Teaching Guide				
Identifying Data				2022/23
Subject (*)	Energy, Cooperation and Sustainability		Code	730547015
Study programme	Máster Universitario en Eficiencia Enerxética e Sustentabilidade			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Optional	3
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Industrial			
Coordinador	Rodríguez Gómez, Benigno Antonio	E-mail	benigno.rodriguez@udc.es	
Lecturers	Rodríguez Gómez, Benigno Antonio	E-mail	benigno.rodriguez@udc.es	
Web				
General description				

Study programme competences / results	
Code	Study programme competences / results
A13	CE13 - Analyze, apply and optimize energy use systems
B1	CB6 - Possess and understand knowledge that provides a foundation or opportunity to be original in the development and/or application of ideas, often in a research context
B2	CB7 - That students know how to apply the knowledge acquired and their ability to solve problems in new or little-known environments within broader (or multidisciplinary) contexts related to their area of study
B3	CB8 - That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
B4	CB9 - That students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way
B5	CB10 - That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous
B6	CG1 - Search and select alternatives considering the best possible solutions
B7	CG2 - Develop analysis and synthesis skills; encourage critical discussion, defending arguments, and drawing conclusions
B9	CG4 - Extract, interpret and process information, from different sources, for use in the study and analysis
B10	CG5 - Boost creativity
B16	CG11 - Evaluate the application of emerging technologies in the field of energy and the environment
B18	CG13 - Pose and solve problems, interpret a set of data and analyze the results obtained; in the field of energy efficiency and sustainability
C2	CT2 - Master the oral and written expression and comprehension of a foreign language
C4	CT4 - Develop for the exercise of a respectful citizenship with the democratic culture, human rights and the gender perspective
C5	CT5 - Understand the importance of entrepreneurial culture and know the means available to entrepreneurs

Learning outcomes	
Learning outcomes	Study programme competences / results

The student will be able to assess and manage the Energy and Sustainability Indices	AC13	BC1 BC2 BC3 BC6 BC9 BC16 BC18	CC2 CC4
The student will be able to find solutions for stable, accessible and environmentally acceptable energy systems	AC13	BC2 BC7 BC10	CC2 CC4 CC5
The student will be able to propose cooperation projects for sustainable human development with the Logical Framework approach		BC1 BC3 BC4 BC5 BC16 BC18	CC2 CC4 CC5

Contents	
Topic	**Sub-topic**
Energy Sustainability	Energy Sustainability Sustainable Development Goals Life Cycle The role of Energy in the Circular Economy
Development cooperation.	Actors in the international development cooperation system. Human development and intervention strategies
Participation in development cooperation projects.	The instruments of international development cooperation Management of the cooperation action cycle The Logical Framework Approach

Planning				
Methodologies / tests	**Competencies / Results**	**Teaching hours (in-person & virtual)**	**Student?s personal work hours**	**Total hours**
Supervised projects	A13 B4 B6 B9 B10 B16 B18 C5	6	18	24
Collaborative learning	B1 B3 B5 B7 B9 B10 B18 C5	6	6	12
Document analysis	A13 B3 B5 B9 C4 C5	0	16	16
Guest lecture / keynote speech	A13 B3 B6 C2 C4	5	10	15
Panel discussion	B1 B2 B3 B5 B7 C2 C4	2	4	6
Personalized attention		2	0	2
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	**Description**
Supervised projects	Supervised learning process aimed at helping students to work independently in a range of contexts. Focused primarily on learning ?how to do things? and on encouraging students to become responsible for their own learning.
Collaborative learning	Guided teaching-learning procedures (overseen in person and/or using ICT methods) based on organisation of class into small groups in which students work together to solve tasks assigned by teacher, with aim of optimising their learning experience and that of other members of group

Document analysis	Research skills development involving use of audiovisual and/or bibliographical documents (documentary or film extracts, news items, advertising images, photographs, articles, legal texts, etc.) relating to specific topic of study, with targeted analysis activities. Used as introduction to topic, as focus for case study, to explain abstract processes and present complex situations, or as strategy for synthesising content (theoretical and practical).
Guest lecture / keynote speech	Oral presentation (using audiovisual material and student interaction) designed to transmit knowledge and encourage learning.
Panel discussion	Group dynamic technique in which students attend chaired debate among group of experts with different or opposing views on a particular subject.

Personalized attention	
Methodologies	**Description**
Collaborative learning	The teacher guides the students in the preparation of a proposed topic so that the students can distribute the tasks necessary for the development of the topic.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Panel discussion	B1 B2 B3 B5 B7 C2 C4	The following aspects will be assessed: Presence, intervention and active participation in the debate. Preparation of subsequent documents if requested to do so.	20
Supervised projects	A13 B4 B6 B9 B10 B16 B18 C5	The elaboration process and the final result achieved will be assessed, taking into account the effort made and the final interest of the product achieved.	30
Collaborative learning	B1 B3 B5 B7 B9 B10 B18 C5	Participation in the group and the result achieved will be assessed, which must be demonstrated by means of an exhibition or presentation of a document of an individual or joint nature.	25
Document analysis	A13 B3 B5 B9 C4 C5	This activity can serve as a basis for both tutored work and collaborative learning. But it can also be independent of them. Students will be required to submit an individual work related to the sources analysed.	25

Assessment comments
If for any reason it is not possible to carry out the Panel Discussion activity, its score will be transferred to the supervised work, in which case it may reach 50 points. In addition to the above, other means of assessment may be agreed upon on an individual basis, taking into account personal circumstances, if the parties consider this to be reasonable. Consideration will also be given to the possibility of applying co-assessment and self-assessment strategies in the final grade of the course. For students with recognition of part-time dedication and academic dispensation of exemption from attendance, second establishes the "NORMA QUE REGULA El RÉGIMEN DE DEDICACIÓN Al ESTUDIO DE Los ESTUDIANTES DE GRADO Y MÁSTER UNIVERSITARIO EN LA UDC (*Arts. 2.3; 3.*b; 4.3 and 7.5) (04/05/2017): If these students can participate telematically in the classes of the course, the same evaluation procedure will be followed as for the rest of the students. In the case that the previous condition is not met, they will have to arrange regular tutorials with the teacher at the beginning of the course, to follow the development of the subject through the completion of assignments, and to plan their delivery and presentation. If they do not pass the course at the first opportunity, they will have to take an objective test at the second opportunity.

Sources of information

Basic	- Fernández Franco, Lorenzo y Román Marugán, Paloma (2013). Manual de cooperación al desarrollo . Madrid:Síntesis - Jonker Geral/ Jan Harmsen (2013). Ingeniería para la Sostenibilidad. Barcelona:Reverté The proposed bibliography can be used as a guide. During the course there will be an analysis of suggested documentary sources in the classroom, which will normally be a resource available on the internet.The proposed bibliography can be used as a guide. During the course there will be an analysis of suggested documentary sources in the classroom, which will normally be a resource available on the internet.
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.