Teaching Guide					
Identifying Data					2023/24
Subject (*)	Quality engineering and environment			Code	730G05021
Study programme	Grao en Enxeñaría Naval e Oceánica				
Descriptors					
Cycle	Period	Year		Type	Credits
Graduate	1st four-month period	Third		Obligatory	4.5
Language	Spanish				
Teaching method	Face-to-face				
Prerequisites					
Department	Enxeñaría Naval e IndustrialQuímica				
Coordinador	Rodriguez Guerreiro, Maria Jesus		E-mail	maria.guerreiro@udc.es	
Lecturers	Rodriguez Guerreiro, Maria Jesus		E-mail	maria.guerreiro@udc.es	
Web					
General description	Coñecemento do medio mariño e a súa reglamentación (Convenio Marpol), contaminación mariña e impacto ambiental. Xestión da calidade e xestión medioambiental en buques.				

Study programme competences / results	
Code	Study programme competences / results
A17	Knowledge of the systems for evaluation of the quality, and of the norm and means related to the safety and environmental protection.
B2	That the students know how to apply its knowledge to its work or vocation in a professional way and possess the competences that tend to prove itself by the elaboration and defense of arguments and the resolution of problems in its area of study
B3	That the students have the ability to bring together and to interpret relevant data (normally in its area of study) to emit judgments that include a reflection on relevant subjects of social, scientific or ethical kind
B4	That the students can transmit information, ideas, problems and solutions to a public as much specialized as not specialized
B6	Be able to carrying out a critical analysis, evaluation and synthesis of new and complex ideas.
C1	Using the basic tools of the technologies of the information and the communications (TIC) necessary for the exercise of its profession and for the learning throughout its life.
C2	Coming across for the exercise of a, cultivated open citizenship, awkward, democratic and supportive criticism, capable of analyzing the reality, diagnosing problems, formulating and implanting solutions based on the knowledge and orientated to the common good.
C4	Recognizing critically the knowledge, the technology and the available information to solve the problems that they must face.
C5	Assuming the importance of the learning as professional and as citizen throughout the life.
C6	Recognizing the importance that has the research, the innovation and the technological development in the socioeconomic and cultural advance of the society.

Learning outcomes			
Learning outcomes	Study programme competences / results		
Knowledge of the systems for the evaluation of the Quality, as well as of the regulations and the means related to safety and environmental protection	A17	B2 B3 B4 B6	C1 C2 C4 C5 C6
Knowing the marine environment, the importance it has on the sea, its consequences and impact, as well as the quality and environmental management applied to the sector	A17	B2 B3 B4 B6	C1 C2 C4 C5 C6

Contents	
Topic	Sub-topic
The following topics develop the established contents of the verification memory card, which are:	I Environment II Marine Regulation III Quality
The marine ecosystems	1. The physical environment 2. The biological environment 3. Marine communities: Red tides and coral reefs 4. Degradation of ecosystems. Eutrophication. Seawater self-cleaning capacity
Marine pollution and environmental impact	1. Routes of entry of pollutants into the aquatic environment 2. Main pollutants 3. Accidental discharges to the sea. Corrective measures. Fight against marine pollution 4. Pollution and fisheries resources
Atmosphere	1. Air pollution 2. Atmospheric pollutants 3. Pollution control 4. Greenhouse effect. Depletion of the stratospheric ozone layer
Marine regulation. MARPOL Convention	1. Oil pollution 2. Contamination by liquid noxious substances transported in bulk 3. Contamination by ship's garbage 4. Air pollution caused by ships
Basic concepts of quality	1. Introduction Definition 2. Quality management. Definition. Fundamentals and strategies 3. The EFQM model
Management and Tools of quality	1. Introduction Definition 2. Quality management. Definition. Fundamentals and strategies 3. The EFQM model
The ISO 9001 standard	1. Concepts: Standardization, Certification and Accreditation 2. Normative ISO 9001: 2008 3. Requirements of the Standard
The ISO Standards and the EMAS regulation	1. Introduction and objectives 2. The ISO 14001 standard 3. The EMAS regulation

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Problem solving	B2 C2	6	6	12
Supervised projects	B3 C4 C5 C6	3	30	33
Laboratory practice	B4 C1	12	12	24
Mixed objective/subjective test	A17 B2 B3 B4 B6	3	0	3
Field trip	A17 B2 B3 B4 B6	5	0	5
Guest lecture / keynote speech	A17	17	17	34
Personalized attention		1.5	0	1.5
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description

Problem solving	Resolution of the resolution of diagrams of environmental equipment on board a ship. Resolution of exercises. Students work individually or in groups, doubts and/or questions and give an account of what they have learned
Supervised projects	Performance of directed work. Presentation and correction
Laboratory practice	Comprehensive reading of the practice. Carry out the experimental work. Proposes and solves the associated numerical calculations, as well as the questions posed. Examine and evaluate the final result.
Mixed objective/subjective test	Written test used for the evaluation of student learning.
Field trip	1. TECHNICAL VISIT TO THE ENVIRONMENT CLASSROOM ANTONIO DE ESCAÑO (ARSENAL DE FERROL) 2. TECHNICAL VISIT TO A VESSEL (FRAGATA F-100) (ARSENAL DE FERROL) 3. TECHNICAL VISIT SASEMAR (MARITIME SAFETY AND SECURITY COMPANY (FERROL) 4. TECHNICAL VISIT DON INDA VESSEL (CEE- A CORUÑA) he visits described above will be carried out whenever possible. These visits will reinforce the student's theoretical knowledge acquired in the subject.
Guest lecture / keynote speech	The student assimilates and takes notes. He/she raises doubts and questions.

