Teaching Guide				
Identifying Data				2021/22
Subject (*)	Physics of Soft Matter, Interfaces		Code	730495013
Study programme	Mestrado Universitario en Materiais Complexos: Análise Térmica e Reoloxía (plan 2012)			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	1st four-month period	First	Obligatory	3
Language	English			
Teaching method	Face-to-face			
Prerequisites				
Department				
Coordinador	López Beceiro, Jorge José	E-mail	jorge.lopez.beceiro@udc.es	
Lecturers	Buhler , Eric López Beceiro, Jorge José	E-mail	eric.buhler@univ-paris-diderot.fr jorge.lopez.beceiro@udc.es	
Web				
General description	This course introduces the fundamental concepts of colloids and interfaces of science by covering the central aspects of the basic concepts for the understanding of structural phenomena and adhesion in complex fluids.			
Contingency plan	1. Modifications to the contents The contents are not modified 2. Methodologies *Teaching methodologies that are maintained Guest lecture/keynote speech (via Teams) Supervised projects (tutored via Teams or email) *Teaching methodologies that are modified Laboratory practice. It is replaced by the presentation of practical cases in the Keynote sessions and the reading and discussion of scientific articles (analysis of documentary sources). 3. Mechanisms for personalized attention to students - Email: Daily. Used to make queries, request virtual meetings to resolve doubts and monitor the work being supervised. - Microsoft Teams: Personalized tutoring of students - Moodle: This will be used as a repository for documentation provided to students. 4. Modifications in the evaluation Keynote Sessions 60% Supervised projects 30% Analysis of documentary sources 10% *Evaluation observations: - 5. Modifications to the bibliography or webgraphy No change.			

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
A5	Understanding the relationships between structure and properties of 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
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
B8	Applying a critical, logical and creative way of thinking
B9	To work autonomously with initiative
B12	Communicate effectively in the work environment
B13	Analysis-oriented attitude
B21	To assess the importance of research, innovation and technological developments in the socio-economic and cultural progress of society
C2	Have a good command of spoken and writing expression and understanding of a foreign language.
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.

Learning outcomes			
Learning outcomes	Study programme competences		
To know and understand both theoretical and practical aspects related to soft matter. Acquire knowledge of fundamental concepts related to colloids and interfaces physics and physical chemistry of complex fluids. Understanding the various structural phenomena in complex fluids.	AR1 AR2 AR3 AR5	BR1 BR2 BR4 BR8 BR9 BR12 BR13 BR21	CR2 CR6 CR7 CR8

Contents	
Topic	Sub-topic
Intermolecular interactions and forces at the molecular level	
Surfactants, micelles, emulsions, membranes	
Effects resulting from interactions	

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A3 A5 B1 B2 B21 C6	9	15	24
Laboratory practice	A1 A2 B8 B9 B13 C7 C8	15	5	20
Supervised projects	B4 B9 B12 B13 B21 C2	5	25	30
Personalized attention		1	0	1
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies

Methodologies	Description
Guest lecture / keynote speech	Presentation given by the professor, on a schematic basis, focusing on the main topics, covering both theoretical and practical issues.
Laboratory practice	Performance of practical activities such as demonstrations, exercises, experiments, etc..
Supervised projects	Activities whose purpose is that the students enlarge the study of the topics pesented in the program and consolidate their acquired knowledge and capabilities. These activities should also help the students learn and improve their capabilities in literature survey.

Personalized attention	
Methodologies	**Description**
Guest lecture / keynote speech	The personalized attention to students, understood as a support in the teaching-learning process, will take place in the hours of tutoring of the professor. No academic dispensation is accepted.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Guest lecture / keynote speech	A3 A5 B1 B2 B21 C6	Examination or objective test.	50
Laboratory practice	A1 A2 B8 B9 B13 C7 C8	Continuous assessment through monitoring of student work in the classroom, laboratory and / or tutorials	20
Supervised projects	B4 B9 B12 B13 B21 C2	Presentation (oral and written) of the supervised work.	30

Assessment comments
No academic dispensation is accepted. The evaluation criteria for the second opportunity and the extraordinary opportunity are the same as for the first opportunity.

Sources of information	
Basic	Apuntes e documentación facilitada en clase ou a través do correo electrónico.
Complementary	- Jacob Israelachvili (2011). Intermolecular and Surface Forces. Academic Press - Arthur W. Adamson, Alice P. Gast (1997). Physical chemistry of surfaces. Wiley, New York - David Chandler (1987). - Introduction to Modern Statistical Mechanics . Oxford University Press, USA - D. Tabor (1991). Gases, Liquids and Solids and Other States of Matter. Cambridge University Press

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 supportIt 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 usedDouble-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.- It will work to identify and change gender biases and attitudes, and influence the environment to change them and promote values of respect and equality.- Situations of discrimination should be identified and actions and measures proposed to correct them.