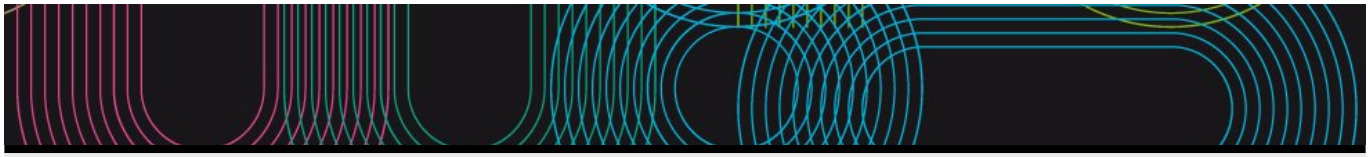

IDENTIFYING DATA				
Inorganic chemistry I				
Subject	Inorganic chemistry I			
Code	V11G201V01204			
Study programme	Grado en Química			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	2nd	1st
Teaching language	Spanish			
Department				
Coordinator	García Bugarín, Mercedes			
Lecturers	Castro Fojo, Jesús Antonio García Bugarín, Mercedes			
E-mail	mgarcia@uvigo.es			
Web				
General description	In this subject pretends give an overview of the chemical behaviour of the no metallic elements of the main groups and of his more important compounds. Machine translation into english of the original teaching guide			

Training and Learning Results	
Code	
A2	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
A3	Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues
B1	Ability for auronomous learning
B3	Ability to manage information
B4	Ability for analysis and synthesis
C8	Know the characteristic properties of the elements and their compounds, including the relations between groups and their variations in the periodic table
C9	Know the structural aspects of chemical elements and their compounds, including stereochemistry
C26	Perform correctly usual procedures in the laboratory, including the use of standard chemical instrumentation for synthetic and analytical work
D2	Capacity for teamwork

Expected results from this subject	Training and Learning Results		
Predict the properties of the elements of a group according to his position in the Periodic Table, as well as inside each group	A2 A3	B1 B3 B4	C8 C9
Deduce the physical properties of an element or compound from the type of link and/or intermolecular strengths	A2 A3	B1 B3 B4	C8 C9
Choose the general method more adapted for the obtaining of the no metallic elements and his more important compounds	A2 A3	B1 B3 B4	C8 C9
Know the structure and the most stood out reactivity of the no metallic elements and his compounds	A2 A3	B1 B3 B4	C8 C9
Relate the physical and chemical properties of some substances of interest with his applications	A2 A3	B1 B3 B4	C8 C9

Carry out in the laboratory the preparation of some elements and of his compounds, as well as the study of some of his physical and chemical properties	B1 B3 B4	C26	D2

Contents	
Topic	
1. Hydrogen	Obtaining. Physical and chemical properties. Hydrides: classification and general study of the same. The water.
2. Noble gases	General characteristics. Properties and uses. Xenon fluorides. Combinations of xenon with oxygen.
3. Halogens	General characteristics. Obtaining, properties and reactivity. Halides. Oxides, oxo acids and oxosalts. Interhalogen compounds and ions polyhalide. Fluorocarbons.
4. The Group 16 elements	General characteristics. Oxygen and ozone. Obtaining, properties and reactivity. Derived ions. Hydrogen peroxide. Sulfur. Obtaining, properties and reactivity. Hydrogenated and halogenated combinations of sulfur. Sulfur oxides, oxoacids and oxosalts.
5. The Group 15 elements	General characteristics. Nitrogen and phosphorous. Obtaining, properties and reactivity. Hydrogenated and halogenated combinations. Oxides, oxoacids and oxosalts of nitrogen and phosphorus
6. The Group 14 elements	General characteristics. Carbon. Obtaining, properties and reactivity. Oxides and carbonates. Carbides Halogenated combinations and nitrogenous. Silicon and germanium. Obtaining, properties and reactivity. Hydrides and halides. Oxides. Silicates. Silicones
7. The Group 13 elements	General characteristics. Boron. Obtaining, properties and reactivity. Hydrides and halides. Compounds with nitrogen. Oxides, oxoacids and oxosalts.
Practice 1-2	Study of the chemical properties of oxides. Obtaining the dioxide sulfur.
Practice 3-4	Obtaining and chemical behavior of halogens.
Practice 5-6	Obtaining and reactivity of group 16 compounds.
Practice 7	Obtaining and reactivity of group 15 compounds.
Practice 8	Obtaining and reactivity of group 13 compounds.

Planning			
	Class hours	Hours outside the classroom	Total hours
Lecturing	24	12	36
Seminars	12	12	24
Laboratory practical	28	0	28
Essay questions exam	1	30	31
Essay questions exam	1	30	31
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Lecturing	Presentation by the teaching staff on the subject to be developed, with special emphasis on the most important or difficult to understand aspects for students. Teachers will use the Moovi platform to provide information on the subject or its development.
Seminars	One hour per week will be dedicated to discuss and resolve issues on the subject previously the students will have to work.
Laboratory practical	The experiments will be carried out over 8 sessions of 3.5 hours each. The student body you will have the practice scripts as well as the necessary support material on the platform Moovi so that you can have prior knowledge of the experiments to be performed. The students must prepare the laboratory notebook during the practicals.

