ES98B-30 Predictive Modelling Group Project

24/25

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

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

	Weighting	Study time	Eligible for self-certification
Group Predictive Modelling Project Specification	40%		No
Software Specification, Design Document, Workplan for Research Software Project (max. 10 pages). Including peer assessment.			
Online tests	10%		Yes (extension)
On-line courses and tests in Ethics, Plagiarism, Health and Safety and Programming			
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.			

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.

Availability

Courses

This module is Core for:

- TESA-H1B1 Postgraduate Taught Predictive Modelling and Scientific Computing
    - Year 1 of H1B1 Predictive Modelling and Scientific Computing
    - Year 2 of H1B1 Predictive Modelling and Scientific Computing