Personalized attention	
Methodologies	**Description**
Supervised projects Problem solving	Students will receive personalized attention from the professor: face-to-face and/or e-mail tutorials on the theory of the subject; monitoring of the resolution of the problems carried out in the seminars through the Moodle platform; review of the development of the intermediate and final stages of the tutored work; The student with recognition of part-time dedication and academic dispensation of exemption from attendance will be attended in tutoring hours.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Supervised projects	B3 C4 C5 C6	Preparation of a supervised work and oral presentation of the same	25
Problem solving	B2 C2	Collaborative learning, Directed discussion	5
Laboratory practice	B4 C1	Active participation in the development of the practices. It will be mandatory to provide a report of each of the practices	5
Mixed objective/subjective test	A17 B2 B3 B4 B6	Final exam of all the given subject matter, theory and problems.	60
Field trip	A17 B2 B3 B4 B6	Assessment of attendance and participation in the technical visits applied to the theory of the course.	5

Assessment comments

La asistencia a los Seminarios es obligatoria para obtener la calificación de 0,5 puntos. La asistencia a las Visitas Técnicas es obligatoria para obtener la calificación de 0,5 puntos. La asistencia a las prácticas de laboratorio es obligatoria. No se aprobará la asignatura sin asistir a las prácticas de laboratorio. Los alumnos/as que obtuvieron un justificante por la no asistencia a las prácticas de laboratorio, realizaron un examen de la/ las mismas/as finales del primer cuatrimestre o realizaronlo con el examen de la segunda oportunidad para obtener el aprobado de dicha / como practica /como.Será obligatorio para aprobar la asignatura entregar un trabajo (formato Word) y realizar su exposición (formato Power point) en los días establecidos por el profesor/a con la correspondiente publicación en Moodle. La nota del trabajo se guardará para cursos posteriores y para la convocatoria de diciembre. Para aprobar la asignatura será necesario obtener un mínimo de 2,5 puntos en el examen sobre 6 para valorar las otras actividades.
Dispensa de esta asignatura: los/las estudiantes con reconocimiento de dedicación a tiempo parcial y dispensa académica de exención de asistencia serán evaluados mediante la calificación obtenida en el examen final (80%) y la realización de trabajos tutelados (20%). Para los alumnos/as que se presenten al examen de segunda oportunidad tendrán que cumplir los mismos criterios especificados para la primera oportunidad. Convocatoria adelantada (Diciembre): Se evaluará igual que el resto de las convocatorias.
Implicaciones de plagio: la realización fraudulenta de las pruebas o actividades de evaluación implicará directamente la calificación de suspenso "0" en la materia en la convocatoria correspondiente, invalidando así, cualquier calificación obtenida en todas las actividades de evaluación de cara a la convocatoria extraordinaria.

Sources of information	
Basic	- 2. J. M. PERÉS (1980). La polución de las aguas marinas. BARCELONA: OMEGA - 3. MARIANO SEOANE CALVO (2000). Manual de contaminación marina y restauración del litoral. MADRID: EDICIONES MUNDIPRENSA - 4. JOSE MARÍA SILOS RODRÍGUEZ (2008). Manual de lucha contra la contaminación.. CÁDIZ: UNIVERSIDAD DE CÁDIZ - 5. ORGANIZACIÓN MARITIMA INTERNACIONAL (2013). MARPOL. lONDRES: ORGANIZACIÓN MARITIMA INTERNACIONAL - 6. ENRIQUE CLAVER, JOSÉ FRANCISCO MOLINA Y JUAN JOSÉ TARÍ (2011). Gestión de la calidad y gestión medioambiental. MADRID: PIRÁMIDE - PABLO ALCALDE SAN MIGUEL (2010). CALIDAD. MADRID: PARANINFO S.A.
Complementary	- 12. JAIRO ALBERTO ROMERO (1999). Potabilización del agua. MÉJICO: ALFAOMEGA

Recommendations
Subjects that it is recommended to have taken before
CHEMISTRY/730G01104
Subjects that are recommended to be taken simultaneously
SHIPBUILDING TECHNOLOGY I/730G01124
Subjects that continue the syllabus
Other comments
1.- La entrega de los trabajos documentales que se realizaron en esta materia: 1.1. Se solicitará en formato virtual y/o soporte informático   1.2. Se realizará a través de Moodle, en formato digital sin necesidad de imprimirlos2. Se debe hacer un uso sostenible de los recursos y la prevención de impactos negativos sobre el medio natural3.- Se debe tener en cuenta la importancia de los principios éticos relacionados con los valores de la sostenibilidade en los comportamientos personales y profesionales 4.- Según se recoge en las distintas normativas de aplicación para la docencia universitaria se deberá incorporar la perspectiva de género en esta materia (se usará lenguaje no sexista, se utilizará bibliografía de autores de ambos sexos, se propiciará la intervención en clase de alumnos Exalumnas?) 5.- Traballaráse para identificar y modificar perjuicios y actitudes sexistas, y se influirá en el entorno para modificarlos y fomentar valores de respeto e igualdad 6. Se detectarán situaciones de discriminación por razón de género y se propondrán acciones y medidas para corregirlas 7. Se facilitará la plena integración del alumno que por razones físicas, sensoriales, psíquicas o socioculturales, experimenten dificultades a un acceso adecuado, igualitario y provechoso a la vida universitaria.

(*)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.