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## MODULE DESCRIPTOR

### Module Title

Thermofluids 1

Reference	EN1702	Version	5
Created	July 2017	SCQF Level	SCQF 7
Approved	May 2006	SCQF Points	15
Amended	September 2017	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 which involves two laboratory based assignments.

**Component 2**

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

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

In order to pass the module students must achieve at least a grade D overall AND a minimum of 35% in the examination and coursework.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	70% and above
<b>B</b>	60-69%
<b>C</b>	50-59%
<b>D</b>	40-49%
<b>E</b>	35-39%
<b>F</b>	34% and below
<b>NS</b>	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