**Module Specification**

# Robotics Project Dissertation

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## Contents

# Part 1: Information

**Module title:** Robotics Project Dissertation

**Module code:** UFMEYN-120-M

**Level:** Level 7

**For implementation from:** 2023-24

**UWE credit rating:** 120

**ECTS credit rating:** 60

**Faculty:** Faculty of Environment & Technology

**Department:** FET Dept of Engineering Design & Mathematics

**Partner institutions:** None

**Field:** Engineering, Design and Mathematics

**Module type:** Module

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

# Part 2: Description

**Overview:** Not applicable

**Features:** Not applicable

**Educational aims:** See Learning Outcomes

**Outline syllabus:** The project module involves a critical study of recent developments in the chosen field and will result in the development and validation of a practical component or artefact that may be a method or a model, a specification, a

design document, a software implementation or any other practical and usable deliverable. The production of this deliverable should involve an organized 'engineering' approach or methodology and a substantial element of originality. It is expected that the deliverable will be validated or proved and that the process by which it is produced will be evaluated critically and future work considered.

A list of possible dissertation titles offered by academic staff will be published on a regular basis every year. Students will be expected to contact supervisors for more information, to help in their choice. Students are encouraged to devise their own dissertation subject where possible and the responsible staff ensuring that the subject fits within the criteria for a Masters by Research level Dissertation. An initial dissertation proposal will be submitted and evaluated for formative assessment purposes only. Guidance will be provided through the consultations with the project supervisor or, in some cases, supervisory team of two or more academics and/or industrial collaborators. Regular meetings will be arranged by the supervisor/supervisory team to support the student's progress. Advice on the use of library and on-line resources will also be given.

## Part 3: Teaching and learning methods

**Teaching and learning methods:** This is a project module which seeks to ensure that students become autonomous learners. Based on the student chosen topic and/or methodology and in consultation with the module leader, he/she will be allocated a personal supervisor. The student plans a series of meetings with the supervisor and presents his project plan. The supervisory sessions require some preparation time which might include preparing design concepts for discussions, making content plans for the dissertation chapters, drafting the methodological or practical issues at stake, discussing state of the art as reported in the relevant literature or preparing an experiment setup for demonstration. The student should also compile a list of questions prior to a supervisory meeting.

Further refining the submitted proposal topic in conjunction with an appropriate supervisor to build on previous work done in the chosen research area.

Student-centred work and research of advanced theoretical principles and methods under appropriate staff supervision.

Supervisory sessions where research results will be discussed and guidance will be given by the supervisor.

Critical appraisal of the different paradigms for the focused field of study, and to selection and application of appropriate research methods and techniques to this area of focus.

Guided research and production of a highly focused dissertation in line with the negotiated and refined masters proposal.

**Module Learning outcomes:** On successful completion of this module students will achieve the following learning outcomes.

**MO1** An area of robotics technology which is at the forefront of professional and/or academic practice

**MO2** Current ethical issues of robotics, especially in human-centered applications

**MO3** Current research, contemporary problems and/or new insights in areas of robotics and intelligent systems in relation to their research

**MO4** Methodologies and techniques applicable to chosen research and, where appropriate, proposed new hypotheses and solutions

**MO5** Critical analysis and evaluation of current research, contemporary problems in areas of robotics and intelligent systems

**MO6** Generating clear research question or hypothesis

**MO7** Methodological rigour in applying appropriate methods and techniques for problem analysis and investigation

**MO8** Practical understanding of how techniques of research and enquiry are used to create and to interpret knowledge within the professional practice of the discipline

**MO9** Synthesizing data from relevant sources to produce meaningful and contextually relevant information and/or new insights and constructing an appropriate research methodology

**MO10** Ability to adapt skills or develop new skills for new situations and scenarios

**MO11** Ability to devise innovative solutions to the research area under investigation, integrate or devise systems or models using existing technologies and to present these solutions effectively

**MO12** Ability to exercise initiative and personal responsibility in professional practice

**MO13** Competence in applying appropriate techniques and in interpreting the results

**MO14** Problem Solving – independent learning ability, making professional use of others when appropriate

**MO15** Autonomy by developing independent and self-critical learner

**MO16** Communication by communicating results clearly to specialist and non-specialist audiences

**MO17** Group working either as a group member or a leader. Can clarify tasks and use the capacities of group members

**MO18** Learning resources by developing awareness of professional literature

**MO19** Management of information by independent learning ability to develop new skills for continuing professional development

**MO20** Self evaluation and self-management

**Hours to be allocated:** 1200

**Contact hours:**

Independent study/self-guided study = 1200 hours

Total = 1200

**Reading list:** The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ufmeyn-120-m.html

# Part 4: Assessment

**Assessment strategy:** Research Review and Presentation:

The Research Review will form the framework for the dissertation. This will include a critical overview of relevant literature and proposed design/methodology concept. A word count of approximately 3000 is suggested for this document.

The Research review will take place after submission of the portfolio of research. The presentation will be approximately 20 minutes long, followed by 10 minutes questions posed by the student's peers and staff.

The Dissertation and Viva Voce:

The dissertation will normally be of 20,000 words in length. The following are a list of requirements for the presentation of your dissertation:

Identification of relevant issues for investigation;

Appropriateness of research method(s) to the investigation;

Level of conceptual and/or technical difficulty;

Depth, breadth and level of critical analysis of secondary research;

Collection and use of primary evidence;

Coherence of argument, logic and quality of conclusions (specific and general);

Quality of writing and presentation;

Awareness of any related ethical issues;

Accuracy and completeness of citation and listing of references;

Critical appraisal of the research process and outcome.

A viva voce (oral) examination will normally be carried out by the academic supervisor and a second internal marker (assessor) and enables the student's understanding of the area of work and the significance of the results obtained to be determined. It also gives an opportunity for the student to explain further aspects of the work not fully clear from the dissertation. This examination normally lasts between 60 and 120 minutes and is normally held at University. Examiners have the right to ask questions on any aspect of the dissertation, however, areas which are usually covered by
questioning during the examination include:

the ideas and assumptions in the research;

the experimental work;

the results and their interpretations;

which parts of the thesis may not be published if covered by a confidentiality agreement.

**Assessment tasks:**

**Portfolio** (First Sit)
Description: Research review  (3000 words) and presentation (20 minutes followed by 10 minutes Q and A)
Weighting: 20 %
Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO15, MO16, MO17, MO18, MO19, MO2, MO20, MO3, MO4, MO5, MO6, MO7, MO8, MO9

**Dissertation** (First Sit)

Description: Dissertation and viva voce (60-120 minutes)

Weighting: 80 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO15, MO16, MO17, MO18, MO19, MO2, MO20, MO3, MO4, MO5, MO6, MO7, MO8, MO9

**Portfolio** (Resit)

Description: Research review  (3000 words) and presentation (20 minutes followed by 10 minutes Q and A)

Weighting: 20 %

Final assessment: No

Group work: No

Learning outcomes tested:

**Dissertation** (Resit)

Description: Dissertation and viva voce (60-120 minutes)

Weighting: 80 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

# Part 5: Contributes towards

This module contributes towards the following programmes of study: