ES98C-60 Individual Research Project

23/24

Department
>School of Engineering

Level
>Taught Postgraduate Level

Module leader
>Albert Bartok-Partay

Credit value
>60

Module duration
>45 weeks

Assessment
>100% coursework

Study location
>University of Warwick main campus, Coventry

Description

Introductory description

The dissertation and its accompanying viva is a platform for the student to engage in an independent research project, and to present and defend the results of the project.

Module aims

The student will conduct significant and novel research as an individual project, and present the background and findings in the form of a dissertation. The research question must address some aspect of modelling, resulting in new knowledge, methodology or understanding, accompanied by uncertainty quantification. The length of the report is expected to be 10,000-12,000 words or equivalent.

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.

Individual projects

Learning outcomes

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

- Formulate a research question, plan activities and assign resources.
- Demonstrate knowledge of state-of-the-art practices and methodologies in an area of predictive modelling as applied to one of the themes of the course, and a wide-ranging understanding of the context of these practices within the broader field.
- Create novel understanding, interpretation and prediction of the behaviour of a complex, open-ended problem through computational modelling, applicable to cutting-edge technology or fundamental research.
- Create or adapt, and then analyse, an appropriate computational model within robust scientific software, including means to acquire quantitative insight into the uncertainty and error bars associated with predictions it makes.
- Communicate of the results of this research to other researchers in related discipline; results to be defended in a viva voce examination by internal examiners who are experts in a related field of study.
- Take part in open-ended scientific debate with other researchers on topics broadly interpreted as predictive modelling

Research element

Research project within Predictive Modelling MSc course.

Subject specific skills

Quantitative skills
Problem solving skills
Programming skills
Data analysis

Transferable skills

Strategic planning skills
Writing and presentation skills
Research skills
Risk management
Time management

Study

Study time

Type	Required
Seminars	4 sessions of 1 hour (1%)
Project supervision	24 sessions of 1 hour (4%)
Other activity	228 hours (38%)
Private study	344 hours (57%)
Total	600 hours

Private study description

Literature review, research for project, data analysis.

Other activity description

Writing the dissertation, viva examination.

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
Assessment component			
Project proposal	20%		No
A plan for the research project formulating the aims and methodology. Planning for necessary time and resources for each task.			
Reassessment component is the same			
Assessment component			
Research Project Report and Viva Voce Examination	80%		No

	Weighting	**Study time**	**Eligible for self-certification**

A written report of the research project, complete with background information, description of methodology, results and discussion. The expected volume of the report is around 10000 words or 50 pages, or equivalent content, including: figures, tables, equations etc.

The project report is followed up by a viva voce examination, lasting approximately 45 minutes. A presentation of the work done during the research project, with a discussion to follow that examines the novelty and the individual contribution of the candidate to the results.

Reassessment component is the same

Feedback on assessment

Examiners report.

Availability

Courses

This module is Core for:

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