

Liverpool John Moores University

Title: THERMODYNAMICS
Status: Definitive
Code: **4505ICBTME** (127032)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: ICBT, Colombo

Team	Leader
Alison Cotgrave	Y

Academic Level: FHEQ4
Credit Value: 15
Total Delivered Hours: 65
Total Learning Hours: 150
Private Study: 85

Delivery Options

Course typically offered: S2 and Non Std S2 (S2 for Jan)

Component	Contact Hours
Lecture	45
Practical	3
Tutorial	15

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Coursework (1500 Words)	40	
Exam	AS2	Exam	60	2

Aims

This unit aims to extend knowledge of heat and work transfer and enhance understanding of the motion of heat, fluids and its relevance to engineering. It will develop learners' understanding of the principles and laws of thermodynamics and thermo fluids and their application to engineering thermodynamic systems

Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse a thermodynamic problem based on the principles of thermodynamics and relate the principals during the approach of problem solving.
- 2 Apply the concepts of thermodynamics in the problem solving process.
- 3 Relate the theoretical concepts learned to practical aspects of thermodynamics.
- 4 Analyse and evaluate a practical thermodynamics problem by the application of the concepts learned.

Learning Outcomes of Assessments

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

Essay	3	4
Exam	1	2

Outline Syllabus

First and second law of thermodynamics

Thermodynamic cycles

Availability analysis

Power plants and Combined Heat and Power (CHP) plants

Devices that use thermodynamic laws

Characteristics of fluid flow and Reynold number

Friction factor and losses in piping systems

Learning Activities

Students will be supported in their learning, to achieve the above learning outcomes, in the following ways:

By a series of lectures and tutorials and through participation within laboratory practical sessions for problem solving.

Self-managed investigative study to analyse cases related to thermodynamics.

In-class participation and case studies are key features of this module.

Notes

