



Teaching Guide

Teaching Guide				
Identifying Data				2023/24
Subject (*)	Final Year Dissertation		Code	610G04047
Study programme	Grao en Nanociencia e Nanotecnoloxía			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Fourth	Obligatory	6
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department				
Coordinador		E-mail		
Lecturers	,	E-mail		
Web				
General description	The Final Degree Project (TFG) involves the realization, by each student and individually, of a project, a report, a report or a specific study, under academic supervision (at least one of the persons tutoring / directing the work must belong to a department with teaching in the Degree in Nanoscience and Nanotechnology). The subject enables the student to integrate the knowledge and skills acquired during their undergraduate studies, with a critical spirit and autonomy. In addition, it allows to evaluate the maturity of the student with respect to the handling of bibliographic sources and their ability to present results, using an appropriate design and language, both orally and in writing.			

Study programme competences

Code	Study programme competences
A1	CE1 - Comprender los conceptos, principios, teorías y hechos fundamentales relacionados con la Nanociencia y Nanotecnología.
A2	CE2 - Aplicar los conceptos, principios, teorías y hechos fundamentales relacionados con la Nanociencia y Nanotecnología a la resolución de problemas de naturaleza cuantitativa o cualitativa.
A3	CE3 - Reconocer y analizar problemas físicos, químicos, matemáticos, biológicos en el ámbito de la Nanociencia y Nanotecnología, así como plantear respuestas o trabajos adecuados para su resolución, incluyendo el uso de fuentes bibliográficas.
A4	CE4 - Desarrollar trabajos de síntesis y preparación, caracterización y estudio de las propiedades de materiales en la nanoescala.
A5	CE5 - Conocer los rasgos estructurales de los nanomateriales, incluyendo las principales técnicas para su identificación y caracterización
A6	CE6 - Manipular instrumentación y material propios de laboratorios para ensayos físicos, químicos y biológicos en el estudio y análisis de fenómenos en la nanoescala.
A7	CE7 - Interpretar los datos obtenidos mediante medidas experimentales y simulaciones, incluyendo el uso de herramientas informáticas, identificar su significado y relacionarlos con las teorías químicas, físicas o biológicas apropiadas.
A8	CE8 - Aplicar las normas generales de seguridad y funcionamiento de un laboratorio y las normativas específicas para la manipulación de la instrumentación y de los productos y nanomateriales.
A9	CE9 - Evaluar correctamente los riesgos sanitarios y de impacto ambiental asociados a la Nanociencia y la Nanotecnología.
A10	CE10 - Comprender la legislación en el ámbito del conocimiento y la aplicación de la Nanociencia y Nanotecnología. Aplicar principios éticos en este marco.
B1	CB1 - Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio
B2	CB2 - Que los estudiantes sepan aplicar sus conocimientos a su trabajo o vocación de una forma profesional y posean las competencias que suelen demostrarse por medio de la elaboración y defensa de argumentos y la resolución de problemas dentro de su área de estudio
B3	CB3 - Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio) para emitir juicios que incluyan una reflexión sobre temas relevantes de índole social, científica o ética
B4	CB4 - Que los estudiantes puedan transmitir información, ideas, problemas y soluciones a un público tanto especializado como no especializado



B5	CB5 - Que los estudiantes hayan desarrollado aquellas habilidades de aprendizaje necesarias para emprender estudios posteriores con un alto grado de autonomía
B6	CG1 - Aprender a aprender
B7	CG2 - Resolver problemas de forma efectiva.
B8	CG3 - Aplicar un pensamiento crítico, lógico y creativo.
B9	CG4 - Trabajar de forma autónoma con iniciativa.
B10	CG5 - Trabajar de forma colaborativa.
B11	CG6 - Comportarse con ética y responsabilidad social como ciudadano/a y como profesional.
B12	CG7 - Comunicarse de manera efectiva en un entorno de trabajo.
C1	CT1 - Expresarse correctamente, tanto de forma oral como escrita, en las lenguas oficiales de la comunidad autónoma
C2	CT2 - Dominar la expresión y la comprensión de forma oral y escrita de un idioma extranjero
C3	CT3 - Utilizar las herramientas básicas de las tecnologías de la información y las comunicaciones (TIC) necesarias para el ejercicio de su profesión y para el aprendizaje a lo largo de su vida
C4	CT4 - Desarrollarse para el ejercicio de una ciudadanía respetuosa con la cultura democrática, los derechos humanos y la perspectiva de género
C5	CT5 - Entender la importancia de la cultura emprendedora y conocer los medios al alcance de las personas emprendedoras
C6	CT6 - Adquirir habilidades para la vida y hábitos, rutinas y estilos de vida saludables
C7	CT7 - Desarrollar la capacidad de trabajar en equipos interdisciplinarios o transdisciplinarios, para ofrecer propuestas que contribuyan a un desarrollo sostenible ambiental, económico, político y social.
C8	CT8 - Valorar la importancia que tiene la investigación, la innovación y el desarrollo tecnológico en el avance socioeconómico y cultural de la sociedad
C9	CT9 - Tener la capacidad de gestionar tiempos y recursos: desarrollar planes, priorizar actividades, identificar las críticas, establecer plazos y cumplirlos

