



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Research Investigation, Planning and Methods for Change		
Module Code	UFMFYA-15-M	Level	Level 7
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	Professional Engineering [Sep][FT][Frenchay][1yr] MSc 2018-19 Robotics [Jan][PT][Frenchay][2yrs] MRes 2018-19 Engineering [Sep][FT][Frenchay][1yr] MRes 2018-19 Robotics [Sep][FT][Frenchay][1yr] MRes 2018-19 Robotics [Sep][PT][Frenchay][2yrs] MRes 2018-19 Robotics [Jan][FT][Frenchay][1yr] MRes 2018-19 Engineering [Jan][PT][Frenchay][2yrs] MRes 2018-19 Engineering [Jan][FT][Frenchay][1yr] MRes 2018-19 Engineering [Sep][PT][Frenchay][2yrs] MRes 2018-19		
Module type:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

**Part 2: Description**

**Educational Aims:** This module is designed to introduce students to various approaches to research methodology in an engineering and technology environment. It will develop the ability to formulate research proposals, select appropriate methods of analysis and prepare and present research outcomes.

**Outline Syllabus:** Key topics covered include:

The Research Process; theory and practical implications in an industrial environment including action and case study research.

Selection and identification of an appropriate industrial related project and the resultant identification and definition of research objectives, formulation of research questions and hypotheses.

Identification of the issues and barriers to change in the industrial context.

Review of world best practice in the research topic identified including Relevant Literature and Existing Research: Literature Searches; Effective Use of the Internet and library materials, and organisation of material.

Risk assessment and management, Planning and Budgeting.

The Research Proposal, Research Strategy and Project Plan.

Ethical considerations for researchers.

Issues of reliability, validity and generalisability for researchers

Features of Qualitative and Quantitative Data

Collection of Primary Data: Experimental Design, Survey Methods, Sampling Design and Procedure.

Analysis of quantitative data; an overview of statistical procedures.

Use of secondary data in the research process.

Collection and Analysis of Qualitative Data; Interviewing and Observation Methods.

Communicating Results Effectively: Dissertation Structure and Presentation.

Search techniques, literature abstraction and the preparation of a literature review.

Understanding plagiarism, copyright and intellectual property.

Preparation of a research paper.

**Teaching and Learning Methods:** The module content will be delivered through distance learning materials on Blackboard and/or a series of Lectures and Tutorials, or equivalent work-based or distance learning opportunities, which will enable discussion/critique and relevance of the topics covered in the lectures and/or support material (equivalent of 35 hours contact time). Throughout this module emphasis will be placed on research in the industrial discipline area and preparation for the dissertation project. To support this detailed guidance regarding the reading and learning strategy will be provided through the workshop and/or via Blackboard.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

## STUDENT AND ACADEMIC SERVICES

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make.

### Part 3: Assessment

This is a short, intensive module, normally taught in a 3 day session followed by a 2 day session nearer the commencement of the final project. There will be a presentation from each student, to lead them into the actual project proposal, normally carried out within the 2 day session. The project report is to be submitted after approximately 8 weeks after the completion of the module. The project proposal based on a project agreed with an academic supervisor and/or a project in the student's workplace/their previous professional or personal experience, so long as it appropriate. The proposal will require demonstration of independent learning of research methods and practice and critical reflection of their work both in the classroom and during the assignment period outside the classroom. A mix of general and individual written feedback will be provided. The word-length of the proposal is not relevant as its content will be judged on quality of content and conciseness of expression in order to maximise communication effectiveness, but will normally be expected to be around 3000 to 5000 words.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component A	✓	100 %	Research proposal
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component A	✓	100 %	Research proposal

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>		
Learning Outcomes	On successful completion of this module students will be able to:	
	<b>Module Learning Outcomes</b>	
	MO1	Demonstrate understanding of the dynamics of research and associated methodologies.
	MO2	Investigate and evaluate both qualitative and quantitative research methods in an industrial context.
	MO3	Analyse and interpret research findings and their application to industry, demonstrating the use of various tools in research.
	MO4	Justify selection of particular research techniques adopted.
	MO5	Critically analyse background research papers in relation to their chosen area.
	MO6	Select or create an appropriate design of study (where relevant), evaluating the required techniques and reflecting upon the reasons for the choices made.
	MO7	Derive a change implementation plan from the research findings.
Contact Hours	<b>Contact Hours</b>	
	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	115
	<b>Total Independent Study Hours:</b>	115
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	35
	<b>Total Scheduled Learning and Teaching Hours:</b>	35
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/modules/ufmfya-15-m.html">https://uwe.rl.talis.com/modules/ufmfya-15-m.html</a></p>	