



MODULE SPECIFICATION

Part 1: Information			
Module Title	Thermofluid Systems		
Module Code	UFMFTA-15-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Contributes towards			
Module type:	Standard		
Pre-requisites	Heat Transfer, Power and the Environment 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: Compressible flow machines (fans, compressors). Radial and axial flow machines. Limitations of design process. Improving existing designs.</p> <p>Compressible flow machines (Pumps), selection of pumps, operational issues.</p> <p>Refrigeration (Vapour compression and absorption), primary and secondary refrigerants, heat pumps.</p> <p>Air conditioning, psychrometry, mixing of air-streams.</p> <p>Heating and ventilation systems, combined heat and power (CHP), energy recovery.</p> <p>Teaching and Learning Methods: Contact: 36 hours</p>

STUDENT AND ACADEMIC SERVICES

Assimilation and development of knowledge: 75 hours

Problem solving: 11 hours

Examination preparation: 28 hours

Total: 150 hours

Large group lecture supported by small group tutorial sessions. Additional laboratory demonstrations may be used to illustrate certain points. This material may be provided as video or likewise if student numbers are too high for laboratory visits. Study time outside of contact hours will be spent on going through exercises and example problems.

Scheduled learning includes lectures, tutorials\lab sessions.

Independent learning includes hours engaged with essential reading, assignment preparation and completion.

Part 3: Assessment

Assessed by end of year exam (100%).

This subject matter is mainly analytical in nature and therefore amenable to assessment through examination. This ensures that the assessment is of individual ability, which would be difficult to assure in a coursework component.

First Sit Components	Final Assessment	Element weighting	Description
Examination - Component A	✓	100 %	Examination (3 hours)
Resit Components	Final Assessment	Element weighting	Description
Examination - Component A	✓	100 %	Examination (3 hours)

STUDENT AND ACADEMIC SERVICES

Part 4: Teaching and Learning Methods																			
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <table border="1"> <thead> <tr> <th colspan="2" style="text-align: center;">Module Learning Outcomes</th> </tr> </thead> <tbody> <tr> <td>MO1</td> <td>Explain operating principles underlying fluid machinery</td> </tr> <tr> <td>MO2</td> <td>Use a system approach and cost drivers for the selection of fluid machinery</td> </tr> <tr> <td>MO3</td> <td>Explain the energy use in fluid machines and its relationship to design</td> </tr> <tr> <td>MO4</td> <td>Demonstrate a fundamental knowledge of refrigeration, air conditioning, heating and ventilation techniques</td> </tr> <tr> <td>MO5</td> <td>Select and apply the computational techniques and mathematics underpinning the analysis of thermofluid systems</td> </tr> </tbody> </table>	Module Learning Outcomes		MO1	Explain operating principles underlying fluid machinery	MO2	Use a system approach and cost drivers for the selection of fluid machinery	MO3	Explain the energy use in fluid machines and its relationship to design	MO4	Demonstrate a fundamental knowledge of refrigeration, air conditioning, heating and ventilation techniques	MO5	Select and apply the computational techniques and mathematics underpinning the analysis of thermofluid systems						
Module Learning Outcomes																			
MO1	Explain operating principles underlying fluid machinery																		
MO2	Use a system approach and cost drivers for the selection of fluid machinery																		
MO3	Explain the energy use in fluid machines and its relationship to design																		
MO4	Demonstrate a fundamental knowledge of refrigeration, air conditioning, heating and ventilation techniques																		
MO5	Select and apply the computational techniques and mathematics underpinning the analysis of thermofluid systems																		
Contact Hours	<table border="1"> <thead> <tr> <th colspan="2" style="text-align: center;">Contact Hours</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Independent Study Hours:</td> </tr> <tr> <td style="text-align: center;">Independent study/self-guided study</td> <td style="text-align: center;">114</td> </tr> <tr> <td style="text-align: center;">Total Independent Study Hours:</td> <td style="text-align: center;">114</td> </tr> <tr> <td colspan="2" style="text-align: center;">Scheduled Learning and Teaching Hours:</td> </tr> <tr> <td style="text-align: center;">Face-to-face learning</td> <td style="text-align: center;">36</td> </tr> <tr> <td style="text-align: center;">Total Scheduled Learning and Teaching Hours:</td> <td style="text-align: center;">36</td> </tr> <tr> <td style="text-align: center;">Hours to be allocated</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: center;">Allocated Hours</td> <td style="text-align: center;">150</td> </tr> </tbody> </table>	Contact Hours		Independent Study Hours:		Independent study/self-guided study	114	Total Independent Study Hours:	114	Scheduled Learning and Teaching Hours:		Face-to-face learning	36	Total Scheduled Learning and Teaching Hours:	36	Hours to be allocated	150	Allocated Hours	150
Contact Hours																			
Independent Study Hours:																			
Independent study/self-guided study	114																		
Total Independent Study Hours:	114																		
Scheduled Learning and Teaching Hours:																			
Face-to-face learning	36																		
Total Scheduled Learning and Teaching Hours:	36																		
Hours to be allocated	150																		
Allocated Hours	150																		
Reading List	<p>The reading list for this module can be accessed via the following link: https://uwe.rl.talis.com/modules/ufmfta-15-3.html</p>																		