

**The Objective** of this four year, full-time degree is to produce graduates with the ability to apply mathematical methods to the problems of the financial and insurance sectors. The application of such techniques has revolutionised many areas of these industries over the last fifteen years.

Students on this course can gain exemptions from all eight of the Core Technical examinations of the Institute and Faculty of Actuaries. The degree is fully accredited by the Institute and Faculty of Actuaries.

## Programme Summary

The course is of four years' duration and falls naturally into two halves. In the first four semesters (i.e. Years 1 and 2), the aim of the programme is to provide the student with a broad introduction to the main branches of modern mathematics and its applications, enabling students to make informed choices regarding their choice of specialist topics in the latter half of the course. In the second half (Years 3 and 4), the course concentrates on those areas of mathematics that may be applied to problems in finance, insurance and banking, and in particular in the methods of actuarial mathematics.

## Relevant Work Experience

Students on the degree have the opportunity of gaining experience as an employee in a commercial environment through DCU's work experience programme INTRA (Integrated TRaining). INTRA is a central feature of education at DCU and an integral part of most undergraduate and some postgraduate degree programmes. Students who are particularly interested in pursuing an actuarial career often take their work placement with a major insurance company or actuarial consultancy. Many students who wish to follow a career in finance or banking are placed with commercial or investment banks.

**Students from the BSc Actuarial Mathematics are required to complete an eight-month INTRA placement at the end of third academic year, from February to September inclusive.**

### Work Areas

- Life Assurance
- Insurance
- Investment and Commercial Banking
- Financial Analysis and Trading
- Business and Actuarial Consultancy
- Pensions
- Software Development
- Data Analytics

### Student Availability

Students are available for interview from October onwards. Please post vacancies on the *INTRA* online website at [www.intra.dcu.ie](http://www.intra.dcu.ie), or send details to:

*INTRA* Unit, Student Support & Development,  
Dublin City University,  
Glasnevin, Dublin 9, Ireland.  
Phone: 00 353 1 700 5514  
Fax: 00 353 1 700 5505  
Website: [www.dcu.ie/intra](http://www.dcu.ie/intra)



# BSc Actuarial Mathematics

## Year 1

Semester 1	Semester 2
Introduction to Microeconomics	Introduction to Microeconomics
Linear Mathematics 1	Linear Mathematics 2
Mathematical Concepts and Skills	Integral Calculus
Differential Calculus	Sequences and Series
Computing for Mathematics	Computing for Mathematics
	Probability 1

## Year 2

Semester 1	Semester 2
Calculus of Several Variables	Accounting 1
Numerical Methods	Differential Equations
Linear Algebra	Mathematics of Finance: An Introduction
Analysis	Probability 2
Statistics 1	Statistics 2

## Year 3

Semester 1	Semester 2
Accounting 2	<b>I N T R A</b>
Stochastic Modelling	
Financial Mathematics	
Actuarial Modelling	
Financial and Actuarial Data Analysis	

## Year 4

Semester 1	Semester 2
Financial Economics 1	Financial Economics 2
Risk Theory	Time Series
	Life Contingencies
<b>Optional</b> Coding and Cryptography	<b>Optional</b> Financial Engineering
Probability and Finance 1 & 2	Stochastic Finance
Simulation for Finance	Optimisation