Liverpool John Moores University

Title:	Marine Engineering and Structures
Status:	Definitive
Code:	**5011NAU** (119088)
Version Start Date:	01-08-2016
Owning School/Faculty:	Maritime and Mechanical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Geraint Phylip-Jones	Y

Academic Level:	FHEQ5	**Credit Value:**	24	**Total Delivered Hours:**	76
Total Learning Hours:	240	**Private Study:**	164		

Delivery Options
Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	48
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Survey and Maintenance Examination	35	2
Exam	AS2	Marine Engineering Examination	35	2
Essay	AS3	Construction Coursework	30	

Aims

To develop a sound knowledge of the structural requirements of vessels with respect to the handling and carriage of cargo, damage limitation, maintenance and preparations for surveys. An advanced understanding of powerplant and auxilliary machinery used on ships.

Learning Outcomes

After completing the module the student should be able to:

1 Demonstrate an understanding of structural requirements and features
2 Explain maintenance methods and procedures.
3 Explain preparation for survey of vessel and its equipment.
4 Assess the design of marine power plant.
5 Develop an understanding of marine auxilliary machinery.

Learning Outcomes of Assessments

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

Survey & maintenance exam	2	3
Marine engineering exam	4	5
Construction coursework	1	

Outline Syllabus

Loadline: Condition of assignment, summer freeboard, timber freeboard, all seasons loadline.
International codes for the construction of ships.
Damage limitation features: Watertight bulkheads, fire division, bilge and fire fighting systems.
Strengthening for ice.
Materials: Steel, non-ferrous alloys.
Processes: Annealing, normalizing, welding, galvanizing and bonding.
Material failure.
Corrosion prevention and planned maintenance.
Preparation for survey and drydocking.
Marine power plants: Diesel, steam turbine and gas turbine.
Auxilliary machinery systems.
Steering systems: Ram and rotary.
Factors affecting fuel consumption: Fuel consumption calculation, conservation of fuel, propeller behaviour analysis (pitch and slip), ship hull form and conditions.

Learning Activities

Lectures and tutorials.

Notes

This module provides an overview of the construction and maintenance of ships and

of marine engineering systems.