

Programme Specification

MSc Data Science (UoR-NUIST Academy) (full-time)

PFTZDATAURHM

MSc Data Science (NUIST-based, 2+0) (full-time)

BFTZDATANUDM

For students entering in 2023/24

This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	MSc Data Science (UoR-NUIST Academy) (full-time) - 2 years MSc Data Science (NUIST-based, 2+0) (full-time) - 2 years
Accreditation	N/A
Programme Start Dates	September

Programme information and content

The programme is intended for science/engineering graduates and computing professionals who wish to broaden and deepen their understanding of data science, predictive and descriptive analytics, data mining and machine learning algorithms for data-driven knowledge discovery and artificial intelligence applications for real-world problems. The course will cover concepts, theories, techniques and tools for the analysis of structured, semi-structured and unstructured data. The programme also provides the opportunity to develop skills and know-how on advanced computing paradigms and platforms for big data analytics, such as cloud computing and MapReduce.

The programme covers data mining and machine learning algorithms and tools in detail and is complemented by basic elements for data scientists related to mathematics and statistics, data security and professional ethics.

The programme requires prior computer programming knowledge and skills at UG level or from professional experience. By the end of this programme, students will have acquired the necessary knowledge and skills to be able to apply and develop appropriate methods for automatic knowledge discovery from data in an individual MSc project and, later on, in a professional environment.

Teaching resources

The programme will be supported by the expertise and resources in data science, machine learning and cloud computing at the University of Reading and NUIST.

Career prospects

Graduates from this programme can either continue onto a PhD programme or pursue a job in industry. Such graduates in data science and machine learning are very much sought after in almost every industrial domain which is constantly evolving at a fast pace, especially for the development and deployment of AI solutions in industrial processes. There is also a

significant demand of such an MSc programme for continuous professional development from companies who wish to offer their workforce training opportunities in this area.

Module information

The programme comprises of 180 credits consisting of a set of compulsory modules, as listed in the table below.

Compulsory modules

Module	Name	Credits	Level
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The following modules will be taken by students who will be studying Year 1 in the UK.

Module	Name	Credits	Level
CSMDM21	Data Analytics and Mining	20	M
CSMMA21	Mathematics and Statistics for Data Science	20	M
CSMAD21	Applied Data Science and Python	20	M
CSMAI21	Artificial Intelligence and Machine Learning	20	M
CSMBD21	Big Data and Cloud Computing	20	M
CSMDE21	Data Security and Ethics	10	M
CSMRS16	Research Studies	10	M

The following modules will be taken by students who will be studying both years in Nanjing.

Module	Name	Credits	Level
CSMDM21NU	Data Analytics and Mining	20	M
CSMMA21NU	Mathematics and Statistics	20	M
CSMAD21NU	Applied Data Science and Python	20	M
CSMAI21NU	Artificial Intelligence and Machine Learning	20	M
CSMBD21NU	Big Data and Cloud Computing	20	M
CSMDE21NU	Data Security and Ethics	10	M
CSMRS16NU	Research Studies	10	M

Year 2 modules

Module	Name	Credits	Level
CSMPR21NU	MSc Project	60	M

Part-time or flexible modular arrangements

N/A

Additional costs of the programme

Students will need to fund their travel costs to and from China and the UK.

For textbooks and other learning resources, we shall recommend the students to budget up to £100, if the students prefer to have their own books rather than borrowing them from the library. Some books may be available second-hand, which will reduce the costs. Some resources to support the study, including textbooks and electronic material, are available through the library and the content management systems of the University and NUIST.

Optional modules

N/A

Placement opportunities

N/A

Study abroad opportunities

N/A

Teaching and learning delivery

Students are expected to engage in teaching and learning through lectures, tutorials and computer laboratory sessions. Reading-based modules are delivered at Reading by academic staff from the University of Reading while NUIST-based modules are delivered at NUIST by academic staff from NUIST.

In this two-year programme, students are required to spend approximately a total of 1800 learning hours which includes 180 contact hours that are timetabled for classes and practical sessions, as stipulated in the requirements of the modules delivered by the University of Reading. In addition to the timetabled contact hours, students are expected to carry out guided independent study in the remaining hours. However, for those modules which are delivered at NUIST, contact hours may vary.

Students must undertake a dissertation project in the second year of this programme. Each dissertation project will be supervised by two supervisors: a supervisor from the University of Reading and a supervisor from NUIST. Detailed information about the teaching and learning delivery can be found in each specific Module Description as well as in the Programme Handbook.

Accreditation details

N/A

Assessment

Assessment takes a variety of formats ranging from a mixture of coursework and examination, to 100% coursework. Details are given in the module descriptions.

Formative assessment not contributing to the mark for the module may be employed, e.g., set work related to expected learning outcomes, which allows the students to benefit from feedback.

Progression

N/A

Classification

The University's taught postgraduate marks classification is as follows:

Mark Interpretation

70 - 100% Distinction

60 - 69% Merit

50 - 59% Good standard (Pass)

Failing categories:

40 - 49% Work below threshold standard 0 - 39% Unsatisfactory Work

For Masters Degree

To qualify for **Distinction**, students must

- i. gain an overall average of 70 or more over 180 credits; and
- ii. a mark of 60 or more for the dissertation; and
- iii. the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iv. students must not have any mark below 40.

To qualify for **Merit**, students must

- i. gain an overall average of 60 or more over 180 credits; and
- ii. a mark of 50 or more for the dissertation; and
- iii. the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iv. students must not have any mark below 40.

To qualify for **Passed**, students must

- i. gain an overall average of 50 or more over 180 credits; and
- ii. a mark of 50 or more for the dissertation; and
- iii. the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iv. the total credit value of all modules marked below 40 must not exceed 30 credits.

For PG Diploma

To qualify for **Distinction**, students must

- i. gain an overall average of 70 or more over 120 credits; and
- ii. In addition, the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iii. students must not have any mark below 40.

To qualify for **Merit**, students must

- i. gain an overall average of 60 or more over 120 credits; and
- ii. the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iii. students must not have any mark below 40.

To qualify for **Passed**, students must

- i. gain an overall average of 50 or more over 120 credits; and
- ii. the total credit value of all modules marked below 50 must not exceed 55 credits; and
- iii. the total credit value of all modules marked below 40 must not exceed 30 credits.

For PG Certificate

To qualify for a **Postgraduate Certificate**, students must

- i. gain an overall average of 50 or more over 60 credits; and
- ii. the total credit value of all modules marked below 40 must not exceed 10 credits.

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at <http://www.reading.ac.uk/module/>. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

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12 May 2023

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