Big data skills are in high demand and they attract high salaries. The MSc Big Data at the University of Stirling is a taught advanced Masters degree covering the technology of big data and the science of data analytics. The course is taught in the beautiful Stirling campus in the heart of Scotland with support from companies who recruit data scientists. The Stirling MSc Big Data has been developed in partnership with global companies who employ data scientists. Over 90% of our students find work or further study within 6 months of finishing the course in diverse sectors such as banking and finance, health services, data science consultancy, data driven marketing, and even sports science.

The course focuses on big data technologies and analytics, and covers the following topics:

### Course Structure and Content

**Why study at Stirling**

- **Beautiful campus environment**
  University of Stirling campus is 1st in the UK for campus environment according to the University of Stirling campus in the heart of Scotland with support from companies who recruit data scientists.

- **Employability**
  The University of Stirling is 1st in Scotland and 3rd in the UK for graduate employment and 98% of our postgraduate leavers are in employment of further study within six months of graduating. The industrial experience of our staff and the guest lecturers on the course ensure your experience is practical and applied. Industrial dissertation projects often lead straight to a job with the partner company.

- **Industry driven course**
  The programme has been designed in collaboration with employers to ensure you get the right skills for that big data job.

- **Wide range expertise**
  The course covers Big Data technology, advanced analytics and industrial and scientific applications.

- **Networking opportunities**
  Many of our postgraduate students come from overseas. Studying at Stirling offers an excellent opportunity to establish your own network of contacts at the outset of your career.

**Key Information**

- **Degree type:** MSc
- **Study method:** full-time (one year) or part-time (two years)
- **Start date:** September
- **Course length:** One year

### Course Modules

- **Mathematical Foundations**
  This course will equip students with the basic mathematical knowledge and problem-solving skills.

- **Statistics for Data Science**
  The course is intended to give students a basis for the analysis and interpretation of quantitative information; as well as an understanding of statistical methods at an introductory level and how to overcome problems when analysing big data sets.

- **Big Databases**
  After a recap of SQL, this course takes you through the various NoSQL databases such as document stores like MongoDB, column stores like Cassandra and graph databases like Neo4j. You’ll learn to pick the right database for your application and how to build, search and distribute the data in them.

- **Big Data Analytics**
  Sometimes, the more data you have, the better hidden the important facts become. Distilling information from big data needs fast, parallel analytics. We guide you through machine learning, data visualisation, web analytics and sentiment analysis.

- **Hadoop and MapReduce**
  This course covers distributed data processing with Hadoop and MapReduce in addition to the use of Condor for distributed computation.

- **Scientific and Commercial Applications**
  With guest lectures from science and industry, this course presents a set of case studies of Big Data in action. You’ll learn first-hand how companies are using big data in fields such as banking, travel, telecoms, genetics and neuroscience.

- **Python Scripting**
  Learn to represent and manipulate data using Python. This course starts from a basic introduction to scripting in Python and moves quickly to the data libraries such as Numpy, Scipy and Pandas.

The MSc Big Data is a mix of practical technology such as Hadoop, NoSQL, and MapReduce, important maths and computing theory, and advanced computational techniques. The course will teach you what you need to know to collect, manage and analyse big, fast moving data for science or commerce. You’ll learn from lectures, practical labs and small tutorial groups during the first two semesters from September to April.

### Why an MSc Big Data

- **Why study at Stirling**
  - **Networking opportunities**
    Many of our postgraduate students come from overseas. Studying at Stirling offers an excellent opportunity to establish your own network of contacts at the outset of your career.

- **Why an MSc Big Data**
  - **Why study at Stirling**
    Many of our postgraduate students come from overseas. Studying at Stirling offers an excellent opportunity to establish your own network of contacts at the outset of your career.
ENTRY REQUIREMENTS

A minimum of a second class honours degree (2:1 preferred) or equivalent in a relevant subject is required. Applicants without these formal qualifications but with significant relevant work experience are encouraged to apply. Degrees should be in a numerate subject such as maths, computing, engineering or an analytic science. If English is not your first language, you must provide evidence of your proficiency such as a minimum IELTS score of 6.0 (5.5 in all bands).

SCHOLARSHIPS

There are a number of scholarships available to support your studies. You may qualify for University funding as well as funding from governmental bodies, the European Commission, funding trusts, research councils, employers and industry. Scholarships finder: stir.ac.uk/scholarships

“Data Scientist: The Sexiest Job of the 21st Century”

HARVARD BUSINESS REVIEW

October 2012

CONTACT INFORMATION

Course Director: Professor Gabriela Ochoa
Telephone: +44 (0) 1786 467438
Email: gabriela.ochoa@cs.stir.ac.uk
stir.ac.uk
stir.ac.uk/117
Join our community

Learn more about the course modules: stir.ac.uk/117

PHOTOGRAPHY: For a list of photographers who have contributed to the University of Stirling photo library, contact: marketingtools@stir.ac.uk

This publication can be made available in different formats. Please contact Student Recruitment and Admissions for further information: recruitment@stir.ac.uk

The University of Stirling is a charity registered in Scotland, number SC 011596.