

Liverpool John Moores University

Title: METEOROLOGY
Status: Definitive
Code: **4016MAR** (105578)
Version Start Date: 01-08-2016

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

Team	Leader
Alan Wall	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	38
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	time constrained coursework (2hrs)	80	
Essay	AS2	observation report	20	

Aims

To provide an introduction to the principles of meteorology and climate together with a appreciation of meteorological processes and observing methods, codes and weather services to marine community.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use meteorological observing methods, World Meteorological Organisation (WMO) codes and describe weather services available to marine community.
- 2 Evaluate meteorological processes for marine applications.
- 3 Identify and describe the weather associated with the main features of a synoptic chart.
- 4 Demonstrate an appreciation of the general circulation of the atmosphere, the main climatic zones over the oceans and the ocean currents of the world.

Learning Outcomes of Assessments

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

CW	1	2	4
CW	3		

Outline Syllabus

Atmosphere: Structure and composition.

Atmospheric Pressure: Definitions, standard atmospheric conditions and diurnal range.

Temperature: Solar and terrestrial radiation. Methods of heating and cooling of the troposphere.

Wind: Forces, general circulation, geostrophic wind, localised effects and local winds.

Water Vapour: Water phases, Humidity and Dew Point.

Instruments: Barometer, Hygrometer, Thermometer, Anemometer and other instruments.

Clouds: Atmospheric stability and instability, cloud formation, cloud types and thunderstorm

Precipitation: Formation and types of precipitation and the causes of reduced visibility.

Organisation and Operation of Meteorological Services: Meteorological observations and W.M.O. codes, coding and de-coding, Weather services available to shipping

Main synoptic patterns and air masses: Air masses and the weather associated with each including fronts and other patterns. Monsoons, ITCZ and TRS

Ocean currents: Description and evaluation. Characteristics. Ice conditions.

Learning Activities

Formal lectures and videos

Weather observation - including using meteorological equipment.

Practical exercises to code weather and produce forecasts.

Notes

This module delivers the knowledge necessary to understand the meteorological and climate as prescribed by STCW for Deck Officers.