

MSC (ACTUARIAL SCIENCE) (NOT ON OFFER FOR 23/24)

Overview

The MSc in Actuarial Science is a full-time programme running for 12 months.

Postgraduate Diploma in Actuarial Science

Regulations regarding progression from Part I to Part II can be found in Marks and Standards (<https://ucc-ie-public.courseleaf.com/general/marksandstandards/>). Students who pass Part I but do not meet this requirement, or who choose not to progress to Part II, will exit the programme with the Postgraduate Diploma in Actuarial Science.

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 90 credits as follows - 75 credits of core modules and 15 credits of elective modules:		
Part I		
Students take 45 credits as follows:		
<i>Core Modules</i>		
ST6001	Theory of Annuities-Certain for Actuarial Science	10
ST6005	Life Contingencies for Actuarial Science	10
ST6015	Machine Learning Methods for Actuarial Applications	5
ST6017	Quantitative methods for Non-Life Insurance	5
ST6020	Actuarial Business & Financial Reporting Methods	5
ST6022	Survival Methods for Actuarial Science	5
ST6032	Stochastic Modelling Techniques	5
<i>Elective Modules</i>		
Select all modules from either List A or List B: ¹		15
List A (CS1 modules)		
ST6003	Probability & Mathematical Statistics for Actuarial Science (10)	
ST6018	Regression & Generalised Linear Model Techniques for Actuarial Science (5)	
List B (CM2 modules)		
ST6016	Applied Financial Risk Modelling and Analytics for Actuarial Science (5)	
ST6019	Application of Computational Methods in Actuarial Science and Risk Modelling (5)	
ST6023	Modelling & Risk Analysis for Actuarial Science (5)	
Part II		
Students take 30 credits as follows:		
<i>Core Modules</i>		
PA6007	Market Analysis Methods for Actuarial Science	10
ST6009	Application of Core Technical Research Methodologies in Actuarial Science	20
Total Credits		90

¹ **Note:** The Choice of electives must be agreed in advance with the programme co-ordinator.

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 MSc (Actuarial Science) (NFQ Level 9, Major Award)

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

- Demonstrate a knowledge of the theory of mathematical and statistical finance, actuarial finance methods, probability and statistical methods, survival models and market analysis as described by the syllabi of the first stage subjects of the Institute and Faculty of Actuaries;
- Describe the fundamental theories, models and principles of Actuarial Science and carry out a wide range of calculations involved in financial decision making, valuation and risk modelling;
- Summarize and communicate, in written and oral form, actuarial models and techniques and present such summaries to technical and non-technical audiences;
- Analyse problems of a quantitative nature, encountered in the insurance, pensions and financial industry, and construct solutions to such problems using the tools and skills of modern actuarial practice including the use of statistical and mathematical computer packages and the use of spread sheet and database programmes;
- Enter graduate or research careers in actuarial fields with the ability to significantly contribute to the financial services industry and moreover to society as a whole in using skills and education to identify, assess, manage and quantify uncertainty and risk in various situations;
- Demonstrate the competences, skills and leadership qualities which ultimately lead to the title of Actuarial Fellow.