



Graduate Open **Events**

MSc Financial Risk Management

MSc Computational Finance

MSc Financial Technology

MSc Emerging Digital Technologies

Panel of academics and alumni





Graduate Open **Events**

MSc Financial Risk Management

Professor Fabio Caccioli, Programme Director



Overview of MSc Financial Risk Management

- Aims to meet growing demand for professionals who are highly skilled in quantitative risk management
- Graduates with deep knowledge of how the financial system works and of the technical skills required to build quantitative models
- In addition to the theoretical frameworks the MSc puts emphasis on data: Graduates learn how to handle data, how to extract information from data, how to use data to build models, validate them, and deploy them in practice.
- The programme is aimed at students with a first degree in mathematics, finance, economics, physics, computing or related subjects who wish to gain the skills necessary to work within quantitative risk management.

Core modules

- MATH0094 Market Risk and Portfolio Theory
- COMP0045 Probability Theory and Stochastic Processes
- COMP0048 Financial Engineering
- COMP0040 Data-driven Modeling of Financial Markets

Optional modules

- COMP0043 Numerical Methods for Finance
- COMP0049 Market Microstructure
- COMP0105 Financial Institutions and Markets
- COMP0163 Blockchain Technologies
- COMP0041 Applied Computational Finance
- COMP0046 Networks and Systemic Risk
- COMP0050 Machine Learning with Applications in Finance
- COMP0051 Algorithmic Trading
- COMP0075 Financial Market Modeling and Analysis
- STAT0022 Quantitative Modelling of Operational Risk and Insurance Analytics

Summer project

- During the summer students work on a project and write a dissertation on it
- This is typically done in collaboration with an industrial partner on a project of practical relevance proposed by the partner. More academic research intensive projects are also possible.
- This is a substantial part of the programme, as 1/3 of the credits are obtained through the summer project

Career outcomes

As a graduate of this programme, you'll have a breadth of employment options in the financial sector.

This includes investment banks, hedge funds and insurance companies, as well as central banks and financial authorities.

Graduates work for employers including Credit Suisse, Deutsche Bank, Deloitte, the China Development Bank and more.

Other graduates have gone on to work for companies such as Google and Bloomberg.

There are also opportunities in fintech companies



Graduate Open **Events**

MSc Computational Finance

Professor Guido Germano, Programme Director



Overview of the MSc Computational Finance

- The financial sector is becoming ever more sophisticated and has a great demand for experts with a blend of skills in mathematics, finance, statistics and computer science. The Computational Finance MSc brings these skills together in equal measure, producing talented quantitative analysts or 'quants' in just one year.
- Graduates are taught how the financial system works and are given the technical skills required to understand, develop and implement quantitative models.
- In addition to the theoretical framework, the MSc puts emphasis on coding and data: graduates learn how to handle data, how to extract information from data, how to use data to build models, validate them, and deploy them in practice.
- The MSc requires previous studies in a quantitative subject which includes exams in mathematics: at least calculus and linear algebra, possibly also differential equations, probability, statistics, econometrics and similar. The undergraduate degrees are typically in mathematics, statistics, physics, engineering, computer science (with exams in mathematics), economics or finance.

Core modules

- COMP0048 Financial Engineering
- COMP0043 Numerical Methods for Finance
- COMP0047 Data Science
- COMP0050 Machine Learning with Applications in Finance

Optional modules

- COMP0045 Probability Theory and Stochastic Processes
- COMP0049 Market Microstructure
- COMP0105 Financial Institutions and Markets
- COMP0163 Blockchain Technologies
- MATH0094 Market Risk and Portfolio Theory
- COMP0041 Applied Computational Finance
- COMP0046 Networks and Systemic Risk
- COMP0051 Algorithmic Trading
- COMP0075 Financial Market Modelling and Analysis
- COMP0120 Numerical Optimisation
- **COMP0162 Advanced Machine Learning in Finance**

Summer project

COMP0077 MSc Computational Finance Summer Project

- From mid June to mid September students work on a project and write a dissertation about it.
- This is typically done in collaboration with an industrial partner on a project of practical relevance proposed by the company. More academic research-intensive projects are also possible.
- This is a substantial part of the programme, as 1/3 of the credits are obtained through the summer project.

Career outcomes

As a graduate of this programme, you will have a breadth of employment options in the financial sector, mostly as quantitative analyst or a similar role.

This includes investment banks, hedge funds, insurance companies, fintechs and start-ups, as well as central banks, financial regulators, financial authorities and further study (PhD).

Employers include Commerzbank, Credit Suisse, Deutsche Bank, JP Morgan Chase, Morgan Stanley, Goldman Sachs, HSBC, Deloitte, Ernst and Young, Bloomberg, and a long list of less well-known and often smaller hedge funds and fintech companies.



Graduate Open **Events**

MSc Financial Technology

Mr Nikhil Vadgama, Programme Director

Dr Silvia Bartolucci, Admissions Tutor



Who is this programme designed for?

