Department of Actuarial Mathematics and Statistics Programmes

HERIOT WATT UNIVERSITY

We were established in 1972 and are the oldest such department in the UK. We have since grown to become internationally recognised as a leading centre of actuarial and financial teaching and research.

We offer several MSc Programme for holders of strong Mathematical bachelors degrees' which allow you to specialise in your preferred area following graduation.

Programme	Overview of Content	Career outcomes / Typical destinations	Admission Requirements
MSc Actuarial Science	Programme offers exemptions from Subjects CT1-8 of the UK professional actuarial exams allowing you to complete all eight professional examinations within the 1 year programme.	Actuary and other Mathematics Graduate Careers	Good bachelors degree with strong Mathematical content.
MSc Actuarial Management	Programme offers exemptions from Subjects CA1, CA3 and the major ST Subjects, including the new ST9 of the UK professional actuarial exams allowing you to complete all the professional examinations within 1 year of completing the degree.	Actuary and other Mathematics Graduate Careers	A good bachelors or masters degree with a substantial actuarial content (such as a BSc or MSc in Actuarial Science), covering sufficient of the CT subjects of the Professional examinations.
MSc Financial Mathematics (offered jointly with the University of Edinburgh)	Covering the advanced mathematics that has revolutionised finance since the works of Black, Scholes and Merton in the early seventies, this programme is aimed at students who are passionate about mathematics and driven to make a career amongst the many and varied financial institutions throughout the world. It will provide an intensive training in the mathematical ideas and tools vital to the finance industry. By developing essential new mathematical concepts, especially in stochastic calculus, and placing the mathematics in the contexts of financial markets, derivative pricing and credit risk, the programme equips students for a range of exciting and potentially lucrative career opportunities	Quantitative analysis (valuing assets) in investment banks or fund managers. Progression onto a Doctoral degree	Minimum of UK upper second-class bachelors degree or equivalent in mathematics or a very substantially mathematical subject.
MSc Quantitative Financial Risk Management	Covers the methodology that is used by financial services firms to comply with regulation such as Basel II in banking and Solvency II in insurance. Has been partly modelled on the PRMIA PRM syllabus and also covers the ST9 enterprise risk management syllabus of the Actuarial Profession.	Financial Risk Management roles at banks, insurance companies, fund managers, consultancies and other financial services companies.	Good bachelors degree with strong mathematical content.
MSc in Quantitative Financial Engineering	Develops the skills and knowledge required by the modern investment and asset management industry focusing on relative value strategies and asset structuring. The emphasis is on developing a range of practical skills to reflect the need for practitioners to employ different techniques in the ever changing world of contemporary finance. Material is substantially based on PRIMIA syllabus for risk management and also covers the advanced derivative investment syllabus of the Actuarial Profession.	Asset management or structuring roles with fund managers or investment banks	Good bachelors degree with strong mathematical content and some background in derivative pricing.

More detailed information on all of our programmes and information on applying can be accessed via our website:

www.macs.hw.ac.uk

Distinctly Ambitious

www.hw.ac.uk

Meet our experts

PROFESSOR ANDREW ADAMS
is Director of the Centre for Finance and Investment; Associate of the Institute of Actuaries since 1982; experience in insurance, investment analysis and institutional sales with an investment bank; joined Heriot-Watt University from the University of Edinburgh in 2010; author of four books and over 25 research articles; awarded the inaugural Peter Clark Prize for Best Paper by the Institute of Actuaries in 2008.

ANDREW CAIRNS
is Professor of Financial Mathematics, a Fellow of the Faculty of Actuaries (1993) and a corresponding member of the Swiss Association of Actuaries. He is internationally renowned for his research and leadership in the field of quantitative risk management, particularly in the areas of pension-plan asset-liability modelling, and modelling and management of longevity risk. He played a key role in the development of the international CERA qualification (enterprise risk management) and its UK equivalent. He is Editor-in-Chief of ASTIN Bulletin – The Journal of the International Actuarial Association (IAA), and is a committee member of the ASTIN and AFIR Sections of the IAA. He gives regular invited talks around the world and is an adviser on longevity risk to the OECD.

DR TIM JOHNSON
joined Heriot-Watt in 2006 as the UK Research Council's Academic Fellow in Financial Mathematics. In the aftermath of the Crisis of 2008, Dr Johnson took a leading role in explaining the role of mathematics in the financial markets, appearing on TV, radio and in the press. He co-ordinated a number of submissions from the financial mathematics research community to the Science Minister, Chief Scientific Advisor to HM Government and the Financial Services Authority.

ANGUS MACDONALD
is Professor of Actuarial Mathematics and Head of the Department. He has been a Fellow of the Faculty of Actuaries since 1984, serving on Council from 1998-2007, and worked as an actuary in life insurance before joining Heriot-Watt University. He is Director of the Genetics and Insurance Research Centre; Editor of Annals of Actuarial Science; and author of over 45 research articles and many other works, presented widely internationally. He was awarded the David Garrick Halmstad Prize in 2005. He has taught in China, Russia and Eastern Europe.

ALEXANDER MCNEIL
is Professor and Director of the Scottish Financial Risk Academy. He is joint author of the book "Quantitative Risk Management: Concepts, Techniques and Tools", published by Princeton University Press in 2005. Interests lie in the development of mathematical and statistical methodology for integrated financial risk management and include extreme value theory (EVT), risk theory, financial time series analysis and the modelling of correlated risks. Professor McNeil is an honorary Fellow of the Faculty of Actuaries and a corresponding member of the Swiss Association of Actuaries.