POSTGRADUATE DIPLOMA IN MATHEMATICAL MODELLING AND MACHINE LEARNING

Overview

NFQ Level 9, Major Award

Exit Award only

Students on the MSc (Mathematical Modelling and Machine Learning) (https://ucc-ie-public.courseleaf.com/programmes/mscmml/) programme who pass Part I but who fail to meet the requirements to proceed to Part II (see Marks and Standards (https://ucc-ie-public.courseleaf.com/general/marksandstandards/)), or who choose not to progress to Part II and exit the programme, will be conferred with the Postgraduate Diploma in Mathematical Modelling and Machine Learning.

Note: Students who have taken any of the listed modules in a previous degree must select alternative modules (subject to availability and timetabling) in consultation with the Programme Coordinator.

Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

Programme Requirements

Code	Title	Credits
Students take **60** credits as follows:		
Core Modules		
AM6004	Numerical Methods and Applications	5
AM6005	Nonlinear Dynamics	5
AM6007	Scientific Computing with Numerical Examples	10
AM6015	Computational Techniques with Networks	5
AM6016	Dynamic Machine Learning with Applications	5
AM6017	Complex and Neural Networks	5
AM6020	Open Source Infrastructure for Modelling and Big Data	5
CS6421	Deep Learning	5
EE6024	Engineering Machine Learning Solutions	5
ST4060	Statistical Methods for Machine Learning I	5
ST4061	Statistical Methods for Machine Learning II	5
Total Credits		**60**

Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

Programme Learning Outcomes

Programme Learning Outcomes for Postgraduate Diploma in Mathematical Modelling and Machine Learning (NFQ Level 9, Major Award)

On successful completion of this programme, students should be able to:

- Apply the basic concepts, theories, principles and practical methods of mathematical modelling and machine learning to analyse and solve theoretical and practical problems;
- Give clear and organized written and verbal explanations of ideas in the areas of mathematical modelling and machine learning;
- Critically discuss and evaluate the concepts and examples in several areas of mathematical modelling and machine learning;
- Use the given course materials and computer code to solve problems;
- Contribute effectively as members of project teams dealing with mathematical models and their computer implementation, including the delivery of oral presentations and written reports.