Teaching Guide				
Identifying Data				2017/18
Subject (*)	Ship and offshore design 1		Code	730G05032
Study programme	Grao en Enxeñaría Naval e Oceánica			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Fourth	Obligatoria	7.5
Language	SpanishEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e Industrial			
Coordinador	Junco Ocampo, Fernando	E-mail	fernando.junco@udc.es	
Lecturers	Díaz Casás, Vicente Junco Ocampo, Fernando	E-mail	vicente.diaz.casas@udc.es fernando.junco@udc.es	
Web				
General description	O contido desta materia abarca o desenvolvemento dos coñecementos e técnicas de realizar o anteproxecto dun buque partindo dos requirimentos previstos de actividade. Estudaranse os diferentes parámetros que definen a súa arquitectura, relacións paramétricas, coeficientes, ecuacións de pesos e elementos que constitúen as variables de tipo económico para a súa construción e explotación			

Study programme competences / results	
Code	Study programme competences / results
A23	Have a capacity for the design and calculation of the inhabitable spaces of the ships and sea artifacts, and of the services that are arranged in these spaces.
A24	Have a capacity for the integration on board the propeller systems, taking its size, weight, dynamic loads, impact in the water tightness, the space necessary for its maintenance, etc. into account
A25	Have a capacity for the integration on board the systems to assist taking its size, weight, dynamic loads, impact in the water tightness, the space necessary for its maintenance, etc. into account
A26	Have a Have a capacity for the integration on board the electrical systems taking its size, weight, dynamic loads, impact in the water tightness, the space necessary for its maintenance, etc. into account
A27	Have a Have a capacity for the integration on board the electronic systems of control and of navigation, taking its size, weight, impact in the water tightness, the space necessary for its maintenance, etc., into account
A28	Knowledge of the methods of project of its specific technology.
B1	That the students proved to have and to understand knowledge in an area of study what part of the base of the secondary education, and itself tends to find to a level that, although it leans in advanced text books, it includes also some aspects that knowledge implicates proceeding from the vanguard of its field of study
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
B5	That the students developed those skills of learning necessary to start subsequent studies with a high degree of autonomy
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.
C3	Understanding the importance of the enterprising culture and knowing the means within reach of the enterprising people.
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.
C7	Capacidade de traballar nun ámbito multilingüe e multidisciplinar.

Learning outcomes			
Learning outcomes	Study programme competences / results		
DEsenvolvemento do proxecto de buques.	A23 A24 A25 A26 A27 A28	B1 B2 B3 B4 B5 B6	C1 C2 C3 C4 C5 C6 C7
Realización dos cálculos aplicados ao proxecto do buque.	A23 A24 A25 A26 A27 A28	B1 B2 B3 B4 B5 B6	C1 C2 C3 C4 C5 C6 C7

Contents	
Topic	Sub-topic
Os bloques e temas seguintes desenvolven os contidos establecidos na ficha da Memoria de verificación que son :	Ecuacións básicas de dimensionamiento de buques. Selección de configuración. Elección da solución máis favorable. Deseño das formas e do compartimentado do buque. Ecuacións de peso e desprazamento do buque:
Introducción	Definicións Requirimentos previstos de actividade Actividades básicas no proxecto
Ecuacións básicas de dimensionamiento	Clasificación de buques Diagramas básicos do proxecto Ecuacións básicas de dimensionamiento O libro de conceptos dun buque
Libro de conceptos, especificación e contrato de construción	A especificación do buque Características e exemplo dunha especificación tipo O contrato de construción: Características máis importantes relacionadas co proxecto do buque
Costo inicial y costo de operación	Descrición do custo inicial dun buque e os seus diferentes partidas Criterios e métodos de avaliación económica.
Criterios e métodos de avaliación económica	O orzamento do buque e criterio de mérito Criterio de avaliación técnica e selección de dimensións e coeficientes Dimensións e relacións entre as dimensións do buque
Tipos de buques	Clasificación Descripción de buques

Selección de configuración, dimensións e coeficientes	Xeneralidades Variables independentes e dependentes Selección da cifra de merito. Buques de referencia Selección da configuración inicial Selección de solucións e alternativas Xogo típico de dimensións e coeficientes
Proxecto de formas	Xeneralidades Formulación do problema Aspecto da curva de áreas seccionales Contorno de proa. bulbo de popa Métodos convencionais de proxecto de formas Proxecto de formas a partir de series sistemáticas Proxectos de pormas por distorsión de formas existentes
Cálculo de desprazamento	Ecuación do desprazamento Peso en rosca Estimación do peso de aceiros e métodos para calcular o peso da estrutura do buque Formulario vario para cálculo de pesos de diferentes compoñentes do peso en rosca do buque Definición e distribución do peso en rosca Peso morto lastro
Cálculo de compartimentado	Caracterización dos espazos do buque Compartimentado horizontal, vertical e transversal do buque.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Supervised projects	A23 A24 A25 A26 A27 A28 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7	7.5	60	67.5
Case study	A23 A24 A25 A26 A27 A28 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7	20	25	45
Problem solving	C2 C3 C4	10	40	50
Guest lecture / keynote speech	A23 A24 A25 A26 A27 A28 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7	4	2	6
Personalized attention		19	0	19
(*)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	Elaboración e defensa do anteproxecto dun buque ou artefacto
Case study	Análisise dos distintos casos / problemas abordados narealización do anteproxecto do buque.
Problem solving	Dimensionamiento dun buque a partir duns requirimentos
Guest lecture / keynote speech	Explicación dos coñecementos e técnicas da asignatura

Personalized attention	
Methodologies	**Description**
Problem solving Case study Supervised projects	Seguimiento continuo del avance del proyecto. Tutorías individualizadas o de grupos reducidos para resolver las incidencias o dificultades detectadas en la elaboración del proyecto.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Case study	A23 A24 A25 A26 A27 A28 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7	Resolución e entrega de distintos problemas exercicios plantexados ao longo do curso. Preguntas breves	75
Supervised projects	A23 A24 A25 A26 A27 A28 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7	Elaboración dun anteproxecto co alcance descrito non moodle dá materia. Só conta nunha avaliación	25
Others			

Assessment comments
Posta que a evaluación dos traballos tuteados e o estudo de casos realizaráse nas clases presenciais será necesario asistir ao menos a un 75% das mesmas para que sexan evaluadas. No caso de ser justificado adecuadamente poderáse eximir ao alumno de cumplir con esta condición. Para computar los puntos das diferentes metodologías, a calificación do estudio de casos e traballos tutelados debe de ser como mínimo de 5 sobre 10 e a da proba un 4 sobre 10

Sources of information	
Basic	- Fernado Junco (2003). Proyectos de buques y artefactos. - Schneekluth (1987). Ship Design for Efficiency & Economy. - (). SOLAS. - Watson (1998). Practical ship design. - Alvariño y Otros (2000). Proyecto básico del buque mercante.
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.