Learning outcomes			
Learning outcomes		Study programme competences	
To show in a synthetic way and through the learning demonstrated in the elaboration and defense of the TFG that the student has acquired, as a whole, the basic competences of the Degree.		A1	B1 C1
		A2	B2 C2
		A3	B3 C3
		A4	B4 C4
		A5	B5 C5
		A6	B6 C6
		A7	B7 C7
		A8	B8 C8
		A9	B9 C9
		A10	B10
			B11
			B12

Contents	
Topic	Sub-topic



End of Degree Dissertation	The topics of the TFG will be proposed in such a way that there is a correspondence with the general competences included in the Degree. Students may propose topics or lines to be taken into account and, if necessary, incorporated into the public offer. A sufficient number of topics and directions will be guaranteed to cover the total number of students enrolled in the TFG each academic year. It will be the responsibility of the center's management team to make public the annual offer of possible works to be carried out. The assignment of work will be made following the principle of equality, merit and ability, trying to respect the preferences expressed by the students involved. If the student has to develop part or all of the TFG in a company or other organization different from the UDC, within the framework of an internship agreement, one of the persons who direct the work, with the category of senior graduate, may belong to that entity, in order to collaborate in the definition and development of the TFG.
Traballo de Fin de Grao	Os temas dos TFG propóranse de xeito que exista correspondencia coas competencias xerais recollidas no Grao. Os estudantes poderán propoñer temas ou liñas para que sexan tidos en conta e, de ser o caso, incorporados na oferta pública. Garantirase un número de temas e direccións suficiente para cubrir a totalidade dos estudantes matriculados no TFG cada curso académico. Será competencia do equipo directivo do centro facer pública a oferta anual de posibles traballos a realizar. A asignación de traballos farase seguindo o principio de igualdade, mérito e capacidade, tentando respectar as preferencias manifestadas polo estudantado implicado. 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.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student's personal work hours	Total hours
Research (Research project)	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 B1 B2 B3 B4 B5 B7 B8 B9 B10 B11 B12 C1 C2 C3 C7 C8 C9	39	0	39



Critical bibliographical	A1 A3 A7 B1 B3 B4 B5 B6 B7 B8 B9 B10 B11 C3 C7 C8 C9	1	15	16
Summary	A1 A2 A3 A7 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 C1 C2 C3 C7 C8 C9	0	40	40
Oral presentation	A7 A9 A10 B1 B2 B3 B4 B5 B8 B9 B10 B12 C1 C2 C3	1	8	9
Introductory activities	A8 A9 A10 B1 B2 C4 C5 C6 C8 C9	1	0	1
Personalized attention		6	0	6
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Research (Research project)	The student must identify the problem to be studied, formulate it precisely, develop the relevant procedures, interpret the results and draw the appropriate conclusions from the work done. The specific work to be carried out by the student will depend on the type of work to be done, within the possibilities contemplated for the Degree in Nanoscience and Nanotechnology by the regulations of the Faculty of Sciences.
Critical bibliographical	The student will have to read the most relevant specific bibliography on the subject of his/her final project (project, report or case study), analyze its content and make a critique and evaluation in relation to the existing literature and his/her own experience in the realization of the final project.
Summary	Once finished the work that is the object of the Final Project, the student will present a written report about this work following the current regulations about the Final Project of the UDC and the Faculty of Sciences. These are available at http://ciencias.udc.es/organizacion-docente
Oral presentation	For the public defense of the TFG, each student will have a maximum time of 15 minutes (although we recommend a duration of 10 minutes), of which he/she will be duly informed by the tribunal. During this time, the student should explain the objectives, methodology, content and conclusions of his/her work. Afterwards, he/she will have to answer questions, clarifications, comments and suggestions that may be made by the members of the evaluation panel.
Introductory activities	Initial activity where it will be explained to the student what will be the end-of-degree project. You will orient him/her on the methodology to be used and the bibliographic sources to be used.

Personalized attention	
Methodologies	Description
Research (Research project) Critical bibliographical Summary Oral presentation	The director or directors will be in charge of guiding and directing the student at all times during the elaboration of the final project.

