

Liverpool John Moores University

Title: Ship Stability and Construction
Status: Definitive
Code: **5502ALAM** (120667)
Version Start Date: 01-08-2015

Owning School/Faculty: Engineering
Teaching School/Faculty: Malaysian Maritime Academy

Team	Leader
Barbara Kelly	

Academic Level: FHEQ5 **Credit Value:** 24.00 **Total Delivered Hours:** 168.00
Total Learning Hours: 240 **Private Study:** 72

Delivery Options

Course typically offered: Non Standard Year Long

Component	Contact Hours
Lecture	99.000
Tutorial	64.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		40.0	2.50
Report	Report	Loading Plan Maximum 1000 words	10.0	
Exam	Exam		50.0	2.50

Aims

To assess the operational practices required for the safe and efficient loading of ships.

Learning Outcomes

After completing the module the student should be able to:

- LO 1 Demonstrate knowledge of the theories and factors affecting stability and trim, at moderate and large angles of heel, as applicable to merchant ship management.
- LO 2 Assess stability factors relating to individual ship type.
- LO 3 Demonstrate an understanding of the design, construction and maintenance of ships.

Learning Outcomes of Assessments

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

Exam	LO 1 LO 2
Report	LO 1
Exam	LO 1 LO 2 LO 3

Outline Syllabus

Draught, Trim and Stability
Compliance with the Minimum Freeboard Requirements of the Load Line Regulations
Approximate Calculation of Areas and Volumes
Effects of Density, Simplified Stability Data, Trim and List
Recommendation on Intact Stability for Passenger and Cargo Ships under 100 Metres in Length
Rolling of Ships, Dry-docking and Grounding
Theories Affecting Trim and Stability
Responsibilities under the International Conventions and Codes
Stability at Moderate and Large Angles of Heel, Dynamical Stability
Approximate GM by Means of Rolling Period Tests
Effect of flooding on Transverse Stability and Trim
Shear Force, Bending Moments and Torsional Stress
Knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits
Use of Automatic Data Based (ADB) Equipment
Intact Stability Requirements for the Carriage of Grain
Ship Building Materials, Welding, Bulkheads
Watertight and Weather tight Doors
Corrosion and its Prevention, Surveys and Dry Docking

Learning Activities

Classroom based lectures and tutorials including the use of appropriate software based programmes where possible.

Notes

This module contributes to the knowledge required for a professional qualification for the Merchant Navy.