- The financial services sector has changed and is being disrupted by innovative new emerging technologies and brand new business models
- The Financial Technology MSc takes a computer science first approach, enabling you to stay ahead of the innovations that are changing the financial services industry
- UCL, a globally renowned centre of innovation with world class credentials in computer science and finance, you'll graduate ready to work at the cutting edge of the financial sector

Who should study this programme?

- Graduates with backgrounds in STEM subject and have an interest in financial services or working for a technology company
- A science, engineering or another subject with a mathematical element, and you may also have some programming experience.
- You get the skills you'll need to work with technology and financial services, you'll graduate with a suite of expertise that has exceptional relevance in the world of finance today.
- You'll have highly transferable knowledge about new digital business models, how innovation through technology is changing financial services, technology skills in blockchain, and machine learning applications in finance.

Overview of modules, types of projects

- **Core:** Blockchain technologies, machine learning applications to finance, as well as innovation and strategy in finance, and core finance, programming and business strategy skills.
- **Optional:** Quantitative finance, algorithmic trading, database technologies, policy and regulation in finance, product management and software engineering in finance and advanced applications of machine learning.
- Practical coursework assignments reflect what is happening in current workplaces, and you'll undertake a project during the summer term too.
- Opportunities to work with an industry partner on a real world problem, or to embark on an academic project supervised by one of our leading academics

Career outcomes

- As a graduate of this programme, you could go on to work in traditional financial services, for finance institutions, or for consulting firms.
- You will also be well placed to work directly in technology roles in financial services firms, fintech companies or technology companies.
- Given the skills you will acquire in business and innovation, you will also have the background knowledge needed to enter the start-up world.



Graduate Open **Events**

MSc Emerging Digital Technologies

Dr Jiahua Xu, Programme Director



Programme goals

- An understanding of emerging technologies and their applications to financial services
- Business and strategic considerations for financial services
- Understanding financial products and developing quantitative finance skills

Your challenge

- 8 taught modules (2/3 of your grade)
- 1 substantial project and the production of a comprehensive dissertation (1/3 of your grade)
- Attending lectures, tutorials, Q&A sessions, etc. (Visa compliance)
- 1 module is 15 credits, corresponding to 150 hours of work
 - Remember most of the work takes place “out of the classroom”
- Typically, about 30 take place in the “classroom”, the rest of the time is for studying, completing coursework, revising, etc.
- You are responsible for your own time management and ultimately your own success!

Core modules

120 credits are core modules that you must take

Term 1

- [Blockchain Technologies \(COMP0163\)](#) (15 credits)
- [Database Fundamentals \(COMP0178\)](#) (15 credits)

Term 2

- [Digital Technologies and Business Strategy \(COMP0165\)](#) (15 credits)
- [Data Science \(COMP0047\)](#) (15 credits)

Term 3

- [MSc Emerging Digital Technologies Project \(COMP0177\)](#) (60 credits)

Optional modules and selection

You need to pick four optional modules (60 credits) from the following:

Term 1

- [Computer Security I \(COMP0054\)](#) (15 credits)
- [Introduction to Machine Learning \(COMP0088\)](#) (15 credits)
- [Digital Finance \(COMP0164\)](#) (15 credits)
- [Software Engineering and Product Management in Financial Technology \(COMP0201\)](#) (15 credits)

Term 2

- [Entrepreneurship: Theory and Practice \(COMP0039\)](#) (15 credits)
- [Algorithmic Trading \(COMP0051\)](#) (15 credits)
- [Innovation and Strategy in Finance \(COMP0167\)](#) (15 credits)
- [Networks and Systemic Risk \(COMP0046\)](#) (15 credits)
- [Security and Privacy \(ELEC0138\)](#) (15 credits)
- [Advanced Machine Learning in Finance \(COMP0162\)](#) (15 credits)
- [Applied Deep Learning \(COMP0197\)](#) (15 credits)
- [Policy and Regulation for Financial Technology \(COMP0200\)](#) (15 credits)

You can pick at most 4 optional across Term 1 and Term 2.

- You may also pick from other degree programmes, but you require **my permission** and the **permission of the module lead** [typically permission is not granted to take a module, but auditing may be possible]. Consideration may be given for courses in programmes from MSc FT, CompFin or FinRisk. For programmes outside of these it would require exceptional circumstances. **Just because you can find it on Portico doesn't mean its available to you.**
- There may be some timetable clashes and so on – and these will be minimised where possible within the programme you are taking only (not for modules from outside the degree programme). If you notice a clash for modules on your programme, please report them
- More information about module selection and FAQs: [New student module selection](#)

Useful links

Admissions

- [Frequently Asked Questions for applicants](#)
- (Video) [UCL Computer Science MSc Application Process](#)

Scholarships

- [UCL Scholarships and funding](#)
- [Computer Science Scholarships](#)

Contacts

- PGT Admissions at Computer Science: cs.pgt-admissions@ucl.ac.uk
- [Contact Graduate and Teacher Training Admissions](#)
- General student funding enquiries: studentfunding@ucl.ac.uk