



MODULE SPECIFICATION

| Part 1: Information | | | |
|---------------------------|----------------------------------------|--------------------|-------------------------------------|
| Module Title | Advanced Powertrain Technologies | | |
| Module Code | UFMF8E-15-M | Level | Level 7 |
| 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 Engin Design & Mathematics | | |
| Contributes towards | | | |
| Module type: | Project | | |
| Pre-requisites | None | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

| Part 2: Description | |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>Educational Aims: In this module you will examine powertrain technologies in more depth.</p> <p>Outline Syllabus: You will learn about established conventional engine technologies, such as:</p> <ul style="list-style-type: none"> - Forced induction systems - Emissions control systems - Modern fuel injection systems <p>As well as established engine technologies you will study emerging and future engine technologies, such as:</p> <ul style="list-style-type: none"> - New engine cycles - Hybrid technology - Electric vehicles |

STUDENT AND ACADEMIC SERVICES

Teaching and Learning Methods: Teaching and learning of conventional powertrains technology will be led by the lecturer, supported with lecture material.

Learning of unconventional powertrains will be facilitated by the lecturer, but led by the students. The students will be expected to conduct self-paced research using peer reviewed sources.

Part 3: Assessment

The module is examined through individual assessment. The students will demonstrate that they have met the learning outcomes through analysis of conventional technology and research and investigation into future engine technologies.

Component A. The students will write a report with two parts.

Part 1: Will be an analysis of data collected from a practical lab based experiment on a real engine. They are required to demonstrate their knowledge and understanding of advanced powertrain technology by gathering live data, analysing the data and drawing conclusions.

Part 2: The students will need to identify a significant research project related to advanced powertrain technology and conduct a feasibility study to assess its suitability. The written assignment is designed to assess the students' ability to critically evaluate and analyse data based on a brief study that the student has conceived. It also includes evaluation of their competency to identify an issue/research need and design a test plan to investigate that issue/need.

Resit strategy: The resit strategy will be as follows:

Component A: Will provide the individual student with the opportunity to rework the written assignment, including collection of new data (if appropriate)

| First Sit Components | Final Assessment | Element weighting | Description |
|----------------------|------------------|-------------------|-----------------------------|
| Report - Component A | ✓ | 100 % | Written report (5000 words) |
| Resit Components | Final Assessment | Element weighting | Description |
| Report - Component A | ✓ | 100 % | Written report (5000 words) |

Part 4: Teaching and Learning Methods

| | | |
|-------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Learning Outcomes | On successful completion of this module students will be able to: | |
| | | Module Learning Outcomes |
| | MO1 | Design and undertake investigations to address an issue/research need in the field of powertrain technology |
| | MO2 | Apply both analytical and practical methods to the analysis of powertrain engineering problems |
| | MO3 | Demonstrate and critically evaluate current theoretical and experimental technologies through use of professional literature. |
| | MO4 | Act with initiative in decision making within professional and given guidelines |
| | MO5 | Communicate effectively using professional engineering terms. |

STUDENT AND ACADEMIC SERVICES

| | | |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Contact Hours | 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><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ufmf8e-15-m.html</p> | |