# Universida<sub>de</sub>Vigo

Subject Guide 2015 / 2016

IDENTIFYIN	<u> </u>					
Degree the						
Subject	Degree thesis					
Code	V11G200V01991					
Study	(*)Grao en					
programme	Química	,				
Descriptors	ECTS Credits	Choose	Year	Quadmester		
	18	Mandatory	4th	2nd		
Teaching						
language						
Department						
Coordinator	Pérez Juste, Ignacio					
Lecturers	Pérez Juste, Ignacio					
E-mail	uviqpipj@uvigo.es					
Web	http://quimica.uvigo.es/decanatoquimica/traballo-fin-					
General	According to the memory of the Degree in Chemistry			d of Degree project is a		
description						
	The objective of the subject is to offer the students the	ne opportunity to	apply the know	ledges, skills and		
	competences adquired during the Degree studies.					
	The TFG is an original work that each student will do					
	TFG subjects can correspond to experimental and/or					
	subjects related with the contains in the Degree in Ch	nemistry. The fina	ii stage of the T	FG WIII CONSIST IN a		
	written report and its public presentation.					

#### 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
- A2 Students can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within 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
- A4 Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences
- A5 Students have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy
- C1 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: Major aspects of chemical terminology, nomenclature, units and unit conversions.
- C2 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: types of chemical reactions and its main characteristics
- C3 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories in: principles of quantum mechanics and its application in the description of the structure and properties of atoms and molecules
- C4 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: Basics and tools for solving analytical problems and characterization of chemical substances
- C5 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: Characteristics of the different states of matter and the theories used to describe them
- C6 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories in: principles of thermodynamics and their applications in chemistry
- C7 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: kinetics of change, including catalysis and reaction mechanisms
- C8 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: main techniques for structural determination, including spectroscopy
- C9 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: characteristic properties of the elements and their compounds, including group relationships and variations in the periodic table

- C10 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: properties of aliphatic, aromatic, heterocyclic and organometallic compounds
- C11 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: nature and behavior of functional groups in organic molecules
- C12 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: structural features of chemical elements and their compounds, including stereochemistry
- C13 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: main synthetic routes in organic chemistry, including interconversions of functional groups and the formation of carbon-carbon and carbon-heteroatom bonds
- C14 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: relationship between macroscopic properties and properties of individual atoms and molecules, including macromolecules
- C15 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories in: chemistry of biological molecules and their processes
- C16 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: principles and procedures in chemical engineering
- C17 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories in: metrology of chemical processes including quality management
- C18 Demonstrate knowledge and understanding of essential facts, concepts, principles and theories: principles of electrochemistry
- C19 Apply knowledge and understanding to solve basic problems of quantitative and qualitative nature
- C20 Evaluate, interpret and synthesize data and chemical information
- C21 Recognize and implement good scientific practices for measurement and experimentation
- C22 Process and perform computational calculations with chemical information and chemical data
- C23 Present oral and written scientific material and scientific arguments to a specialized audience
- C24 Recognize and analyze new problems and plan strategies to solve them
- C25 Handle chemicals safely, considering their physical and chemical properties, including the evaluation of any specific risks associated with its use
- C26 Perform common laboratory procedures and use instrumentation in synthetic and analytical work
- C27 Monitor, by observation and measurement of physical and chemical properties, events or changes, and document and record them in a consistent and reliable way
- C28 Interpret data derived from laboratory observations and measurements in terms of their significance and relate them to the appropriate theory
- C29 Demonstrate skills for numerical calculations and interpretation of experimental data, with special emphasis on precision and accuracy
- D1 Communicate orally and in writing in at least one of the official languages of the University
- D2 Communicate at a basic level in English in the field of chemistry
- D3 Learn independently
- D4 Search and manage information from different sources
- D5 Use information and communication technologies and manage basic computer tools
- Use mathematics, including error analysis, estimates of orders of magnitude, correct use of units and data representations
- D7 Apply theoretical knowledge in practice
- D8 Teamwork
- D9 Work independently
- D10 Work at a national and international context
- D11 Adapt to new situations
- D12 Plan and manage time properly
- D13 Make decisions
- D14 Analyze and synthesize information and draw conclusions
- D15 Evaluate critically and constructively the environment and oneself
- D16 Develop an ethical commitment
- D17 Develop concern for environmental aspects and quality management
- D18 Generate new ideas and show initiative

Lea	rnina	outcomes

Expected results from this subject

Training and Learning Results

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Topic

(\*)Dado o seu carácter especial, a materia non ten contidos propios.

Planning			
	Class hours	Hours outside the classroom	Total hours
Projects	160	256	416
Jobs and projects	0.5	33.5	34

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

Methodologies	
	Description
Projects	Individual work done by the students under the supervision of one or two tutors. The assignment of the subject will be done following the TFG norms approved by the Faculty of Chemistry.

Personalized attention	
Methodologies	Description
Projects	

Assessment	
Description	Qualification Training and Learning
	Results

Projects	Evaluation by the tutor of the competences achieved during the realization of the work assigned, in accordance with the criteria established and published previously.	30	A1 A2 A3 A4 A5	C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18
Jobs and projects	Evaluation by a jury in public session, in accordance with criteria established and published previously.	70	A1 A2 A3 A4 A5	C29 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18

#### Other comments on the Evaluation

TFG is ruled by the norms approved in the Junta de Facultad and published in the web page web of the faculty. The TFG Commission will do public, with sufficient advance, the criteria of evaluation that will use the tutor and the jury. The TFG Commission will do public, with sufficient advance, the conditions for the written report and the public defences. All the information generated by the TFG Commission will be included in the platform Tem@ and/or in the web page of the faculty.

## Sources of information

### Recommendations

Subjects that are recommended to be taken simultaneously Environmental chemistry/V11G200V01902

Environmental chemistry/V11G200V01902 Pharmaceutical chemistry/V11G200V01903 Industrial chemistry/V11G200V01904