



## Teaching Guide

Teaching Guide				
Identifying Data			2022/23	
Subject (*)	Final Dissertation	Code	610G01043	
Study programme	Grao en Química			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	Yearly	Fourth	Obligatory	15
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Química			
Coordinador		E-mail		



<b>Lecturers</b>	Alonso Rodriguez, Elia Andrade Garda, Jose Manuel Avecilla Porto, Fernando Francisco Barriada Pereira, José Luis Blas Varela, Andrés M. de Canle López, Moisés Carlosena Zubieta, Alatzne Castro Garcia, Socorro Esteban Gomez, David Fernandez Lopez, Alberto A. Fernandez Perez, Maria Isabel Fernandez Sanchez, Jesus Jose García Romero, Marcos Daniel Gonzalez Fonteboa, Belen Herrero Rodriguez, Roberto Iglesias Martinez, Emilia Jimenez Gonzalez, Carlos Kennes , Christian Ligero Martínez - Risco, Pablo Lopez Mahia, Purificacion Lopez Torres, Margarita Moreda Piñeiro, Jorge Muniategui Lorenzo, Soledad Pazos Chantretero, Elena Peinador Veira, Carlos Perez Sestelo, Jose Platas Iglesias, Carlos Prieto Blanco, Maria del Carmen Rodriguez Blas, Maria Teresa Rodriguez Gonzalez, Jaime Ruiz Bolaños, Isabel Sanchez Andujar, Manuel Sarandeses Da Costa, Luis Alberto Sastre De Vicente, Manuel Esteban Señaris Rodriguez, Maria Antonia Soto Castiñeira, Manuel Soto Ferreiro, Rosa Maria Turnes Carou, Maria Isabel Vazquez Garcia, Digna Vega Martin, Alberto de Veiga Barbazan, Maria del Carmen Vilariño Barreiro, Maria Teresa	<b>E-mail</b>	elia.alonso@udc.es jose.manuel.andrade@udc.es fernando.avecilla@udc.es jose.barriada@udc.es andres.blas@udc.es moises.canle@udc.es alatzne.carlosena@udc.es socorro.castro.garcia@udc.es david.esteban@udc.es alberto.fernandez@udc.es isabel.fernandez.perez@udc.es jesus.fernandezs@udc.es marcos.garcia1@udc.es belen.gonzalez.fonteboa@udc.es r.herrero@udc.es emilia.iglesias@udc.es carlos.jimenez@udc.es c.kennes@udc.es pablo.ligero@udc.es purificacion.lopez.mahia@udc.es margarita.lopez.torres@udc.es jorge.moreda@udc.es soledad.muniategui@udc.es elena.pazos@udc.es carlos.peinador@udc.es jose.perez.sestelo@udc.es carlos.platas.iglesias@udc.es m.c.prieto.blanco@udc.es teresa.rodriguez.blas@udc.es jaime.rodriguez@udc.es isabel.ruiz@udc.es m.andujar@udc.es luis.sarandeses@udc.es manuel.sastre@udc.es m.senaris.rodriguez@udc.es m.soto@udc.es rosa.soto.ferreiro@udc.es isabel.turnes@udc.es d.vazquezg@udc.es alberto.de.vega@udc.es m.carmen.veiga@udc.es teresa.vilarino@udc.es
<b>Web</b>	<a href="http://ciencias.udc.es/tfg-quimica">http://ciencias.udc.es/tfg-quimica</a>		
<b>General description</b>	For the Final Dissertation of the Degree in Chemistry, each student must individually carry out a project under the supervision of one or two teachers/professionals (at least one of the supervisors must belong to one Department with teaching on the Degree in Chemistry). The topic of the project should be related to the contents of the Degree. This Final Dissertation is compulsory and a fundamental part of the scientific development of the student, and she/he should be involved in all the stages of the project		



