

## Liverpool John Moores University

Title: Navigation and Meteorology  
Status: Definitive  
Code: **5010NAU** (119087)  
Version Start Date: 01-08-2016

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

Team	Leader
Ewan Kirkbride	Y
Jonathan Warren	

**Academic Level:** FHEQ5      **Credit Value:** 24      **Total Delivered Hours:** 88  
**Total Learning Hours:** 240      **Private Study:** 152

### Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	66
Practical	10
Tutorial	10

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Meteorology coursework	20	
Exam	AS2	Meteorology examination	30	2
Portfolio	AS3	Passage plan portfolio	50	

### Aims

*The module will enable the student to develop the techniques of passage planning and demonstrate competency in appraising and planning a passage, incorporating the influence of weather.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Obtain and evaluate meteorological and climatological data. Interpretation and application of meteorological and climatological information for the purpose of weather routing of vessels.
- 2 Understand weather associated with pressure systems. Understand ocean current circulation and formation of ice.
- 3 Appraise, plan and document a coastal passage including contingencies.
- 4 Demonstrate the ability to determine a recommended ocean route and to make sailing and tidal calculations relevant to both coastal and ocean passages.

## Learning Outcomes of Assessments

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

Essay	1	
Exam	2	
Portfolio	3	4

## Outline Syllabus

*Obtain and analyse surface and upper air charts. Identify regions of TRS activity, ITCZ, frontal and non-frontal depressions, and all main synoptic features.*  
*Thermal winds, Rossby waves and the influence on the development of mid latitude depressions of convergence and divergence in the upper air.*  
*Principles of weather forecasting and how the forecast charts are prepared.*  
*The growth and movement of sea waves and swell. Use of wave height charts.*  
*The formation of Ocean currents*  
*Use of routeing charts to obtain climate data including regions of ice, TRS activity, poor visibility, currents.*  
*Understand the principles of ship/shore based weather.*  
*Ice and ice accumulation.*  
*Identify relevant factors, gather and analyse navigational, meteorological and operational data in order to prepare a safe and effective passage plan.*  
*Document the planned passage.*  
*Employ navigation aids and practices in a suitable manner in order to execute the passage safely and effectively.*  
*Calculate distances by a variety of direct and indirect routes.*  
*Calculates tidal heights/times and tidal flow.*  
*Makes decisions as to contingencies that may arise during the execution of a passage.*

## Learning Activities

Lectures, tutorials and practical demonstrations.

### **Notes**

This module will provide the underpinning navigation skills required to manage the passage of a vessel during a voyage and in obtaining and interpreting meteorological data. It is intended to be studied by students following an approved STCW95 training programme who have spent some time on the bridge of a ship.