Teaching Guide				
Identifying Data				2023/24
Subject (*)	Master Thesis		Code	610509335
Study programme	Mestrado Universitario en Investigación Química e Química Industrial (Plan 2020)			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	24
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Química			
Coordinador		E-mail		
Lecturers	Blas Varela, Andrés M. de Esteban Gomez, David Fernandez Lopez, Alberto A. Fernandez Sanchez, Jesus Jose García Romero, Marcos Daniel Moreda Piñeiro, Jorge Peinador Veira, Carlos Riveiros Santiago, Ricardo Rodriguez Blas, Maria Teresa Rodríguez Rodríguez, Aurora Vazquez Garcia, Digna	E-mail	andres.blas@udc.es david.esteban@udc.es alberto.fernandez@udc.es jesus.fernandezs@udc.es marcos.garcia1@udc.es jorge.moreda@udc.es carlos.peinador@udc.es ricardo.riveiros@udc.es teresa.rodriguez.blas@udc.es aurora.rodriguez@udc.es d.vazquezg@udc.es	
Web				
General description	The Master's Thesis involves the completion by the student of a project developed in a company or in a research group in which you apply and develop the knowledge acquired within the master's degree. The work must be oriented to the application of the competences general associated with the degree. This subject, which is useful for all modules, will develop a large number of transversal competences Students have to carry out: Bibliographic documentation on the background and state of art of the subject proposed as a project. Preparation of a proposal of objectives. Carrying out the experiments. Data processing. Preparation, public presentation and defense of a report of results and conclusions. The Final Master's Project will be of a professional or research nature, depending on the itinerary you choose: 1. Professional itinerary: it will mean carrying out a professional project in a company with which they have signed an agreement. 2. Research itinerary, you will carry out a research project within a research group.			

Study programme competences	
Code	Study programme competences
A1	Define concepts, principles, theories and specialized facts of different areas of chemistry.
A2	Suggest alternatives for solving complex chemical problems related to the different areas of chemistry.
A3	Innovate in the methods of synthesis and chemical analysis related to the different areas of chemistry
A4	Apply materials and biomolecules in innovative fields of industry and chemical engineering.
A5	Properly assess risks and environmental and socioeconomic impacts associated with special chemicals
A6	Design processes involving the treatment or disposal of hazardous chemicals
A7	Operate with advanced instrumentation for chemical analysis and structural determination.
A8	Analyze and use the data obtained independently in complex laboratory experiments and relating them with the chemical, physical or biological appropriate techniques, including the use of primary literature sources
A9	Promote innovation and entrepreneurship in the chemical industry and in research.
A10	CE10 - Plan and manage the available resources of a company, laboratory, or administration taking into account the basic principles of quality, risk prevention and sustainability available

B1	Possess knowledge and understanding to provide a basis or opportunity for originality in developing and / or applying ideas, often within a research context
B2	Students should apply their knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
B3	Students should be able to integrate knowledge and handle complexity, and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
B4	Students should be able to communicate their conclusions, and the knowledge and the reasons that support them to specialists and non-specialists in a clear and unambiguous manner
B5	Students must possess learning skills to allow them to continue studying in a way that will have to be largely self-directed or autonomous.
B6	Innovate in the different areas of chemistry, demonstrating initiative and entrepreneurship
B7	Identify information from scientific literature by using appropriate channels and integrate such information to raise and contextualize a research topic
B8	Evaluate responsibility in the management of information and knowledge in the field of Industrial Chemistry and Chemical Research
B9	Demonstrate ability to analyze, describe, organize, plan and manage projects
B10	Use of scientific terminology in English to explain the experimental results in the context of the chemical profession
B11	Apply correctly the new technologies to gather and organize the information to solve problems in the professional activity.
B12	Being able to work in a team and adapt to multidisciplinary teams.
C1	CT1 - Elaborar, escribir e defender publicamente informes de carácter científico e técnico
C2	CT2 - Traballar en equipo e adaptarse a equipos multidisciplinares.
C3	CT3 - Traballar con autonomía e eficiencia na práctica diaria da investigación ou da actividade profesional.
C4	CT4 - Apreciar o valor da calidade e mellora continua, actuando con rigor, responsabilidade e ética profesional.
C5	CT5 - Demostrar unha actitude de respecto polas opinións, valores, comportamentos e prácticas doutros

Learning outcomes			
Learning outcomes	Study programme competences		
Knowing how to apply the knowledge acquired and their ability to solve problems in the different branches of Chemistry. That they know how to communicate their conclusions and the knowledge acquired.	AC1 AC2 AC3 AC4 AC5 AC6 AC7 AC8 AC9 AC10	BC3 BC4 BC5 BC12	CC1 CC2
Being able to identify information from the scientific literature, assess responsibility in the management of information and knowledge in the field of Industrial Chemistry and Chemical Research. Use scientific terminology and appreciate the value of quality and continuous improvement	AC10	BC6 BC7 BC8 BC9 BC10 BC11	CC3
Being able to understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context. Being able to apply the knowledge acquired and their ability to solve problems in new or little-known environments known within broader (or multidisciplinary) contexts related to their area of study. Being able to appreciate the value of quality and continuous improvement, acting with rigor, responsibility and professional ethics. Being able to demonstrate an attitude of respect towards the opinions, values, behaviors and practices of others.		BC1 BC2	CC4 CC5

Contents	
Topic	Sub-topic

1.- Documentación bibliográfica e estado actual como un tema do proxecto proposto. 2. Desenvolvemento dun obxectivos da proposta. 3.- Realizar experimentos. 4. Procesamento de Datos. 5. Preparación, presentación pública e defensa dun informe dos resultados e conclusións. 1. Itinerario profissionalizante: suporá a realización dun proxecto profesional nunha empresa coa que ten asinado un acordo. 2.Itinerario investigador: implicar a realización dunha investigación dentro dun grupo de investigación	
1.- Bibliographic documentation of the current state of the topic of the proposed project. 2. Development of the objectives of the proposal. 3.- Realization of the experiments. 4. Data Processing. 5. Preparation, public presentation and defense of the report of the results and conclusions. 1. Professional itinerary: it will mean carrying out a professional project in a company with which an agreement was signed. 2.Research itinerary: involves carrying out research within a research group	

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Oral presentation	A5 A4 B1 B2 B3 B4 C1 C5	1	0	1
Laboratory practice	A6 B8	4	36	40
Research (Research project)	A1 A2 A3 A7 A8 A9 B5 B7 B11 C2 C3 C4	400	159	559
Personalized attention		0	0	0
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Oral presentation	Oral presentation of papers, reports, etc., including debate with teachers and students
Laboratory practice	Stay in the laboratory or in a company to carry out advanced practices and/or the master's thesis
Research (Research project)	Individual practical work under the supervision of a personal tutor, adequate infrastructure and other means necessary to achieve the objectives

Personalized attention	
Methodologies	Description

Assessment

Methodologies	Competencies	Description	Qualification
Research (Research project)	A1 A2 A3 A7 A8 A9 B5 B7 B11 C2 C3 C4	Preparation of a memory	50
Oral presentation	A5 A4 B1 B2 B3 B4 C1 C5	Presentation and defense of the memory before a tribunal	50

Assessment comments
Final exam, 100% The evaluation will be carried out by a Tribunal appointed for this purpose by the Master's Academic Committee. The court will evaluate the oral expression, the memory and the defense of the same in a public act. If plagiarism is detected, the UDC regulations will apply

Sources of information	
Basic	Indicarase a cada alumno/a no proxecto específico que realice.
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.