

## SUBJECT TEACHING GUIDE

G1049 - Navigation I

Degree in Nautical Engineering and Maritime Transport

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Degree in Nautical Engineering and Maritime Transport			Type and Year	Compulsory. Year 2
Faculty	School of Maritime Engineering				
Discipline	Subject Area: Navegation				
Course unit title and code	G1049 - Navigation I				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DE LA NAVEGACION Y DE LA CONSTRUCCION NAVAL				
Name of lecturer	ANTONIO TRUEBA CORTES				
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Office	E.T.S. de Náutica. Planta: + 2. DESPACHO (264)				
Other lecturers					

### 3.1 LEARNING OUTCOMES

- Astronomical navigation: Ability to determine the ship position using the celestial bodies.

- Terrestrial and coastal navigation: Ability to determine the vessel position using terrestrial markings. Ability to determine the vessel position using navigation aids, including lighthouses, beacons and buoys. Ability to determine the vessel position using estimated navigation, taking into account the winds, tides, currents and the estimated speed. Thorough knowledge of nautical charts and publications such as courses, tide tables, warnings to navigators, navigational warnings and information on the organization of maritime traffic, and the ability to use it all.

- Magnetic and gyroscopic compasses: Knowledge of the principles of magnetic compass and gyrocompass. Ability to determine errors of the magnetic and gyroscopic compasses using astronomical and terrestrial means, and to compensate for such errors.

#### 4. OBJECTIVES

Terrestrial navigation

Thorough knowledge of and ability to use nautical charts and publications, such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ships' routing information

Knowledge of the principles of magnetic compass. Ability to determine its errors

#### 6. COURSE ORGANIZATION

##### CONTENTS

1	Introduction to navigation. Introduction to the terrestrial magnetism. The magnetic compass.- Hours: types of time used in navigation. The Mercator chart: its use. Navigation at view of the Coast.- Currents and winds.- Position lines used in coastal navigation.- Navigational lights and signals.
2	Tides.
3	Rhumb line. Dead reckoning navigation.
4	Navigation with fog: Generalities. Aids to navigation in foggy weather. Precautions Warnings about the sound signals in the navigation with fog.

#### 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Theoretical exam at the end of December	Written exam	No	Yes	50,00
Theoretical and practical exam	Written exam	Yes	Yes	50,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
The evaluation criteria of the competition are in line with those of the 2010 STCW Convention.				
Observations for part-time students				

#### 8. BIBLIOGRAPHY AND TEACHING MATERIALS

##### BASIC

Moreu Curbera/ Martínez Jiménez: Astronomía y Navegación, Tomos I y II Librería San José, Vigo.  
 Almanaque Náutico, Armada Española, Servicio de Publicaciones.  
 Bowditch: American Practical Navigator, Defense Mapping Agency Hydrographic Center, Washington D.C., U.S.  
 Anuario de Mareas. Instituto Hidrográfico de la Marina. Armada Española, Servicio de Publicaciones.  
 Tablas de Navegación de Martínez Jiménez