Code	Study programme competences / results
A1	Ability to use chemistry terminology, nomenclature, conventions and units
A14	Ability to demonstrate knowledge and understanding of concepts, principles and theories in chemistry
A16	Ability to source, assess and apply technical bibliographical information and data relating to chemistry
A24	Ability to explain chemical processes and phenomena clearly and simply
B1	Learning to learn
B2	Effective problem solving
B3	Application of logical, critical, creative thinking
B4	Working independently on own initiative
B5	Teamwork and collaboration
B6	Ethical, responsible, civic-minded professionalism
B7	Effective workplace communication
C1	Ability to express oneself accurately in the official languages of Galicia (oral and in written)
C2	Oral and written proficiency in a foreign language
C3	Ability to use basic information and communications technology (ICT) tools for professional purposes and learning throughout life
C4	Self-development as an open, educated, critical, engaged, democratic, socially responsible citizen, equipped to analyse reality, diagnose problems, and formulate and implement informed solutions for the common good
C5	Understanding importance of entrepreneurship, and knowledge of resources available for people with business ideas
C6	Ability to assess critically the knowledge, technology and information available for problem solving
C7	Acceptance as a professional and as a citizen of importance of lifelong learning
C8	Understanding role of research, innovation and technology in socio-economic and cultural development

Learning outcomes			
Learning outcomes	Study programme competences / results		
Mostrar de modo sintético e a través da aprendizaxe demostrada na elaboración e defensa do TFG que o estudante adquiriu, en conxunto, as competencias xerais do Grao.	A1	B1	C1
	A14	B2	C2
	A16	B3	C3
	A24	B4	C4
		B5	C5
		B6	C6
		B7	C7
			C8

Contents	
Topic	Sub-topic



Traballo de Fin de Grao	<p>Contidos propios dos módulos de:</p> <ul style="list-style-type: none"> <li>- Química Analítica</li> <li>- Química Física</li> <li>- Química Inorgánica</li> <li>- Química Orgánica</li> <li>- Outras áreas fronteirizas da Química, en asociación coas anteriores.</li> </ul> <p>Os temas dos TFG propóranse de xeito que exista correspondencia coas competencias xerais recollidas no Grao.</p> <p>Os estudantes poderán propoñer temas ou liñas para que sexan tidos en conta e, de ser o caso, incorporados na oferta pública.</p> <p>Garantírase un número de temas e direccións suficiente para cubrir a totalidade dos estudantes matriculados no TFG cada curso académico.</p> <p>Será competencia do equipo directivo do centro facer pública a oferta anual de posibles traballos a realizar.</p> <p>A asignación de traballos farase seguindo o principio de igualdade, mérito e capacidade, tentando respectar as preferencias manifestadas polo estudantado implicado.</p> <p>Se o/a estudante ten que desenvolver parte do TFG ou a súa totalidade nunha empresa ou noutro organismo distinto á UDC, no marco dun convenio de prácticas, unha das persoas que dirixa o traballo, con categoría de titulado superior, poderá pertencer a esa entidade, co fin de que colabore na definición e o desenvolvemento do TFG.</p>
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Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Introductory activities	B1 B7	1	0	1
Research (Research project)	A1 A14 A16 B1 B2 B3 B4 B5 B6 B7 C2 C4 C5 C6 C7 C8	280	28	308
Events academic / information	B1 C4 C5 C6 C8	2	0	2
Supervised projects	A1 A14 A16 A24 B2 B3 C1 C2 C3 C6 C8	1	32	33
Oral presentation	A24 B7 C1 C3	1	20	21
Personalized attention		10	0	10

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

Methodologies	
Methodologies	Description
Introductory activities	Actividade onde se lle explica ao estudante en que consistirá o seu Traballo de Fin de Grao, se lle proporciona orientación sobre as fontes bibliográficas que debe manexar, a metodoloxía máis axeitada a empregar e o modo de planificar o seu traballo.
Research (Research project)	Traballo individual e autónomo do estudante, orientado polo(s) director(es) do traballo. No desenvolvemento do traballo, o estudante deberá afrontar un problema de índole química de acordo co método científico, formulalo con precisión, desenvolver os procedementos pertinentes, interpretar os resultados e sacar as conclusións oportunas do traballo realizado.



