BSc Actuarial Mathematics - INTRA Programme (DC126)

Objective

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.

Skills

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

— Trading

— Business and Actuarial Consultancy

— Pensions

— Software Development

— Data Analytics

Year 1	Year 2	Year 3	Year 4
Semester 1	**Semester 1**	**Semester 1**	**Semester 1**
Introduction to Microeconomics	Calculus of Several Variables	Accounting 2	Financial Economics 1
Linear Mathematics 1	Numerical Methods	Stochastic Modelling	Risk Theory
Mathematical Concepts and Skills	Linear Algebra	Financial Mathematics	**Optional Semester 1**
Differential Calculus	Analysis	Actuarial Modelling	Coding and Cryptography
Computing for Mathematics	Statistics 1	Financial and Actuarial Data Analysis	Probability and Finance 1 & 2
Semester 2	**Semester 2**	**Semester 2**	Simulation for Finance
Introduction to Microeconomics	Accounting 1		**Semester 2**
Linear Mathematics 2	Differential Equations		Financial Economics 2
Integral Calculus	Mathematics of Finance: An Introduction		Time Series
Sequences and Series	Probability 2		Life Contingencies
Computing for Mathematics	Statistics 2		**Optional Semester 2**
Probability 1			Financial Engineering
			Stochastic Finance
			Optimisation

INTRA