



Teaching Guide

Identifying Data				
Subject (*)			Code	2019/20
Master Thesis			610509139	
Study programme				
Mestrado Universitario en Investigación Química e Química Industrial (Plan 2017)				
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	18
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Química			
Coordinator				
Lecturers			E-mail	
	Avecilla Porto, Fernando Francisco		E-mail	fernando.avecilla@udc.es
	Blas Varela, Andrés M. de			andres.blas@udc.es
	Castro Garcia, Socorro			socorro.castro.garcia@udc.es
	Esteban Gomez, David			david.esteban@udc.es
	Fernandez Lopez, Alberto A.			alberto.fernandez@udc.es
	Fernandez Sanchez, Jesus Jose			jesus.fernandezs@udc.es
	García Romero, Marcos Daniel			marcos.garcia1@udc.es
	Jimenez Gonzalez, Carlos			carlos.jimenez@udc.es
	Pazos Chantrero, Elena			elena.pazos@udc.es
	Peinador Veira, Carlos			carlos.peinador@udc.es
	Perez Sestelo, Jose			jose.perez.sestelo@udc.es
	Platas Iglesias, Carlos			carlos.platas.iglesias@udc.es
	Riveiros Santiago, Ricardo			ricardo.riveiros@udc.es
	Rodriguez Gonzalez, Jaime			jaime.rodriguez@udc.es
	Sanchez Andujar, Manuel			m.andujar@udc.es
	Valdiglesias García, Vanessa			vanessa.valdiglesias@udc.es
	Vazquez Garcia, Digna			d.vazquezg@udc.es
Web				
General description	The Master Thesis (TFM, rea"Trabajo de Fin de Máster") will involve the developement of a work plan supervised by a lecturer. The project will have the following parts: literature search and current state of the subject; objectives; experimental work; data analysis. Preparation, public presentation and defence of a memory of results and conclusions. The Master Thesis will have either a professional or an academic character, according to the itinerary chosen by the student: 1. Professional: the project will be developed at a company that has a collaboration agreement with the university. 2. Academic research: the project will be developed at an academic research laboratory of the university			

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.



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		
Saber aplicar a capacidade de coñecemento e resolución de problemas adquiridos nos distintos ramos da química. Saber comunicar as súas conclusións e os coñecementos adquiridos.	AC1 AC2 AC3 AC4 AC5 AC6 AC7 AC8 AC9	BC3 BC4 BC5 BC12	CC1 CC2
Saber identificar a información da literatura científica, valorando a responsabilidade na xestión da información e do coñecemento no campo da Química Industrial e na Investigación Química, usando a terminoloxía científica e apreciando o valor da calidade e mellora continua		BC6 BC7 BC8 BC9 BC10 BC11	CC3
Ser capaz de comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación		BC1 BC2	CC4 CC5
Poder aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo			
Poder apreciar o valor da calidade e mellora continua, actuando con rigor, responsabilidade e ética profesional			
Ser capaz de demostrar unha actitude de respecto polas opinións, valores, comportamentos e prácticas doutros			



Contents	
Topic	Sub-topic
Traballo de Fin de Master	1.- Documentación bibliográfica e estado actual como un tema do proxecto proposto. 2. Desenvolvemento dun obxectivo da proposta. 3.- Realizar experimentos. 4. Procesamento de Datos. 5. Preparación, presentación pública e defensa dun informe dos resultados e conclusións.
	1. Itinerario profesionalizante: suporá a realización dun proxecto profesional nunha empresa coa que ten asinaron un acordo. 2. Itinerario investigador: implicar a realización dunha investigación dentro dun grupo de investigación

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Laboratory practice	B8	66	9	75
Oral presentation	A4 A5 B1 B2 B3 B4 B9 B10 B11 C1 C5	1	1	2
Supervised projects	A1 A2 A3 A6	24	49	73
Research (Research project)	A7 A8 A9 B5 B6 B7 B12 C2 C3 C4	300	0	300
Personalized attention		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
Laboratory practice	Traballar nun laboratorio ou nunha empresa para realizar prácticas avanzadas e / ou traballo de fin de mestrado
Oral presentation	Presentación oral de traballos, informes, etc., incluíndo debates con profesores e alumnos
Supervised projects	Traballos en grupo individual ou pequeno.
Research (Research project)	Traballo práctico individual baixo a supervisión dun titor persoal, infraestrutura adecuada e doutros medios necesarios para alcanzar os obxectivos

Personalized attention	
Methodologies	Description
Supervised projects	

Assessment			
Methodologies	Competencies	Description	Qualification
Research (Research project)	A7 A8 A9 B5 B6 B7 B12 C2 C3 C4		50
Oral presentation	A4 A5 B1 B2 B3 B4 B9 B10 B11 C1 C5		50

Assessment comments



Sources of information

Basic	Cada alumno recibirá as indicacions no proxecto concreto seleccionado
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.