Assessment			
Methodologies	Competencies	Description	Qualification
Summary	A1 A2 A3 A7 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 C1 C2 C3 C7 C8 C9	The director(s) will evaluate the quality and contents of the written report, as well as the competencies that are contemplated in the rubric elaborated especially for each type of final project.	50



Oral presentation	A7 A9 A10 B1 B2 B3 B4 B5 B8 B9 B10 B12 C1 C2 C3	The members of the examining board will take into account the quality of the presentation, both of the written and oral report, and its defense, following a competency evaluation rubric specially designed for the end-of-degree examining board.	50
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Assessment comments

GENERAL CONSIDERATIONS

Submission of the thesis

The instructions regarding the submission of the Final Degree Projects (TFG) are included in the Procedure for the offer, awarding and defense of the TFGs, published on the website of the Faculty of Sciences, in the section dedicated to Final Degree Projects.

Rules of style of the written report

The report must be submitted with the signature and agreement of at least one director, as stated in the procedure. However, this will never replace the necessary telematic authorization of the defense in the Virtual Secretariat (Annex II of the procedure), also signed by at least one of the directors.

The TFG must include, at least, an abstract, key words, an introduction, a section or chapter that includes the objectives, a review of the existing background on the subject, a part related to the materials and methods or experimental procedures (if any), the results obtained, their discussion and/or critical and reasoned analysis, the conclusions drawn from the work (if any), and a bibliography. The initial summary and the conclusions of the TFG must be written in Galician, Spanish and English. -The format of the dissertation will be evaluated, and will have to follow these basic requirements:

Cover page: the mandatory cover page model can be download from the Web Page of the Faculty of Sciences (Final Degree Projects section).

2. Length: Maximum of 25 pages. The cover page, abstract and table of contents will not be included.

3. Margins: They will never be less than 2 cm (top, bottom and sides).

4. Text (typography): Normal text: Arial font (or similar) at 12 points / Text of figure captions or table headings: no less than 10 points.

5. Line spacing: Between single and 1.5 lines.

6. Annexes: Annexes (graphs/tables/figures of grain size) may be added if required by the student.

-The use of plagiarism detection software in the report will be at the discretion of the director. Those reports in which the analysis is not performed may be submitted, although they will not be included in the institutional repository of the University of A Coruña (RUC).

Rules for oral presentation

1. For the public defense of the TFG, each student will have a maximum time of 15 minutes (although a 10-minute presentation is recommended), of which he/she will be duly informed by the examining board. During this time, the student must explain the objectives, methodology, content and conclusions of his/her work.

2. After the student's presentation, the members of the examining board, in turn, will make the observations and ask the questions they consider appropriate, although a maximum time of 5 minutes per member of the examining board is recommended. The discussion time will not exceed 20 minutes in the whole of the interventions. Anon responds to any of the questions of the members of the tribunal will be sufficient reason for not achieving the final qualification of passing.

3. The presentation of the work may be done online if required by health circumstances or for reasons duly justified and accepted by the Dean of the Faculty of Sciences.

Considerations on the evaluation

The final grade of the TFG is the responsibility of the examining board. Once the TFG has been presented and defended, the examining board will deliberate on the corresponding grade. To establish the final grade, the arithmetic mean of the grades assigned to the TFG by each of the members of the examining board will be estimated, and the weighting with the grade of the director/s will be taken into account. The student who had obtained a qualification equal to or higher than 9.0 points, according to the criteria of the examining board, will be eligible for the honorable mention. In case the student obtains a failing grade, the examining board will send him/her a report with the appropriate recommendations for the improvement of the work and its subsequent evaluation. A copy of this report will be sent to the person(s) who directed the TFG. The review and/or claim of the final qualifications of the TFG will be carried out in accordance with the regulations of the UDC (article 31 of the of the Regulations for the Evaluation, Review and Claiming of Qualifications for Undergraduate and Master's Degree Studies). The registration entitles the student to take, exclusively, the two opportunities set in each academic year, in accordance with the provisions of the academic regulations of the UDC. In the event that the student does not pass the TFG in the annual call, he/she will have to register again for the TFG, but a new award will not be necessary, provided that there is an agreement between tutor and student, and the student so requests.



Sources of information

Basic	O director ou directores proporán os recursos bibliográficos que consideren máis axustados para cada traballo de fin de grao.
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

For the defense of the TFG (6 ECTS credits) it will be necessary that the student has passed the remaining credits of the degree (234 ECTS credits). Green Campus Program Faculty of Sciences In order to help achieve a sustainable environment and comply with point 6 of the "Environmental Declaration of the Faculty of Sciences (2020)", the documentary work carried out in this area: a. Will be requested mostly in virtual format and computer support. b. To be done on paper: - Plastics will not be used. - Double-sided printing shall be used. - Recycled paper shall be used. - The use of borradores shall be avoided. Gender perspective "According to the different regulations applicable to university teaching, the gender perspective must be incorporated in this subject (non-sexist language will be used, bibliography of authors of both sexes will be used, the intervention of male and female students in class will be encouraged...). "We will work to identify and modify sexist prejudices and #sexist attitudes and will influence the environment to modify them and promote values of respect and equality". "Situations of gender discrimination must be detected and actions and measures to correct them will be proposed".

(*)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.