

Liverpool John Moores University

Title: Ship Handling and Advanced Navigation
Status: Definitive
Code: **5553BFC** (121565)
Version Start Date: 01-08-2020

Owning School/Faculty: Engineering
Teaching School/Faculty: Blackpool & Fylde College

Team	Leader
Barbara Kelly	Y

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 83.5
Total Learning Hours: 200 **Private Study:** 116.5

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	74
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam 1	Ship Handling and RoR	70	2
Exam	Exam 2	Celestial Navigation	30	1.5

Aims

The aim of this module is to develop an appreciation of the methods and regulations for handling and manoeuvring vessels, as well as methods employed in deep sea situations to verify position and the errors of the compasses.

Learning Outcomes

After completing the module the student should be able to:

- 1 Recommend actions for the safe manoeuvring of a vessel in a variety of situations.
- 2 Evaluate actions taken to avoid collision in a range of scenarios, supported by IRPCS.
- 3 Assess the accuracy of gyro and magnetic compasses using celestial objects.
- 4 Judge the position of a ship using a range of celestial navigation techniques.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Ship Handling and RoR	1	2
Celestial Navigation	3	4

Outline Syllabus

- *Steering and propulsion arrangements*
- *Changing over steering and propulsion arrangements in both routine and emergency situations*
- *Transverse thrust, turning circles and the effect of ballast and loaded conditions on manoeuvring*
- *Interaction when overtaking and head-on, and when working with tugs.*
- *Bank interaction and squat.*
- *The procedure for turning the vessel short round in restricted waters*
- *Anchoring and berthing procedures, and the effects of wind and tide*
- *The Collision Regulations and their application in clear and restricted visibility*
- *Buoyage systems and navigation around buoys*
- *Magnetic and gyrocompass error calculations using sun, stars and planets*
- *Position fixing by the intercept method using sun, stars and planets*
- *Obtaining latitude using Polaris and Merpass observations*
- *Practical use of the sextant and its errors*

Learning Activities

Learning and teaching will involve recommendations of appropriate methods of ship handling aided by diagrams and models. Assessment will require the application of the methods in given situations, and explanation of the method with reference to interaction and transverse thrust.

Lessons will involve evaluation and discussion of a variety of scenarios in order to determine appropriate actions under the Collision Regulations, as well as critical analysis and discussion of case studies where collision regulations have not been correctly applied. Assessment will involve identification of vessels and buoys and justification of appropriate actions.

Lessons will include assessment of compass errors using compass bearings and calculated true azimuths, and judgment of the vessel's position by means of sextant altitudes. The theories behind the calculations will be expounded through diagrams. Practical use of the sextant will be demonstrated. Assessment will involve calculation of compass errors and positions, as well as evaluation of work done.

Notes

This module will contribute to the underpinning knowledge required for progression to an Officer of the Watch professional qualification. Further information can be found within the STCW syllabus.