Introduction to the University of Edinburgh Part of MSc Financial Mathematics

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MSc FiM - Key People at Heriot-Watt University

- Programme Director - Dr Matthias Fahrenwaldt, `m.fahrenwaldt@hw.ac.uk` .
- Programme Administrator - Mrs Rodi Amiridou, Room 1.12, Earl Mountbatten Building, macs-schooloffice@macs.hw.ac.uk. Rodi is responsible for all programme administrative matters.
- Your personal tutor at Heriot–Watt - individual to each of you.

MSc FiM - Key People at University of Edinburgh

- MSc FiM Liason - István Gyöngy, Room 5612 (JCMB),
  e-mail: i.gyongy@ed.ac.uk .
  Any academic matters for courses taught by University of Edinburgh.
- Programme Administrator - Miss Gemma Aitchison,
  Room 5211 (JCMB), Tel.: 0131 650 5386,
  e-mail: Gemma.Aitchison@ed.ac.uk .
  Any administrative matters for courses taught by University of Edinburgh.

MSc FiM University of Edinburgh Compulsory Courses

- Discrete Time Finance (10 credits)
- Stochastic Analysis in Finance (20 credits)

Find details on:
`https://teaching.maths.ed.ac.uk/main/postgraduate-taught/msc-programmes/finance/financial-mathematics`
and on `http://www.drps.ed.ac.uk/current/dpt/ptmscfinmalf.htm`
You can also find the timetable for each course this way.

MSc FiM UoE Optional Courses

You should register for a total of between 120 and 127.5 credits of taught courses (S1 and S2). MSc Dissertation is another 60 credits.
To register you inform HW Programme Administrator *Mrs Rodi Amiridou*, macs-schooloffice@macs.hw.ac.uk. She will then contact UoE on your behalf.

- Stochastic Control and Dynamic Asset Allocation (10 credits)
- Optimisation Methods in Finance (10 credits)
- Numerical Probability and Monte Carlo (10 credits)

Find details on: `http://www.drps.ed.ac.uk/current/dpt/ptmscfinmalf.htm`
You can also find the timetable for each course this way.

Stochastic Control and Dynamic Asset Allocation

- *Semester 2, Dr David Šiška*
- The course presents an introduction to control theory, to a very active area of research, both in pure and applied mathematics. The aim is to learn the basics of the mathematical theory, and to understand some real-world applications, primarily in finance and economics. It offers an opportunity to see the connections between different fields, (controlled dynamical systems, optimization, nonlinear PDEs), and the underlying ideas unifying them.
- Only take this course if you like Stochastic Analysis.
  Find details on:
  `http://www.drps.ed.ac.uk/current/dpt/cxmath11150.htm`

Numerical Probability and Monte Carlo

- *Semester 2, Dr Goncalo Dos Reis*
- Random number generation, basic Monte Carlo, variance reduction techniques, simulating Brownian paths, Strong and weak approximations of solutions to SDEs, Euler's approximations, Milstein's scheme, Order of accuracy of the approximations, Higher order schemes, accelerated convergence Weak approximations of SDEs via numerical solutions of PDEs Option price sensitivities (Greeks).
- There will be workshops and work with Matlab.
  Find details on:
  `http://www.drps.ed.ac.uk/current/dpt/cxmath11202.htm`

Optimization Methods in Finance

- *Semester 2, Dr Andreas Grothey*
- This course will demonstrate how recent advances in optimization modeling, algorithms and software can be applied to solve practical problems in computational finance. The focus is on selected topics in finance (such as arbitrage detection, risk-neutral probability measure, portfolio theory and asset management), where the models can be formulated as deterministic or stochastic optimization problems.
- There will be workshops and work with Matlab.
  Find details on:
  `http://www.drps.ed.ac.uk/current/dpt/cxmath11158.htm`

Communications

Make sure that you check

- your Heriot-Watt email account
- and your UoE email account

regularly.

One more thing: Special Topics 1

- *Semester 1*
- Several lectures on different topics by different lecturers.
- Choose one topic for essay / written project.
- Choose one (different) topic for presentation.
- Presentations will be done in small groups.
- Lecture times & deadlines will be announced in due course, lectures will most likely take place in November.

Questions?

Any questions?