



Module Specification

Mathematical Sciences Project

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Part 1: Information

Module title: Mathematical Sciences Project

Module code: UFMFUV-30-3

Level: Level 6

For implementation from: 2022-23

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Engineering, Design and Mathematics

Module type: Project

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The Mathematical Sciences Project module provides the opportunity for a student to undertake a detailed individual research project, demonstrating subject knowledge, research and project management skills.

The project will involve a student from a wide range of possible mathematical sciences topics in applied and pure mathematics, statistics and operational research

and may result from a student's industrial work, from personal interest and experience, or from the university.

Learning is predominantly through independent, self-directed study, with the support of a project advisor and the module leader. It is expected that students will develop a range of skills as their project activities develop, from specialist technical skills through to transferable skills.

Features: Module Entry Requirements: 80 credits at Level Five or above.

Educational aims: The aim of this module is to provide students with the opportunity to undertake an in-depth individual investigation in Mathematics, Statistics or Operational Research (these areas are abbreviated to 'Mathematics' in what follows).

Outline syllabus: The particular mathematical syllabus that is followed depends on the topic and on the investigative path followed by the particular student.

In addition, the following topics are delivered as a series seminars throughout the year:

Research in Mathematics:

The geography of Mathematics.

Tools for research.

The study and evaluation of mathematical literature.

Communicating Mathematics:

The process of academic writing.

Mathematical language and environments.

Report writing skills.

Part 3: Teaching and learning methods

Teaching and learning methods: The origin of the investigation is the designated personal project file: this is a collection of documents (possibly a single document)

assembled by the student's project adviser.

Each document in a given personal project file might be one of the following types (but other possibilities could also arise): a chapter in a textbook or in a monograph; a journal article; an account in a conference proceedings; a statistical report; a data set.

The role of the adviser is to provide guidance and to monitor progress. The student spends the first third of Semester One undertaking a study and critical evaluation of the document(s) in the designated personal project file.

Scheduled contact is either of the one-to-one type, where the student and their adviser meet, or of the group workshop type, where the general syllabus topics are discussed and where occasional group project activities take place.

Self-study involves the student's engaging with the study and evaluation of their personal project file, and subsequently with all the various aspects of their individual project investigation.

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

MO1 Synthesise information from mathematical sciences or mathematics education literature.

MO2 Lead a personal investigative or work-based project in a professional fashion.

MO3 Use appropriate software to create a mathematical sciences report, including notation, presentation of results, and referencing.

MO4 Communicate the findings of a mathematical investigation or of a work-based learning experience, both in written and in oral form.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 280 hours

Face-to-face learning = 20 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/7D1561BE-B116-9C36-BCCD-008C1FAA290A.html?draft=1&lang=en-US&login=1) via the following link <https://rl.talis.com/3/uwe/lists/7D1561BE-B116-9C36-BCCD-008C1FAA290A.html?draft=1&lang=en-US&login=1>

Part 4: Assessment

Assessment strategy: Component A: there are two separate elements, viz., Presentation (15%) and Report (85%).

First sit:

The presentation, submitted about two fifths of the way through TB1, is composed as follows: critical evaluation of the document(s) that constitute the designated personal project file; description of the development of the project concept, progress and implementation plan. The purpose of this element is to provide early feedback concerning the quality of initial work undertaken and planning. The report, submitted at the end of TB2, is a coherent and substantial account of the process and results of the student's individual investigation.

Resit:

The report is a coherent and substantial account of the process and results of the student's individual investigation. The presentation is a summary of achievements in which the student provides an overview of their project journey, including technical aspects, development of key skills and reflection.

Assessment components:

Presentation - Component A (First Sit)

Description: Initial presentation (15 minutes) for students to explain project concept, motivation, preliminary progress and plan.

Weighting: 15 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1

Report - Component A (First Sit)

Description: Written report (40 pages) excluding appendices

Weighting: 85 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Presentation - Component A (Resit)

Description: Summary of achievements presentation (15 minutes) in which the student summarises their project journey, including technical aspects, development of key skills and reflection.

Weighting: 15 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1

Report - Component A (Resit)

Description: Written report (40 pages)

Weighting: 85 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mathematics [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Mathematics [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Mathematics {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19