Teaching Guide				
Identifying Data				2019/20
Subject (*)	Master Thesis		Code	730495016
Study programme	Mestrado Universitario en Materiais Complexos: Análise Térmica e Reoloxía (plan 2012)			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	18
Language	English			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e IndustrialMatemáticasQuímica			
Coordinador	López Beceiro, Jorge José	E-mail	jorge.lopez.beceiro@udc.es	
Lecturers	Castro Garcia, Socorro Díaz Díaz, Ana María López Beceiro, Jorge José Nicolas Costa, Gines Tarrio Saavedra, Javier	E-mail	socorro.castro.garcia@udc.es ana.ddiaz@udc.es jorge.lopez.beceiro@udc.es gines.nicolas@udc.es javier.tarrio@udc.es	
Web				
General description	The students will do a research project using the knowledge acquired in the Rheology and Thermomechanical modules. The Master Thesis is conducted, under the joint guidance of a teacher of the UDC and one of the UParis7, at the UDC, at UParis7 or at any public research organization or industry. It is possible to combine the stay in various centres if the director considers it appropriate. Whenever possible, the stay of the French students in Spain and Spanish in France is recommended.			

Study programme competences	
Code	Study programme competences
A1	Set up and conduct tests using the techniques of thermal analysis and rheology most appropriate in each case, within the scope of complex materials
A2	Identify and evaluate the different types of complex materials
A3	Knowing the different types of thermal and rheological behaviors of the materials
A4	Knowing and applying statistical methods to analyze data from complex material testing
A5	Understanding the relationships between structure and properties of materials
A6	Understanding the importance of the environment and of the research focused on the elimination/minimization of final or process wastes
A7	Knowing the different types of thermal thermo-mechanical behaviors in materials subjected to fatigue
A8	Understand and quantify the damage caused by thermomechanical fatigue in materials
B1	Knowledge and understanding to provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context
B2	The students have the skill to apply their knowledge and their ability to solve problems in new or unfamiliar contexts within broader (or multidisciplinary) contexts related to their field of study
B3	That students are able to integrate knowledge and handle complexity, and formulate judgments from an information that, being limited or not complete, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
B4	That the students can communicate their conclusions and the knowledge and last reasons behind that conclusions to specialized and non specialized audience in a clear and unambiguous way
B7	Solving problems effectively
B8	Applying a critical, logical and creative way of thinking
B9	To work autonomously with initiative
B10	Working in a collaborative way
B11	Behave with ethics and social responsibility as a citizen and as a professional
B12	Communicate effectively in the work environment
B13	Analysis-oriented attitude

B14	Ability to find and manage the information
B17	Analyze and decompose processes
B18	Ability for abstraction, understanding and simplification of complex problems
B19	Will of continuous improvement
B21	To assess the importance of research, innovation and technological developments in the socio-economic and cultural progress of society
B22	Understand the importance of protecting the environment
C2	Have a good command of spoken and writing expression and understanding of a foreign language.
C4	Developing for the exercise of an open, educated, critical, committed, democratic and solidary citicenship, able to analyze reality, diagnose problems, formulate and implement solutions based on knowledge and oriented to the common good.
C6	Critically assessing the knowledge, technology and information available to solve the problems they face with.
C7	To assume as a professional and citizen the importance of learning throughout life.
C8	To assess the importance of research, innovation and technological development in the socio-economic and cultural progress of society.
C9	Appreciate the importance of research in environmental protection

Learning outcomes			
Learning outcomes	Study programme competences		
To be able to develop a research project based on the acquired knowledge in all modules of the master.	AR1 AR2 AR3 AR4 AR5 AR6 AR7 AR8	BR1 BR2 BR3 BR4 BR7 BR8 BR9 BR10 BR11 BR12 BR13 BR14 BR17 BR18 BR19 BR21 BR22	CR2 CR4 CR6 CR7 CR8 CR9

Contents	
Topic	Sub-topic
Research project applying the acquired knowledge in Rheology and thermomechanical modules.	Development and presentation of the TFM

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 B1 B2 B3 B4 B7 B8 B9 B10 B11 B12 B13 B14 B17 B18 B19 B21 B22 C2 C4 C6 C7 C8 C9	265	157	422
Oral presentation	B4 C2 C6 C8	8	0	8

Personalized attention		20	0	20
(*)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)	Students apply the skills acquired (knowledge and techniques) throughout the program to solve specific problems in the field of research. Moreover, the translation of the results into a document, allows students to structure the information obtained, and compare with bibliographic data and be able to cross check and evaluate it.
Oral presentation	The presentation of Master's Thesis before a court gives the student the ability to prepare the defense of a project, public display in a clear and concise way and defend on the basis of the expertise or the experience of others.

Personalized attention	
Methodologies	**Description**
Oral presentation Research (Research project)	Guidelines and answering questions that arise during the preparation of TFM.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Oral presentation	B4 C2 C6 C8	The student will defend his work before the court and will answer the questions that the court do. Also tutor's opinion will be taken into account for the final evaluation.	50
Research (Research project)	A1 A2 A3 A4 A5 A6 A7 A8 B1 B2 B3 B4 B7 B8 B9 B10 B11 B12 B13 B14 B17 B18 B19 B21 B22 C2 C4 C6 C7 C8 C9	The student will deliver a written report of his project.	50

Assessment comments

Sources of information	
Basic	Todas as recomendadas no resto de materias do Máster, así como artigos científicos relacionados coa temática do TFM.
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

To help achieve a sustained immediate environment and meet the objective of action number 5: "Healthy and sustainable environmental and social teaching and research" of the "Green Campus Ferrol Action Plan":   The delivery of the documentary work carried out in this subject: - They will be requested in virtual format and/or computer support   - It will be done through Moodle, in digital format without the need to print them.   - If it is necessary to make them on paper: - Plastics shall not be used   - Double-sided printing shall be carried out.   - Recycled paper will be used.   - Printing of drafts shall be avoided.A sustainable use of resources and the prevention of negative impacts on the natural environment must be made.