Events academic / information	Asistencia, por recomendación do director ou interese persoal, a eventos científicos e / ou divulgativos organizados na Facultade e relacionados coa temática do Grao en Química. A asistencia a estes eventos deber servir para mellorar as competencias en materia de presentación e defensa do propio traballo.
Supervised projects	Traballo individual e autónomo do estudante, baixo a tutela do director. O alumno deberá presentar unha memoria escrita resumindo toda a labor realizada durante o TFG. Dita memoria deberá incluír, como mínimo, unha introdución, unha sección ou capítulo que recolla os obxectivos, antecedentes existentes sobre o tema que se trate, unha parte relativa aos materiais e métodos ou procedementos experimentais, os resultados obtidos, a súa discusión e análise crítico e razoado, as conclusións que se tiren do traballo, e unha bibliografía. Asemade, cando menos un resumo inicial e as conclusións do TFG deberán estar redactadas en inglés.
Oral presentation	Exposición e defensa oral do traballo ante un tribunal. A presentación e defensa do TFG farase en acto público. O estudante disporá de un tempo máximo de 15 minutos (se ben recoméndase unha duración de 10 minutos) para expoñer os obxectivos, a metodoloxía, o contido e as conclusións do seu traballo. Con posterioridade terá que atender ás preguntas, aclaracións, comentarios e suxestións que lle poidan formular os membros do tribunal de avaliación.

### Personalized attention

Methodologies	Description
Research (Research project)	O director adicará, como mínimo, o tempo previsto nas normas de PDA da UDC para o seguimento do estudante. O estudante recibirá indicacións das características do traballo e orientación na súa planificación e no seu desenvolvemento.
Oral presentation	O director realizará un seguimento continuado do traballo, incluído a supervisión dos resultados obtidos, a discusión dos mesmos e a extracción de conclusións, e velará polo cumprimento dos obxectivos fixados. Tamén se supervisará a redacción da memoria de TFG e a elaboración da presentación oral da mesma. Valoraranse os avances do estudante e realizaranse propostas de mellora.
Introductory activities	
Supervised projects	

### Assessment

Methodologies	Competencies / Results	Description	Qualification
Research (Research project)	A1 A14 A16 B1 B2 B3 B4 B5 B6 B7 C2 C4 C5 C6 C7 C8	Avaliación continua por parte do(s) director(es) de todo o proceso de realización do TFG, tendo en conta os diferentes elementos indicados na correspondente plantilla de avaliación elaborada para tal fin. O 50% da cualificación final do TFG corresponde a avaliación do(s) director(es) do traballo.	50
Oral presentation	A24 B7 C1 C3	O tribunal valorará a presentación oral e a defensa do traballo presentado, de acordo cos distintos elementos indicados na plantilla de avaliación elaborada para tal fin. O 50% da cualificación final do TFG corresponde a avaliación do tribunal, na que a avaliación da presentación oral representa o 17.5% e a defensa e discusión dos resultados representa o 15%.	32.5
Supervised projects	A1 A14 A16 A24 B2 B3 C1 C2 C3 C6 C8	O tribunal valorará a calidade final da memoria presentada, de acordo cos distintos elementos indicados na plantilla de avaliación elaborada para tal fin. O 50% da cualificación final do TFG corresponde a avaliación do tribunal, na que a avaliación da memoria escrita presentada representa o 17,5%.	17.5

### Assessment comments



GENERAL

CONSIDERATIONS

Submission of the  
report

All information

related to the submission of the Final Dissertation report is included in the Procedemento de oferta, adxudicación e defensa dos Traballos de Fin de Grao, available at the Faculty of Sciences website (Traballos de Fin de Grao section).

Formatting requirements for the final (written) report

The final report

of the Final Dissertation must be signed by the supervisor or supervisors. It is important to consider, though, that this will never be a substitute for the official authorisation of the defense signed in the "secretaría virtual" by, at least, one of the the supervisor/s.

The final report

must include, at least, a summary (250-300 words) with key words, an introduction to the topic, a section or chapter setting out the aims of the project, a section describing the materials, methods and experimental procedures (if any), a description of the obtained results, a discussion or critical analysis of the results, the conclusions of the project (if any) and the bibliographic references used. In addition to all this, at least the summary and the conclusions should be written in english (as well as in galician and spanish).

-The format of the report will also be evaluated, and it must conform to the following basic requirements:

1. Title page. A

compulsory title page model can be downloaded from the Faculty of Science website (Traballos de Fin de Grao section)

2. Length: Minimum 35 pages and maximum 50 pages or minimum 10.000 words and maximum 15.000 words (esta cifra se corresponde con unas 40-45 páginas con cierta carga gráfica), not including the cover, the supervisor signature page, the summary and the index, but annex will be included.

