

## Liverpool John Moores University

Title: SHIP CONSTRUCTION & MATHEMATICS  
Status: Definitive  
Code: **4515SAM** (119645)  
Version Start Date: 01-08-2016

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

Team	Leader
Barbara Kelly	Y

**Academic Level:** FHEQ4      **Credit Value:** 12      **Total Delivered Hours:** 42  
**Total Learning Hours:** 120      **Private Study:** 78

### Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	20
Tutorial	20

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Construction and Stress coursework	70	
Exam	AS2	Mathematics examination	30	2

### Aims

*To provide underpinning knowledge of mathematics and a detailed knowledge of ship construction as required by an Officer of the Watch.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Identify the significant features of the structure of a ship
- 2 Recognise the salient features of a range of ship types
- 3 Describe ship stresses and ship stress calculating equipment
- 4 Manipulate algebraic expressions and solve equations
- 5 Apply the principles of basic trigonometry

### **Learning Outcomes of Assessments**

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

Essay	1	2	3
Exam	4	5	

### **Outline Syllabus**

*Significant features of the structure of a ship.*  
*Ship terminology. Structural heavy weather damage.*  
*Framing systems.*  
*Structural arrangements; Bulkheads, Hatches,*  
*Water and weather tightness.*  
*The function and structure of tanks; double bottoms, sides, wings and peaks.*  
*Air and sounding pipes, bilge and ballast piping systems.*  
*Salient features of a range of ship types.*  
*Ship stresses and ship stress calculating equipment.*  
*Arrangements to resist for pounding and panting*  
*The cause and regions affected by forces exerted on a ship.*  
*Variation in the sheer and bending stress.*  
*Basic Algebraic Functions and Trigonometry.*

### **Learning Activities**

Lectures and tutorials. Extensive use of on-line Mathematics Tutorial Software.

### **Notes**

Provides an appreciation of ship construction at Officer of the Watch level and provides the underpinning Mathematics for other modules, For MCA exemptions for deck OOW CoC, students need to obtain 50% in the ship construction assessment.