



MODULE SPECIFICATION

| Part 1: Information | | | |
|---------------------------|--|--------------------|-------------------------------------|
| Module Title | Thermofluid Systems | | |
| Module Code | UFMFTA-15-3 | Level | Level 6 |
| For implementation from | 2019-20 | | |
| 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 | | |
| Module type: | Standard | | |
| Pre-requisites | Heat Transfer, Power and the Environment 2019-20 | | |
| 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> <p>Assimilation and development of knowledge: 75 hours</p> <p>Problem solving: 11 hours</p> |

STUDENT AND ACADEMIC SERVICES

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) |

Part 4: Teaching and Learning Methods

| | | |
|-------------------|--|-----|
| Learning Outcomes | On successful completion of this module students will achieve the following learning outcomes: | |
| | Module Learning Outcomes | |
| | Explain operating principles underlying fluid machinery | MO1 |
| | Use a system approach and cost drivers for the selection of fluid machinery | MO2 |
| | Explain the energy use in fluid machines and its relationship to design | MO3 |
| | Demonstrate a fundamental knowledge of refrigeration, air conditioning, heating and ventilation techniques | MO4 |
| | Select and apply the computational techniques and mathematics underpinning the analysis of thermofluid systems | MO5 |
| Contact Hours | Independent Study Hours: | |
| | Independent study/self-guided study | 114 |

STUDENT AND ACADEMIC SERVICES

| | | |
|--------------|---|-----|
| | 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><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ufmfta-15-3.html</p> | |

Part 5: Contributes Towards

This module contributes towards the following programmes of study: