DATA SCIENCE
BSc (Hons)

ARE YOU STIRLING?
WHY STUDY DATA SCIENCE?

Demand for workers with specialist data skills like data scientists and data engineers has more than tripled over five years (+231%), according to a labour market analysis commissioned for Dynamics of data science skills, a new Royal Society report published in May 2019. The types of skills most frequently required by British employers include scripting languages, big data, SQL databases and machine learning.

This BSc (Hons) Data Science will give you an in-depth awareness and appreciation of the underlying computing and mathematical principles driving data science technologies. It is a practical degree focusing on the mathematical and analytical skills needed to begin a career as a data scientist or analyst.

You will study modules chosen from across Computing Science and Mathematics and will be introduced to both data science theory and applications. You’ll study subjects at the core of data science including programming, machine learning and statistics. This Data Science course will introduce you to database principles and applications and teach you cutting edge technology such as Python and NoSQL. You’ll learn how to collect, manage and analyse fast moving Big Data for science or commerce.

COURSE DETAILS

In year 1-3 students need to complete 120 credits comprising of compulsory and optional modules. Compulsorily modules examples include: Introduction to Computing Science, Programming and User Interface Design, Data Structures, Objects and Algorithms, Scripting for Data Science, Introduction to Machine Learning, Code Analysis and Performance and Managing Information.

In year 4 all modules are compulsory including Computing Science Project.

Honours students work on an independent project in their final year. The Honours project is a substantial, individual piece of work carried out over a two semester period, usually including preparatory work during the preceding Summer break. The project could be a technology comparison, or more innovative or experimental research work individually or in collaboration with one of the Division’s research teams.

REASONS TO CHOOSE THIS COURSE

1. EXPERT TEACHING TEAM
We’re ranked 3rd in Scotland and top 20 in the UK for Computer Science and Information Systems (The Guardian University Guide 2019).

2. INDUSTRIAL EXPERIENCE
We provide opportunities for our students to develop strong professional skills through industrial placements with local SMEs and large multi-nationals.

3. ADVANCED TECHNOLOGIES
You’ll learn cutting edge technology such as NoSQL and machine learning.
CAREER OPPORTUNITIES

Organisations are increasingly using and collecting larger amounts of data during their everyday operations. From predicting what people will buy to tackling environmental and organisational issues, your job is to analyse, visualise and interpret large amounts of data to find patterns and help solve the problems faced by businesses in innovative ways. Data Scientists work across a range of areas including finance, health, retail, food, scientific research, agriculture etc.

Graduates from a data science course find employment as:
- R&D data scientist
- digital analytics engineer
- data engineer
- data scientist
- machine learning engineer
- machine learning data scientist
- data solution architect
- machine learning developer
- data scientist in a research field such as genomic, cognitive, clinical and healthcare

DATA SCIENCE

stir.ac.uk/2t1

G700

MINIMUM REQUIREMENTS

YEAR 1 ENTRY – FOUR-YEAR HONOURS
SQA Highers:
ABBB – one sitting
AABB – two sittings
GCE A-levels:
BBB
IB Diploma:
32
BTEC (Level 3):
DDM

YEAR 2 ENTRY – THREE-YEAR HONOURS
SQA Adv Highers:
ABB
GCE A-levels:
ABB
IB Diploma:
35

Essential subjects:
Subjects to include Computing and relevant experience of Java or other programming languages.

OTHER QUALIFICATIONS
Scottish HNC/HND:
Year one minimum entry - Bs in graded units.
Advanced entry:
Please visit: stir.ac.uk/ay
Access courses and other UK/EU and international qualifications are also welcomed.

ADDITIONAL INFORMATION
General entry requirements apply. Please visit: stir.ac.uk/av

PART TIME, ADVANCED ENTRY AND STUDY ABROAD OPTIONS AVAILABLE
## TYPICAL TIMETABLE

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<th>SEMESTER</th>
<th>MODULE 1</th>
<th>MODULE 2</th>
<th>MODULE 3</th>
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<tr>
<td>1</td>
<td>1</td>
<td>Introduction to Computing Science</td>
<td>Discrete Structures</td>
<td>Any Module</td>
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<tr>
<td>2</td>
<td>2</td>
<td>Programming and User Interface Design</td>
<td>Introduction to Data Science</td>
<td>Any Module</td>
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<tr>
<td>3</td>
<td>3</td>
<td>Data Structures, Objects and Algorithms</td>
<td>Introduction to Databases</td>
<td>Scripting for Data Science</td>
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<td>4</td>
<td>4</td>
<td>Practical Statistics</td>
<td>Managing Information</td>
<td>NoSQL DB, Data Engineering, Data Warehousing</td>
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<tr>
<td>5</td>
<td>5</td>
<td>Introduction to Machine Learning</td>
<td>Learning Code Analysis and Performance</td>
<td>Data Science Applications</td>
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<td>6</td>
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<td>Distributed Data Science Systems</td>
<td>Data Strategy</td>
<td>Natural Language Processing and Computer Vision</td>
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<td>Computing Science Project</td>
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<tr>
<td>8</td>
<td>8</td>
<td>Computing Science Project</td>
<td></td>
<td>Options</td>
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### AUTUMN ELECTIVES:
For a full list of elective modules please visit: [stir.ac.uk/courses/ug/natural-sciences/data-science](http://stir.ac.uk/courses/ug/natural-sciences/data-science)

### SPRING ELECTIVES:
For a full list of elective modules please visit: [stir.ac.uk/courses/ug/natural-sciences/data-science](http://stir.ac.uk/courses/ug/natural-sciences/data-science)

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**stir.ac.uk/65**