3. Margins not

below 2 cm (top, bottom, left and right)

4. Body text:

Arial (or equivalent), 12 points / Captions and headings in figures and tables:

not less than 10 points

5. Single to 1,5

lines spacing

-The supervisor or

supervisors will decide whether they want to use plagiarism detection software or not, although the use of turnitin is strongly recommended.

The reports not analysed using turnitin can be presented, although they will not be included in the institutional repository of the University of A Coruña (RUC)

Requirements for

the oral presentation

1. The student

will present the aims, methodology, contents and conclusions (if any) of their project in a maximum time of 15 minutes (10 minutes is strongly recommended).

The evaluation committee will inform the student of the available time at the beginning of the defence.

## 2. After the

project is presented by the student, they will discuss their results with the evaluation committee. Members of the committee will make all the comments and questions they consider relevant. A maximum time of 5 minutes per member of the committee is strongly recommended. The discussion of the Final Dissertation should not last for more than 20 minutes. Refusing to answer the committee's questions will cause the Final Dissertation to be assessed with a qualification of 4 points or less.

## 3. The oral

presentation of the work can be conducted online when circumstances make on-site presentation inadvisable. The student can also request for the presentation of their work to be carried out online when there are compelling reasons, but this will always have to be granted by the Dean.

## Assessment considerations

The assessment of

the Final Dissertation is the responsibility of the evaluation committee. After the Final Dissertation has been submitted and presented, the evaluation committee will assess the student's work. The grade of the Final Dissertation will be the arithmetic mean of the marks given by each member of the evaluation committee, always taking into account the assessment made by the supervisor/s of the student (30% of the final grade).

Students whose

grade in the Final Dissertation is 9 or above are eligible for a distinction (Matrícula de Honra), always depending on the evaluation committee's criteria.

Students who fail

their Final Dissertation will receive a document produced by the evaluation committee with its recommendations for the improvement of the report. A copy of said document will also be submitted to the supervisor/s of the work.

Students can

appeal their Final Dissertation grades following the process described in the UDC assessment regulations (article 31, Normativa de Avaliación, Revisión e Reclamación das Cualificacións dos Estudos de Grao e Mestrado Universitario).

Enrollment allows

the student to submit and present their Final Dissertation report in the two opportunities included in each term, always according to the UDC regulations.

Students who fail to pass their Final Dissertation (or absent themselves) in the two opportunities included in each term will have to re-enroll. They will not need to choose a different topic for their Final Dissertation, as long as there is agreement between the student and the supervisor/s and the student requests it.

The

supervisor or supervisors will assess the quality and contents of the written report, as well as the different competencies included in the final dissertation rubric.

In this assessment, the members of the evaluation committee will consider the quality of the written report and the oral presentation, as well as different competencies included in the final dissertation rubric.





## Sources of information

<b>Basic</b>	O director ou directores do traballo proporán a bibliografía específica e adecuada ao traballo a desenvolver polo alumno.
<b>Complementary</b>	- R. Holliman, J. Thomas, S. Smidt, E. Scanlon, E. Whitelegg (2009). Practising Science Communication in the Information Age, sections 1-3. Oxford: Oxford University Press - S. Harrad, L. Batty, M. Diamond, G. Arhonditsis (2008). Student Projects in Environmental Science. Chichester: John Wiley & Sons Ltd.

## 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

Tal e como establece a normativa da UDC: "Sen prexuízo do disposto en cada plan de estudos, o alumno que superase 180 créditos, incluídos todos os da primeira metade, poderar realizar a matrícula do traballo de fin de grao no período ordinario de matrícula, ou nos prazos outorgados para ampliación da matrícula nos estudos de grao... O alumno, que teña superados o resto dos créditos da súa titulación, poderá defender o devandito traballo na convocatoria correspondente ao período do primeiro cuadrimestre ou na convocatoria correspondente ao período do segundo cuadrimestre e, de ser o caso, na oportunidade de xullo, ou naquela oportunidade que se fixe atendendo ao réxime especial previsto nas instrucións mencionadas" Así, será preciso ter superados 225 créditos do Grao (todas as materias excepto o TFG) para que o alumno poda facer entrega da memoria e proceder á defensa do Traballo de Fin de Grao.

(\*)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.