

MODULE DESCRIPTOR

Module Title

Thermofluids 1

Reference	EN1702	Version	6
Created	August 2021	SCQF Level	SCQF 7
Approved	May 2006	SCQF Points	15
Amended	August 2021	ECTS Points	7.5

Aims of Module

To enable the student to understand the basic concepts and theories of Thermodynamic Properties and Fluid Statics.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Identify key thermodynamic properties of gases and vapours.
- 2 Explain thermodynamic principles to analyse simple systems and processes.
- 3 Explain key fluid properties and methods of measuring pressure.
- 4 Analyse problems involving hydrostatics.
- 5 Perform experiments on thermofluids principles and accurately record, analyse and report on these.

Indicative Module Content

Units and dimensions. Thermodynamic systems, properties of gases and vapours, processes, energy, heat and work transfers, non-flow energy equation. Fluid properties, Hydrostatics, Pressure distribution in fluids at rest, Measurement of pressure, Forces on plane and curved surfaces, Buoyancy and Stability.

Module Delivery

The module is delivered by means of lectures, tutorials and guided self-study and is integrated with applications within the laboratory.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	50	50
Non-Contact Hours	100	100
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type: Coursework Weighting: 30% Outcomes Assessed: 5
 Description: Coursework.

Component 2

Type: Examination Weighting: 70% Outcomes Assessed: 1, 2, 3, 4
 Description: Closed book examination.

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The module has 2 components and to gain an overall pass a minimum D grade must be achieved in each component. The component weighting is as follows: C1 is worth 30% and C2 is worth 70%.

		Coursework:						NS
		A	B	C	D	E	F	
Examination:	A	A	A	B	B	E	E	
	B	B	B	C	E	E		
	C	B	C	C	C	E	E	
	D	C	C	D	D	E	E	
	E	E	E	E	E	E	F	
	F	F	F	F	F	F	F	
	NS	Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module None in addition to the course entry requirements.
 Corequisites for module None.
 Precluded Modules None.

INDICATIVE BIBLIOGRAPHY

- 1 CLIFFORD, MICHAEL, et al, 2009. An Introduction to Mechanical Engineering Part 1. Hodder Education.
- 2 Spurk, Joseph H et al; 2020. Fluid Mechanics. Cham: Springer
- 3 Bejan, Adrian, 2016. Advanced Engineering Thermodynamics. John Wiley&Sons, Incorporated