MSc
Finance and Data Analytics

Be Stirling
BE THE DIFFERENCE
WHY STUDY MSc FINANCE AND DATA ANALYTICS?

Our new MSc Finance and Data Analytics has been developed in response to the increased demand for finance professionals with a specialisation in data analytics; the modern financial industry needs people who have the skills to analyse Big Data and inform investment decisions accordingly.

Quantitative techniques and new methods for analysing data have increasingly been adopted by market participants in recent years. This includes algorithmic trading, use of Big Data, machine learning and artificial intelligence; the latter have the potential to profoundly change the investment landscape. As the quantity and access to data available have grown, professionals who can leverage data analysis to make more informed investment decisions will have an edge in the finance industry.

WHAT IS FINANCE AND DATA ANALYTICS

Finance deals with the allocation of capital and includes activities such as investing, borrowing and saving, among others. Data Analytics is a process of transforming and modelling data with the aim of discovering useful information for decision making. As such, the use of data analytics in finance allows market participants to make informed investment decisions.

“\nThe MSc Finance and Data Analytics has been designed to equip students with the necessary skills to meet the demands of the modern financial industry”

DR KONSTANTINOS GAVRILIDIS
Course Director

FOR FURTHER INFORMATION ON COURSE CONTENT VISIT: stir.ac.uk/2s4

Five Reasons
YOU SHOULD CHOOSE THIS COURSE

1. Learn how to analyse data using programming languages such as Python and R
2. Week long masterclass and trading bootcamp
   masterclass run by Amplify Trading will give you practical experience of trading markets and complimented by regular guest lectures from senior figures in the finance industry
3. Students will have access to professional financial databases including Bloomberg, Thomson Reuters Eikon, Datastream, S&P Capital IQ and Financial Times
4. Stirling’s global research rating: we are among the top 25 in the UK according to REF 2014
5. Student Managed Investment Fund
   gain practical experience analysing the value of stocks, and constructing and managing a portfolio using professional data sources with regular input and visits from industry professionals
Big Data is the new norm in business and finance and the Stirling MSc Finance and Data Analytics opens up a wide range of career opportunities. Our graduates will be able to analyse complex data and use these to make effective investment and business decisions. This course prepares graduates for a successful career in investment banking, algorithmic trading, consulting and data analysis.

“There is an exponential learning curve during the Amplify Trading Boot Camp. You get to execute your decisions right there, right then. The live prices, with which you trade, change every second, and you make gains and losses all the time.”

KYLE PEARCE
MSc Investment Analysis (UK)

CAREER OPPORTUNITIES

DEVELOPING REAL-WORLD EXPERTISE

As part of the Management School’s focus on enhancing graduate employability we offer an intensive trading Boot Camp for Masters students on our finance related courses.

Delivered on campus in conjunction with industry training specialist Amplify, it bridges the gap between academic theories of financial markets and the real world. Students have the opportunity to trade in a simulated environment across a variety of futures contracts quoted on the Chicago Mercantile Exchange, which provides exposure to stocks, bonds, currencies and commodities. An awards ceremony concludes the week.

The Stirling Amplify Trading Boot Camp won the CFA Institute’s Innovative Delivery of Education (IDEA) Award in 2015 and was shortlisted for the Herald Higher Education Awards for Scotland in the Innovation Technology Excellence category and the Wharton-QS Stars Reimagine Education Awards, in the Presence Learning category.

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PREPARING BUSINESS LEADERS OF THE FUTURE

Postgraduate education at the University of Stirling Management School goes beyond textbooks and lecture rooms by also focusing on professional and personal development. Our unique Flying Start Leadership programme, at the beginning of the academic year, equips students with the awareness, knowledge and techniques essential for building a successful career. These range from practical skills, like effective public speaking, to developing ways to work under pressure in difficult situations and manage conflict.
The MSc Finance and Data Analytics is a one-year, full-time course. Students undertake eight or nine taught modules over two 15-week semesters followed by a supervised dissertation. The teaching includes lectures and workshops. A Postgraduate Diploma is awarded after successful completion of the taught modules at the end of the second semester. Upon successful completion of taught modules, students have the opportunity to apply their knowledge by undertaking research on an area that matches their interest and career objectives.

