



Module Specification

Dissertation by Research and Development

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Part 1: Information

Module title: Dissertation by Research and Development

Module code: UFCFUD-60-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 60

ECTS credit rating: 30

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Field: Computer Science and Creative Technologies

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: Students are expected to carry out an in-depth survey of relevant literature to identify a focus for their study that contributes to existing research in the field. The primary research will involve the development of a software-intensive

system. The written dissertation should make clear how the primary research was designed and conducted. Discussion of the outcomes of primary research should be clearly related to existing literature. The body of the dissertation should be supplemented by a critical review of key aspects of the research and development processes.

Initially, students will be supported in their transition to researchers by a variety of means including a short series of seminars delivered by one or more experts in relevant research methods. During this period the students will develop a short presentation outlining the problem or opportunity they will be addressing, their proposed solution approach, the research methods they plan to use, and their overall plan. Then they will develop an in-depth proposal for their dissertation.

Around this time an individual supervisor will be identified for each student. The student's individual supervisor and the research methods expert(s) will direct him/her to the extensive materials available from the UWE Research Observatory, currently (May 2012) available at <http://ro.uwe.ac.uk/RenderPages/RenderHomePage.aspx>. It will be part of the supervisor's and research methods expert's role to help the student navigate the available material and determine which are relevant to his/her dissertation. This will be a particularly important part of the supervisory process as the research observatory materials draw upon a range of sources and have many contributors.

Following the writing of the proposal, it will be part of the supervisor's role to continue to help the student to navigate the available material and determine which are relevant to his/her dissertation. The supervisors will work with their students to confirm or modify the selected research methods, to guide them in the choice of a software development method appropriate to their work and to advise on the writing of the dissertation report.

Part 3: Teaching and learning methods

Teaching and learning methods: Following the research methods phase, students will confirm a domain of interest with a supervisor. Students will then normally be expected to spend approximately 450 hours working, largely independently, on the development of their dissertation. It is expected that students will produce a software-intensive system in the course of their studies; in some instances this system might include hardware components.

Although a detailed process to follow is not prescribed, it is expected that all of the following activities will be performed:

Researching a domain of interest

Eliciting requirements

Researching related aspects

Designing, programming and testing a system to meet the stated requirements

Evaluating the utility of the software/hardware system

Further develop the implemented software/hardware system

Critically evaluating all aspects of the process

Writing up the project in a dissertation report (15,000 words)

During the first phase of the dissertation, a research methods expert will conduct a series of seminars with the students. Thirty hours of contact time will be scheduled, the equivalent of a teaching week.

In the second phase, students will be allocated a dissertation supervisor with whom they will meet to plan, discuss, and monitor the progress of their work. Meetings may take place face-to-face and/or virtually. The student and supervisor will negotiate the appropriate type and number of meetings, but there will be at least twelve hours of contact time.

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

MO1 Demonstrate mastery of a complex and specialised area of knowledge and skills appropriate to the computing domain

MO2 Address a research problem using a solution-based approach involving a non-trivial software-intensive system

MO3 Demonstrate an understanding of current theoretical and methodological approaches to the development of a substantive software-intensive system

MO4 Conduct and write up academic research at a level appropriate to Masters credit

MO5 Synthesise and critically evaluate data from multiple sources

MO6 Evaluate the approach taken in undertaking primary and secondary research

MO7 Explore and understand the issues of ethics, validity, trustworthiness and reliability in research

MO8 Work independently to plan and manage a complex computing research project over an extended period of time, and complete it by a given deadline

Hours to be allocated: 600

Contact hours:

Independent study/self-guided study = 558 hours

Face-to-face learning = 42 hours

Total = 600

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufcfud-60-m.html) via the following link <https://uwe.rl.talis.com/modules/ufcfud-60-m.html>

Part 4: Assessment

Assessment strategy: At both first sit and resit, the module will be assessed by a report and a demonstration of the software-intensive system that has been developed. The assessment of the report will be both in terms of its content (e.g. whether appropriate and sufficient research has been carried out, whether the design meets its requirements, and so on), and also of the expression of its content (e.g. whether it is well-structured, well written, makes appropriate use of diagrams, employs an appropriate citation system, and so on). The demonstration will give the

student the opportunity to showcase some of the finer details of their systems and for assessors to discuss with the student anything that was not made clear in the report.

Assessment tasks:**Report (First Sit)**

Description: Dissertation report on development and significance of a software-intensive system (10000-12000 words).

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Presentation (First Sit)

Description: Viva demonstrating substantive software-intensive system

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO8

Report (Resit)

Description: Dissertation report on development and significance of a software-intensive system (10000-12000 words).

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Presentation (Resit)

Description: Viva demonstrating substantive software-intensive system

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO8

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Software Engineering [Sep][PT][Frenchay][2yrs] - Not Running MSc 2022-23