Personalized assistance	
Methodologies	**Description**
Lecturing	Personalized attention will be given to students through individual tutorials. In these, an attempt will be made to answer all the doubts that the students have about the subject taught in theory. The schedule available for these tutorials will be indicated in the presentation of the subject, and will always be as information on the Moovi platform.

Seminars	Personalized attention will be given to students through individual tutorials. In these, an attempt will be made to answer all the doubts that the students have about the subject taught in seminars. The schedule available for these tutorials will be indicated in the presentation of the subject, and will always be as information on the Moovi platform.
Laboratory practical	Personalized attention will be given to students through individual tutorials. In these, an attempt will be made to answer all the doubts that the students have about the subject taught in practices. The schedule available for these tutorials will be indicated in the presentation of the subject, and will always be as information on the Moovi platform.

Assessment

	Description	Qualification	Training and Learning Results
Lecturing	The resolution by the students of issues dealt with will be valued throughout the masterclasses at the established time / conditions by the teacher.	15	B1 B3 B4
Seminars	The resolution by the students of issues dealt with will be valued throughout the seminars at the time/conditions established by the professor	15	A2 A3 B1 B3 B4 C8 C9 C26
Laboratory practical	Attendance at laboratory sessions is compulsory. The teaching staff will follow up on the experimental work carried out by the students in the laboratory sessions, as well as the notebook elaborated. A series of questions will be asked during the sessions that will allow evaluate the competences and skills acquired by the students.	20	B1 B3 B4 C26 D2
Essay questions exam	1st Test on specific aspects of the contents explained in class, seminars and practices. This test may be eliminatory when students achieve a minimum grade of 5 points out of 10. This Test will be done on the date listed in the course schedule.	25	A2 A3 B1 B3 B4 C8 C9 C26
Essay questions exam	2nd Test on specific aspects of the contents explained in class, seminars and practices. This test may be eliminatory when students achieve a minimum grade of 5 points out of 10. This Test will be carried out on the date that appears in the schedule as final exam.	25	A2 A3 B1 B3 B4 C8 C9 C26

Other comments on the Evaluation

The participation of the students in any of the acts of evaluation of the matter will imply the condition of presented/to and, therefore, the assignment of a qualification. Acts of evaluation are considered to be attendance at practical laboratory classes (three or more) and taking tests.

To pass the subject, students must have completed the practices of the subject and take the 2 tests of development questions. In these, it will be essential to achieve a minimum score of 5 points out of 10, in order to count the notes acquired in the follow-up of seminars, theoretical classes and in the practices carried out. Once all the scores have been taken into account, students must achieve a global grade of at least 5 out of 10 to pass the subject.

July call. Students who do not pass the subject at the end of the semester must take an assessment test during the July session. Said test will replace the results of the qualifying tests carried out throughout the semester and will have a value of up to 50%. The follow-up qualification of seminars, master classes and laboratory practices obtained throughout the semester is maintained.

The students who renounce the continuous evaluation will opt for the global evaluation of the subject. To pass the subject through the overall assessment, students must have completed laboratory practices (20%) and take a comprehensive written test (80%) on specific aspects of the content explained in class, seminars and practices. In addition, in the written test it will be essential to achieve a minimum score of 5 points out of 10, in order to count the grade acquired in the laboratory practices. The global written test will be carried out on the official date of the exam for each evaluation opportunity within the official testing period marked in the academic calendar (1st opportunity (December-January) and 2nd opportunity (June-July).

Sources of information

Basic Bibliography

RAYNER-CANHAM, G., OVERTON, T., **Descriptive Inorganic Chemistry, 6ª Ed**, W.H. Freeman, 2014

HOUSECROFT, C.E. Y SHARPE, A. G., **Inorganic Chemistry, 3ª Ed**, Pearson, 2013

SHRIVER & ATKINS, **Química Inorgánica, 4º ed.**, McGraw-Hill, 2008

Complementary Bibliography

RAYNER-CANHAM, G, **Química Inorgánica Descriptiva, 2.ª Ed**, Pearson Education, 2000

HOUSECROFT, C.E. Y SHARPE, A. G., **Química Inorgánica, 2.ª Ed (español)**, Pearson- Prentice Hall, 2006

Recommendations

Subjects that continue the syllabus

Inorganic chemistry II/V11G201V01209

Subjects that it is recommended to have taken before

Chemistry: Chemistry Lab I/V11G201V01105
Chemistry: Chemistry Lab II/V11G201V01110
Chemistry: Chemistry 1/V11G201V01104
Chemistry: Chemistry 2/V11G201V01109