**Semester 1**
- **Corporate Finance**
  Provides an understanding of how corporations raise finance and invest money.
- **Representing and Manipulating Data**
  Provides the skills to manipulate data using the programming language Python.
- **Quantitative Methods in Finance**
  Provides the statistical and computing skills necessary to fully understand modern banking and finance operations.
- **Blockchain Technologies**
  Provides an understanding of Blockchain Technology (BCT), its main aspects, open problems, possible application and future directions.

**Semester 2**
- **Data Analytics**
  Provides the skills to analyse structured and unstructured (text) data using a number of advanced machine learning methods.
- **Applied Data Analytics Using R**
  Provides the skills to analyse and visualize data using the programming language R.

And up to 3 modules chosen from the following nine modules:
- **Cluster Computing**
  Provides the skills to distribute both data and processing across a cluster of computers.
- **Stochastic Processes and Optimisation**
  Provides the statistical and computational skills, such as Bayesian methods, to parameterise mathematical models from data.
- **Cluster Computing**
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  Provides the statistical and computing skills necessary to fully understand modern banking and finance operations.
- **Blockchain Technologies**
  Provides an understanding of Blockchain Technology (BCT), its main aspects, open problems, possible application and future directions.
- **Empirical Methods in Finance and Accounting**
  Introduces students to econometrics techniques required to undertake research in finance and to understand empirical papers published in academic journals. It also prepares students for the dissertation module as well as lays the foundations for more advanced postgraduate research.
- **Investments: Equity Portfolios and Pricing**
  Provides an understanding of equity portfolio management and pricing. Focuses on the valuation of equities and the management of equity portfolios.
- **Investments: Fixed Income and Alternative Investments**
  Provides an understanding of security valuation and portfolio management. Focuses on the valuation of both fixed-interest securities and issues around alternative investment products such as hedge funds, fund of funds and venture capital.
- **Investment Regulation and Ethics**
  Introduces investment regulation and ethics, with a focus on the international context.
- **Behavioural Finance**
  Drawing on insights from psychology, this module provides an alternative perspective to that of traditional finance theory which is based upon rational decision making.
- **Financial Risk Assessment**
  Provides students with a critical and practical understanding of how to use techniques and models that are necessary to measure, assess and manage financial risks.

**POSTGRADUATE STUDY AT STIRLING**

**On Campus**
Taking advantage of Scotland’s outstanding natural scenery, the University of Stirling is an inspiring and peaceful place to study. Postgraduate students can apply for University accommodation and use study areas conducive to working towards successful completion of a Masters degree.

The University offers extensive indoor and outdoor sports facilities, a shopping precinct and arts centre. We have a large team of librarians and IT specialists available for one-to-one guidance with research skills and use of the University’s high-tech learning environment. Assistive technologies are available for students with disabilities.

**Student and alumni support**
The University of Stirling Graduate School will support you in making the most of your time at Stirling – ensuring you develop your skills and, crucially, your employability within a rich academic environment. We have excellent links with major employers in business and industry and our Career Development Centre works closely with students in preparation for the transition to work.

The relationship with students does not stop at graduation. We maintain links with our alumni through international events and social media.

**Accreditation and affiliation**
We are a member of the Association of Business Schools; the European Foundation for Management Development; in partnership with the Chartered Management Institute; and are signatories to the Principles for Responsible Management Education.
ENTRY REQUIREMENTS

You’ll need a minimum of a second class Honours degree in any subject, or an equivalent qualification. However, you can still apply if you don’t have these formal qualifications, but bring significant work experience in a relevant area. A background in finance is not required, but you should be comfortable with the level of numeracy required to interpret statistics and financial reports.

If English is not your first language you must provide evidence of your proficiency.

If you don’t meet the required criteria for this course, you can complete the Graduate Diploma in Business, Finance and Sport to gain a guaranteed entry onto this Masters degree: stir.ac.uk/124

FEES, FUNDING AND SCHOLARSHIPS

The University of Stirling Management School is committed to investing in academically talented students. There are various categories of funding available to support the cost of your studies at the University of Stirling.

In addition, CFA Scholarships which reduce the cost of undertaking CFA Level 1 are available on a competitive basis and students may apply during their studies.

Information on some of the most common funding and scholarship opportunities that are available to you can be found here: stir.ac.uk/39