

Liverpool John Moores University

Title: THERMODYNAMICS & FLUID MECHANICS
Status: Definitive
Code: **4516ENGRIV** (117210)
Version Start Date: 01-08-2016

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

Team	Leader
Russell English	Y

Academic Level: FHEQ4
Credit Value: 10
Total Delivered Hours: 26
Total Learning Hours: 100
Private Study: 74

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	18
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		50	2
Essay	Essay		25	
Essay	Essay		25	

Aims

To introduce the student to the fundamental concepts of Thermodynamics and Fluid Mechanics and their application to engineering problems.

Learning Outcomes

After completing the module the student should be able to:

- 1 Examine thermodynamic processes involving ideal gases in closed and open systems and calculate work and heat transfers
- 2 Use property tables and charts for vapours
- 3 Solve problems in hydrostatics
- 4 Solve problems in ideal steady fluid flows

Learning Outcomes of Assessments

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

Exam	1	2	3	4
Essay 1	1	2		
Essay 2	3	4		

Outline Syllabus

Thermodynamic definitions

The First Law of Thermodynamics

Non-Flow and Steady Flow Energy Equation

Properties of Gases.

Non-Flow processes and Steady Flow processes for gases.

Properties of Fluids

Hydrostatic Equation

Manometry

Continuity, Bernoulli and Momentum equations

Hydrostatic forces.

Learning Activities

Combination of lectures, tutorials and laboratories

Notes

This module is designed to provide an introduction to the subjects of Thermodynamics, Fluid Mechanics and Heat Transfer.