

Liverpool John Moores University

Title: Stability and Engine Room Operations
Status: Definitive
Code: **5552BFC** (121563)
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:** 84
Total Learning Hours: 200 **Private Study:** 116

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	Stability	40	2
Exam	Exam	Stability	40	2
Essay	Essay	Engineering (1500 word)	20	

Aims

This module aims to provide and apply under-pinning knowledge of shipboard operations for both stability and engineering in a range of methods.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use hydrostatics, transverse and longitudinal stability techniques to predict the movement of a vessel about its centre of gravity when forces are applied.
- 2 Formulate and justify actions to correct stability issues.
- 3 Evaluate the impact of the bridge team on engine room operations.

Learning Outcomes of Assessments

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

Stability	1
Stability	2
Engineering	3

Outline Syllabus

- *A range of Hydrostatic principles and formulae utilised in problem solving*
- *Hydrostatic Principles, Load Lines and Draft marks*
- *A range of transverse and longitudinal formulae and sketches used to cover the topics listed.*
- *Calculating Centre of Gravity, angle of List, Free Surface Effect, angle of Loll*
- *GZ Curves, Stability Information Booklet, Grain Rules, Wind Heeling and Rolling,*
- *Longitudinal Trim, Air Draught, Dry Docking, Bilging, Load Line Regulations,*
- *Shear Force and Bending Moments, Passenger Ships, Stockholm Agreement.*
- *A range of engineering theories as utilised in the engine room: main propulsion methods, auxiliary systems, hotel services, control systems.*

Learning Activities

Discuss theories to support principles of Stability

Calculate specific values based on correct use of formulae

Sketch varying conditions of Stability

Lecturers interspersed with group activities considering theory and applied techniques.

Case studies for both independent and group learning identifying best practice and areas for improvement within industry

Simulated and worked examples of operations on board vessels

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.