seminars [ON-SITE]	Workshops and Seminars	CB01 CB03 E01 G01 G02	0.8	20	Y	Y	Seminars to clarify and work on necessary theoretical concepts prior to the practical sessions
Practicum and practical activities report writing or preparation [OFF-SITE]	Guided or supervised work	CB01 CB03 E01 G01 G02 T03	1.28	32	Y	Y	Creation of the workbook and related issues
Study and Exam Preparation [OFF-SITE]	Self-study	CB01 CB03 E01 G01 G02 T05	0.44	11	N	-	Autonomous work of the student to reach the competences
Other off-site activity [OFF-SITE]	Self-study	CB01 CB03 E01 G01 G02 T05	0.8	20	N	-	Development of activities related to the concepts taught in the seminars
Final test [ON-SITE]	Assessment tests	CB01 CB03 E01 G01 G02 T03 T05	0.12	3	Y	Y	Written final evaluation test
			6	150	Y	N	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities		6	150	Y	N	
			6	150	Y	N	
	Practical or hands-on activities		6	150	Y	Y	

Total:	30	750
Total credits of in-class work: 9.48		Total class time hours: 237
Total credits of out of class work: 2.52		Total hours of out of class work: 63

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	0.00%	100.00%	
Laboratory sessions	60.00%	0.00%	Personal work in the laboratory will be evaluated: preparation of activities, order, cleanliness, compliance with safety standards, preparation of the laboratory notebook, carrying out calculations, carrying out practices, obtaining data and discussing results.
Final test	40.00%	0.00%	A theoretical and practical examination will be carried out on the activities carried out in the laboratory.
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

A score above 4.0 on the theory exam will be required.

Non-continuous evaluation:

Evaluation criteria not defined

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours **hours**

General comments about the planning: Consult the weekly timetable of the course and the internship calendar published on the Virtual Campus.

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
J. Martínez Urrega y col.	Experimentación en química general	Thomson		84-9732-425-0	2006	
M.J. Rodríguez Yunta, F. G.	Curso experimental en Química Orgánica	Síntesis			2008	
Petrucci, Ralph H.	General chemistry: principles and modern applications	Prentice Hall		0-13-014329-4	2002	
Petrucci, Ralph H.	Química general	Pearson-Prentice Hall		978-84-205-3533-3	2010	
Hill, Graham	Chemistry in context: laboratory manual	Nelson Thornes		0-17-448307-4	2001	
V. Semishi	Prácticas de Química General Inorgánica	MIR			2009	
Petrucci-Harwood-Hearing	Química General					
Szafran, Zvi	Microscale general chemistry laboratory: with selected macro	John Wiley & Sons		0-471-62114-5	1993	