MODULE SPECIFICATION

Part 1: Information			
Module Title	Thermofluids		
Module Code	UFMFNS-15-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engineering Design & Mathematics		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description

Overview: The principles governing the flow of fluids and fluid dynamics are an essential part of an engineer's knowledge base, enabling them to design, solve and maintain a variety of problems that occur throughout engineering such as the design of efficient pumping systems, processing plant and heat exchange technologies.

The approach taken is to make sure that theory is underpinned by experiment and observation so that students can properly understand the mechanisms at work. The module is designed to provide a solid foundation of knowledge, with practical exercises that reinforce and will enable the extension to specialist knowledge in future years.

Educational Aims: Aim of this module is to introduce thermodynamics, heat transfer and fluid dynamics which underpin fundamental scientific methods and engineering applications.

Outline Syllabus: First Law of Thermodynamics
Systems, Energy, Processes, Properties and Thermodynamic Property Relationships
Non-Flow Energy Equation (NFEE)
Gas Laws
Non-flow Vapour Processes and Cycles

Basic Heat Transfer
Hydrostatics and Buoyancy
Dimensional Analysis
Incompressible flow

Teaching and Learning Methods: Teaching and learning methods will involve interactive lectures with formative feedback, hands-on laboratory experiments designed to promote self-learning and self-paced peer assisted work groups

Part 3: Assessment

The examination will be designed to ensure that students are able to demonstrate and apply their knowledge and understanding through engagement with problems and scenarios encountered throughout the module.

Specifically, questions will be based on experimental data alongside some traditional questions.

the resit assessment strategy is a written examination

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	100 %	Online Open book examination via controlled conditions using data obtained from experiments conducted independently throughout the Semester alongside some traditional questions
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	100 %	Online Open book examination via controlled conditions using data provided alongside some traditional questions

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	**Reference**
Describe and explain thermofluid principles and the associated methodology necessary to underpin, and enable appreciation of, relevant engineering applications (SM1b)	MO1
Apply practical and laboratory skills relevant to thermofluid processes (P3)	MO2
Demonstrate the ability to work with experimental technical uncertainty in a laboratory environment (P8)	MO3

Contact Hours

Independent Study Hours:

Independent study/self-guided study	108
Total Independent Study Hours:	108

	Scheduled Learning and Teaching Hours:	
	Laboratory work	6
	Lectorials	24
	Tutorials	12
	Total Scheduled Learning and Teaching Hours:	42
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:*	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Mechanical Engineering MEng 2020-21