



IDENTIFYING DATA

Chemistry: Chemistry Lab I

Subject	Chemistry: Chemistry Lab I			
Code	V11G201V01105			
Study programme	(*)Grao en Química			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Rodríguez Arguelles, María Carmen			
Lecturers	Alonso Gómez, José Lorenzo Besada Pereira, Pedro Domínguez Seoane, Marta Otero Calleiras, Daniel Rodríguez Arguelles, María Carmen Valencia Matarranz, Laura María			
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General description	The aim of this subject is that the student learn to work in a laboratory of chemistry. Will have to respect the norms of security and use the suitable material. Besides it will study the chemical behaviour of different composed as well as the synthesis of any of them. Finally it will learn to interpret the data obtained and to collect the experiences in the fascicle of laboratory.			

Competencies

Code	
A1	Students have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study
B2	Organization and planning capacity
C25	Safely handle chemical substances, considering their physical and chemical properties, evaluating the risks associated with their use and laboratory procedures and including their environmental repercussions
C26	Perform correctly usual procedures in the laboratory, including the use of standard chemical instrumentation for synthetic and analytical work
C27	Demonstrate the ability to observe, monitor and measure chemical processes, by systematically and reliably recording them and presenting reports of the work done
C28	Interpret data derived from laboratory observations and measurements in terms of their meaning and relate them to the appropriate theory
C29	Demonstrate ability for numerical calculations and interpretation of experimental data, with correct use of units and estimation of uncertainty
D2	Capacity for teamwork
D3	Ability to communicate in both oral and written form in Spanish and / or Galician and / or English

Learning outcomes

Expected results from this subject	Training and Learning Results
Apply the norms of safety in the laboratory.	C25 C26
Use properly the basic material of laboratory, included the one of measurement, and manipulate properly the chemical products and waste.	C25 C26

Employ basic laboratory technics and interpret the data obtained.	A1	B2	C25 C26 C27 C28 C29	D2 D3
Elaborate the laboratory notebook.			C27 C28 C29	D2 D3
Recognise the structure of the main chemical compounds and relate them with their reactivity.	A1			
Apply nomenclature norms for chemical compounds.	A1			D3
Carry out the synthesis of simple chemical compounds.	A1	B2	C25 C26 C27 C28 C29	D2 D3

Contents

Topic
P1. Safety in the laboratory and recognition of laboratory materials
P2. Preparation of solutions
P3. Liquid-liquid extraction
P4. Separation by liquid-liquid extraction
P5. Distillation of solvents
P6. Separation by crystallization
P7. Separation by thin layer chromatography
P8. Separation by flash chromatography
P9. Synthesis of simple organic compounds
P10. Organic polymers formation
P11. Determination of the content in water of a salt
P12. Identification of the components of a mix
P13. Obtaining of calcic carbonate
P14. Obtaining of a curve of solubility
P15. Obtaining copper(II) oxide
P16. Establishment of a chemical equation
P17. Types of reactions (2)

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	0	36	36
Laboratory practical	54	0	54
Problem solving	0	18	18
Laboratory practice	6	36	42

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Introductory activities	Each practice of laboratory will carry associated a theoretical explanation that facilitate to the students the understanding and realisation of the same. The students will have to make a relative initial questionnaire to this experiment previously to the realisation of the session of laboratory, which finds in FAITIC.
Laboratory practical	The experiments of laboratory will make of individual form, in sessions of 3 hours. The experimental procedure will be to disposal of the students in FAITIC. It will be necessary the preparation of a notebook of laboratory in accordance with the norms that collect in FAITIC
Problem solving	After the realisation of each session of practices, the student will have to resolve some questions that find in FAITIC.

Personalized assistance

Methodologies	Description
Laboratory practical	During the realisation of the practices the professor will resolve the relative questions to the realisation of the experiment as well as to the preparation of the notebook of the laboratory.

Introductory activities	The professor will resolve the relative questions to the introductory questions of each session of practices previously to the realisation of the same.
Problem solving	The students will be able to consult the relative doubts to the realisation of the final questionnaire of each practice.
Tests	Description
Laboratory practice	In the schedule of tutorials, students will be able to consult with the professor the relative questions to the examination

Assessment						
	Description	Qualification	Training	and Learning	Results	
Introductory activities	It will evaluate questionnaire made in FAITIC on the material facilitated for each practice before the beginning of each session.	10	A1	C29	D3	
Laboratory practical	It will evaluate the realisation of experiments in the laboratory as well as the preparation of the book of laboratory.	30	A1	B2 C25 C26 C27 C28 C29	D3	
Problem solving	They will evaluate the questions that, after the realisation of each practice, the student will have to make in FAITIC.	10	A1	C29	D3	
Laboratory practice	The student will make an examination practise in the laboratory	50		B2 C25 C26 C27 C28 C29	D3	

Other comments on the Evaluation

Be necessary a note minimum of 3.5 on 10 in each section of the evaluation. In case of not surpassing this minimum in any of the parts, the final note be the note ponderada of the examination practise in the laboratory.

Necessary the assistance to a minimum of 15 sessions to be able to surpass the subject. The lacking have to be justified.

The assistance to more of 2 sessions of laboratory involves the condition of presented.

In the second announcement it is possible recover the Laboratory practice (50%) manteniéndose the others qualifications (introductory activities, sessions of laboratory and problem solving).

Sources of information

Basic Bibliography

Brown, T.L.; Lemay, H.E.; Bursten, B.E.; Murphy, C.J.; Woodward, P.M., **Química. La ciencia central**, 12, Pearson: Naucalpan, 2014

Chang, R. and Goldsby, K. A, **Química**, 12, McGrawHill, 2017

Martínez Grau, M. A. y Csáky, A. G., **Técnicas experimentales en síntesis orgánica**, Sintesis, 2001

Petrucci, R.A., **Química general: Principios y aplicaciones modernas.**, 11, Pearson Educación, 2017

Whitten, K.W, **Química**, 10, Cengage Learning, 2015

Complementary Bibliography

Recommendations

Subjects that continue the syllabus

Chemistry: Chemistry Lab II/V11G201V01110

Subjects that are recommended to be taken simultaneously

Chemistry: Chemistry 1/V11G201V01104

Contingency plan

Description

EXCEPTIONAL MEASURES SCHEDULED ===

In front of the uncertain and unpredictable evolution of the sanitary alert caused by the *COVID-19, the University of Vigo establishes extraordinary planning that will activate at the moment in that the administrations and the own institution determine it attending to criteria of security, health and responsibility, and guaranteeing the teaching in a no face-to-face

stage or partially face-to-face. These already scheduled measures guarantee, at the moment that was prescriptive, the development of the teaching of a more agile and effective way when being known in advance (or with a wide *antelación) by the students and the teacher through the tool normalised and institutionalised of the educational guides.

=== ADAPTATION OF THE METHODOLOGIES ===

* educational Methodologies that keep : introductory Activities, Resolution of problems

* educational Methodologies that modify :

The practices of face-to-face laboratory no made will be changed by other virtual activities related to the subject.

* Mechanism no face-to-face of attention to the students.
They made of previous virtual form appointment by email.

* Modifications (if they proceed) of the contents to give.

* Additional bibliography to facilitate the car-learning

* Other modifications

=== ADAPTATION OF THE EVALUATION ===

* Test already made
keeps the qualification

* Test slopes that keep
introductory Activity: [previous Weight 10%] [Weight Proposed 20%]
Resolution of problems [previous Weight 10%] [Weight proposed 30%]

* Proofs that modify
Practical Examination [previous Weight 50%] => virtual Examination [Weight Proposed 50%]

* New test

* Additional Information
