UNIVERSITY OF OXFORD

Mathematical Institute

MSc in Mathematical & Computational Finance

The MSc program provides the foundations in applied mathematics, machine learning, and high-performance computing necessary for a successful career in modern finance. Courses are taught by the Mathematics faculty at the University of Oxford, which has the largest faculty group on mathematical finance in the world. The program provides unique opportunities for career development, including a 3-month internship with a financial company or a research dissertation.

Key highlights of the program:

- Students will acquire the mathematical and computational ability to develop models and calibrate them to large-scale financial datasets.
- 10-month, interdisciplinary program covering:
    - Finance (financial derivatives, fixed income, algorithmic trading)
    - Mathematics of financial models (stochastic calculus, stochastic control)
    - Machine learning (deep learning, optimisation, high-performance computing)
- 3-month internship with a financial company or a research dissertation
    - Examples of past companies include Santander, Morgan Stanley, Goldman Sachs, Barclays, and Blackrock.

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Job placement for MSc in Mathematical & Computational Finance

- Average starting salary: $117, 400
    - Highest of any mathematical finance masters program in Europe.
- Graduates have been recruited by prominent banks and hedge funds, including:
    - Barclays Capital, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan, KCG, Man-Group, Morgan Stanley, Nomura, Royal Bank of Scotland, Société Géneral, Squarepoint Capital, Systematica, UBS.
- Graduates work in banking (57%), asset management (36%), and fintech (5%).
- Many of our past students have progressed to PhD-level studies at leading universities worldwide.

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Curriculum for the MSc in Mathematical & Computational Finance

14 faculty members teach a unique set of courses designed to prepare students for a career in quantitative finance.

- Introductory Courses:
  - Partial Differential Equations
  - Probability
  - Statistics
  - Python
  - Financial Markets

- Core Lectures:
  - Financial Derivatives
  - Stochastic Calculus
  - Statistics & Financial Data Analysis
  - Numerical Methods
  - Fixed Income
  - Stochastic Control
  - Quantitative Risk Management
  - Deep Learning

- Elective Courses:
  - Advanced Monte Carlo Methods
  - Advanced Numerical Methods
  - Stochastic Volatility
  - Asset Pricing
  - Market Microstructure & Algorithmic Trading

- Programming Courses
  - Computational Finance in Python
  - Financial Computing I & II in C++

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How to Apply

- Applications must be submitted to the online Admissions website:
    - https://www.ox.ac.uk/admissions/graduate/courses/msc-mathematical-and-computational-finance
- The application process requires three letters of recommendation and includes an interview with one of the Mathematics faculty.
- Applicants typically hold a first-class undergraduate degree in mathematics or a related discipline.
- Additional information regarding the program is available at the website:
    - www.maths.ox.ac.uk/mscmf
- Questions regarding the program can be directed to:
    - Email: mathcompfin@maths.ox.ac.uk
    - Phone: +44 1865 280612