

SUBJECT TEACHING GUIDE

G1071 - Ship Handling and Manoeuvring

Degree in Nautical Engineering and Maritime Transport

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Nautical Engineering and Maritime Transport			Type and Year	Compulsory. Year 3
Faculty	School of Maritime Engineering				
Discipline	Subject Area: Manoeuvres				
Course unit title and code	G1071 - Ship Handling and Manoeuvring				
Number of ECTS credits allocated	6	Term	Semester based (2)		
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	FRANCISCO JOSE CORREA RUIZ				
E-mail	francisco.correa@unican.es				
Office	E.T.S. de Náutica. Planta: + 2. DESPACHO (266)				
Other lecturers	FRANCISCO VUELTA FERNANDEZ				

3.1 LEARNING OUTCOMES

-Ship handling and manoeuvring. Manoeuvre and handle a ship in all conditions. Manoeuvring characteristics and interaction.
Anchor operations. Operations with tugs.

4. OBJECTIVES

Ship manoeuvring and handling Knowledge of:

- .1 the effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances
- .2 the effects of wind and current on ship handling
- .3 manoeuvres and procedures for the rescue of person overboard
- .4 squat, shallow-water and similar effects
- .5 proper procedures for anchoring and mooring
- .6 manoeuvres when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, headreach and stopping distances
- .7 handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response
- .8 application of constant-rate-of-turn techniques
- .9 manoeuvring in shallow water, including the reduction in under-keel clearance caused by squat, rolling and pitching
- .10 interaction between passing ships and between own ship and nearby banks (canal effect)
- .11 berthing and unberthing under various conditions of wind, tide and current with and without tugs
- .12 ship and tug interaction
- .13 use of propulsion and manoeuvring systems
- .14 choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used
- .15 dragging anchor; clearing fouled anchors
- .16 dry-docking, both with and without damage
- .17 management and handling of ships in heavy weather, including assisting a ship or aircraft in distress; towing operations; means of keeping an unmanageable ship out of trough of the sea, lessening drift and use of oil
- .18 precautions in manoeuvring to launch rescue boats or survival craft in bad weather
- .19 methods of taking on board survivors from rescue boats and survival craft
- .20 ability to determine the manoeuvring and propulsion characteristics of common types of ships, with special reference to stopping distances and turning circles at various draughts and speeds
- .21 importance of navigating at reduced speed to avoid damage caused by own ship's bow wave and stern wave
- .22 practical measures to be taken when navigating in or near ice or in conditions of ice accumulation on board
- .23 use of, and manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS) areas

6. COURSE ORGANIZATION

CONTENTS

1	.1 Propellers Forces due to the propellers. .2 Rudders. .3 Combined effect of the rudder and propeller .4 Ship handling: manoeuvring and stopping. .5 Mooring elements. .6 Anchoring elements. .7 Anchoring machines. .8 Approaching .9 Rivers and narrow channels navigation .10 Anchoring .11 Tugs .12 Manoeuvring at port
2	.13 Buoying .14 Colregs .15 SIC

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Pratice cases and exercises.	Others	No	Yes	80,00
Practice cases and exercises.	Work	No	No	20,00
TOTAL				100,00
Observations				
<p>Criteria for evaluating competence:</p> <p>Safe operating limits of ship propulsion, steering and power systems are not exceeded in normal manoeuvres.</p> <p>Adjustments made to the ship's course and speed to maintain safety of navigation</p> <p>All decisions concerning berthing and anchoring are based on a proper assessment of the ship's manoeuvring and engine characteristics and the forces to be expected while berthed alongside or lying at anchor</p> <p>While under way, a full assessment is made of possible effects of shallow and restricted waters , ice, banks, tidal conditions, passing ships and own ship's bow and stern wave so that the ship can be safely manoeuvred under various conditions of loading and weather</p>				
Observations for part-time students				
Final exam on ship handling simulator plus write exam.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- OMI (2003) COLREG. IMO, Londres 2004.
 OMI (1987). Código Internacional de Señales. IMO, Londres, 1988.
 Ship Handling. Theory and practice. (2007) DJ House. Elsevier. 1ª Ed.