

Liverpool John Moores University

Title: PRACTICAL NAVIGATION
Status: Definitive
Code: **4019MAR** (105581)
Version Start Date: 01-08-2016

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Farhan Saeed	Y

Academic Level: FHEQ4
Credit Value: 12
Total Delivered Hours: 44
Total Learning Hours: 120
Private Study: 76

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	33
Practical	5
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Assignment-planning, monitoring, execution and appraisal of a simple passage.	20	
Essay	AS2	Numerical based questions. Time Constrained 2(hrs)	80	

Aims

To facilitate the calculation of a ships position by celestial observation using a sextant and chronometer and to calculate and plan passages at a level appropriate to an OOW.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use instruments and apply corrections to obtain observed altitude and UTC
- 2 Determine the ships position by celestial observations
- 3 Calculate routes & plan a passage

Learning Outcomes of Assessments

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

CW	3	
CW	1	2

Outline Syllabus

The celestial sphere and the use of the nautical Almanac

Corrections to obtain Observed Altitude and UTC.

Corrections to obtain true altitude

Latitude by Pole star observation and Mer. Alt.

The direction of a position line and a position through which it passes from celestial observations.

Compass Error from celestial observations

Position by means of celestial observations.

Select suitable stars for observation.

Sextant and Chronometer: The sextant, errors and their adjustment. Use and care of the chronometer.

Observational Calculations: Sextant observations of Sun, stars and planets.

Sailings: Parallel sailing, plane sailing, Mercator sailing, Great Circle and Composite Great Circle Sailings.

Simple properties of Mercator and gnomonic charts: Latitude and longitude scales; measurement of distance. Rhumb lines. Great circles and composite great circle tracks.

Position Fixing: Principle of position fixing by measurement of difference of distance from two or more fixed points. The hyperbolic lattice on navigational charts.

Theoretical consideration of modern navigational systems such as GPS.

Passage planning: stages, following & making landfall

Learning Activities

Lectures, tutorials and laboratory demonstrations.

Practical exercises using navigational instruments.

Notes

Provides the knowledge and skills needed to use celestial navigation and plan the passage of a ship.