

# ES98B-30 Predictive Modelling Group Project

**23/24**

**Department**

School of Engineering

**Level**

Taught Postgraduate Level

**Module leader**

Peter Brommer

**Credit value**

30

**Module duration**

25 weeks

**Assessment**

100% coursework

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

Predictive modelling group project with training in key skills and collaborative writing

### Module aims

The module aims to equip students with the research skills necessary to support masters' level learning in predictive modelling.

In addition, this module will provide students with the professional and team skills to support the course and their career.

### Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Research Methods:

- Programming

- Research Data Management
- Collaborative Writing
- Documentation
- Version control

Professional Skills:

- Ethics and Sustainability
- Avoiding Plagiarism
- Health and Safety
- Project Management
- Reflective Writing

## **Learning outcomes**

By the end of the module, students should be able to:

- Create a complex piece of predictive modelling research software implementing methods and using software design principles introduced in previous modules in the course, addressing a cross-discipline research computing challenge.
- Plan and manage the predictive modelling software project from the specification phase to a deliverable outcome, including documentation.
- Formulate and quantify the uncertainty in the output of the predictive modelling code, thus giving an measure of the reliability of a computed quantity.
- Demonstrate the ability to work as a member of a team to achieve shared objectives within the scope of the project and monitor and adjust a personal programme of work on an ongoing basis.
- Evaluate: regulatory requirements including IPR and codes of practice, industry/sector standards; risk (including health and safety, environmental and commercial); sustainability; ethics, diversity, cultural, societal considerations.
- Demonstrate advanced communication and documentation skills, both within the group and for the benefit of a future software user.

## **Research element**

Development and implementation of a predictive modelling problem.

## **Interdisciplinary**

The programme will recruit students with backgrounds across the physical and mathematical sciences, including engineering, and will provide an interdisciplinary perspective on predictive modelling. The project groups in this module will bring together students of different educational background.

## **Subject specific skills**

- Collaborative writing of specification and documentation.
- Programming skills.
- Software implementation of predictive modelling problem.
- Understanding of ethical issues, plagiarism, health and safety.

## Transferable skills

- Team working.
- Project planning and management.
- Presentation skills.
- Ability to reflect on own performance.

## Study

### Study time

Type	Required
Lectures	10 sessions of 1 hour (3%)
Seminars	(0%)
Tutorials	(0%)
Project supervision	10 sessions of 1 hour (3%)
Practical classes	(0%)
Supervised practical classes	(0%)
Online learning (independent)	10 sessions of 1 hour 30 minutes (5%)
Other activity	2 hours (1%)
Private study	263 hours (88%)
Total	300 hours

### Private study description

Students are expected to contribute 263 further hours to the project (group meetings, private work, project planning and execution), in addition to the time for lectures and project supervision.

### Other activity description

Group presentations

### Costs

No further costs have been identified for this module.

# Assessment

You must pass all assessment components to pass the module.

## Assessment group A

	<b>Weighting</b>	<b>Study time</b>	<b>Eligible for self-certification</b>
<b>Assessment component</b>			
Group Predictive Modelling Project Specification	40%		No
Software Specification, Design Document, Workplan for Research Software Project (max. 10 pages). Including peer assessment.			
<b>Reassessment component</b>			
Individual Predictive Modelling Project Specification			No
Software Specification, Design Document, Workplan for Research Software Project (max. 10 pages).			
<b>Assessment component</b>			
Online tests	10%		Yes (extension)
On-line courses and tests in Ethics, Plagiarism, Health and Safety and Programming			
<b>Reassessment component is the same</b>			
<b>Assessment component</b>			
Predictive Modelling Group Project Portfolio	50%		No
Various Predictive Modelling Project related deliverables returned in the second part of the module: Project report (max 10 pages), Code, Tutorial and Documentation, Group Presentation (60 min), Individual Contribution Statement (500 words). Mark based on group and individual performance. Including peer assessment.			

**Weighting**

**Study time**

**Eligible for self-  
certification**

Reassessment component

Predictive Modelling Portfolio

No

Individual report + code + documentation of Predictive Modelling Project

### **Feedback on assessment**

Written comments and supervisor verbal feedback on project specification and portfolio.

Automated feedback for online tests.

Individual feedback on peer assessment and contribution statement.

Student support through advertised advice and feedback hours.

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## **Availability**

### **Courses**

This module is Core for:

- Year 1 of TESA-H1B1 Postgraduate Taught Predictive Modelling and Scientific Computing