UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate)

FOR ENTRY YEAR: 2027/28

Date created: 07/08/2023 **Last amended:** 11/11/2026 **Version no.** 2

Date approved by EQED: 11/11/2026

1. Programme title(s) and code(s):

MSc Data Science
MSc Data Science with Professional Practice
MSc Data Science with Industry
PGDip Data Science

a) HECOS Code

HECOS Code	%
100370	100

2. **Awarding body or institution:** University of Leicester

3. a) Mode of study Full-time

b) Type of study Campus-based

4. Registration periods:

MSc Data Science

a) **MSc and MSc with Professional Practice October Intake**
The normal period of registration is 12 months
The maximum period of registration is 24 months

b) **MSc and MSc with Professional Practice January Intake**
The normal period of registration is 16 months
The maximum period of registration is 28 months

c) **MSc and MSc with Professional Practice April Intake**
The normal period of registration is 12 months
The maximum period of registration is 24 months

d) **MSc with Industry October Intake**
The normal period of registration is 24 months
The maximum period of registration is 36 months

e) **MSc with Industry January Intake**
The normal period of registration is 28 months
The maximum period of registration is 40 months

f) **MSc with Industry April Intake**
The normal period of registration is 24 months
The maximum period of registration is 36 months

g) **PG Diploma October Intake**
The normal period of registration is 9 months
The maximum period of registration is 18 months

h) **PG Diploma January Intake**

The normal period of registration is 12 months

The maximum period of registration is 24 months

i) **PG Diploma April Intake**

The normal period of registration is 9 months

The maximum period of registration is 18 months

5. Typical entry requirements

2:1 Honours degree or international equivalent in any subject.

No requirement for mathematics or programming background, but a demonstrable interest in developing statistical and programming skills shown in the personal statement or CV if there is no relevant academic qualification. Where there is a relevant academic qualification, the academic transcript should demonstrate appropriate statistical and programming skills.

6. Accreditation of Prior Learning

n/a

7. Programme aims

Subject knowledge, understanding and skills
The programme will give you practical knowledge of the concepts and techniques making up the area of practice known as data science, and their relationship to other areas of practice involving the collection and analysis of data.

Intellectual and analytical skills
You will also develop the skills to critically analyse your work, and that of others, in particular in relation to the appraisal of data sources and the ethical issues arising from data collection and algorithmic decision making.

Statistical and modelling skills

You will be able to formulate a data science problem mathematically, obtain solutions by appropriate modelling methods, and draw valid inferences.

Computational problem-solving & practical computing skills
You will learn to use software tools to apply scientific techniques for the exploration, modelling and visualisation of data by solving real-world problems.

Research and project planning skills
A characteristic of data science is its multidisciplinary and collaborative style of working. You will work in a group to plan and conduct an advanced project in data science, recognising that complex problems require consideration from different viewpoints for an effective solution.

Professional skills
Recognising the importance of presentation skills and impactful visualisation of results in influencing decision makers, you will learn concepts and techniques of data visualisation and use them when exploring different approaches to presenting your work.

In addition, for the 'with Industry' variant
• The 'With industry' variant of this programme is offered in accordance with the University's standard specification for with industry programme variants.

In addition, for the 'with Professional Practice' variant

• The 'with Professional Practice' variant of this programme is offered in accordance with the University's standard specification for with professional practice programme variants.

8. Reference points used to inform the programme specification

- QAA Benchmarking Statement
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- Education Strategy
- University Assessment Strategy [log in required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data

UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate) FOR ENTRY YEAR: 2027/28

Date created: 07/08/2023 **Last amended:** 11/11/2026 **Version no.** 2

Date approved by EQED: 11/11/2026

9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Discipline specific knowledge and competencies

i) Knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: explain what is meant by data science and its relationship to other areas involving collection and analysis of data	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects
Students should be able to: assess the role of data science in addressing the challenges of climate change and promoting sustainability	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

ii) Concepts

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: explain the purposes and limitations of modelling data (including ethical and EDI issues)	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

Students should be able to: recognise the importance of presentation skills and impactful visualisation	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects
Students should be able to: explain and discuss fundamental concepts related to visual perception and representation	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

iii) Techniques

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: plan and build simple program scripts to read data from various sources and formats, and undertake data cleaning and manipulation in a reproducible way	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects
Students should be able to: apply basic statistical techniques and use the key data structures used in data science to draw reliable inferences from data	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects
Students should be able to: implement examples from each of the main categories of data model in a high-level programming language	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

iv) Critical Analysis

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate skills in critically reflecting on the applications and implications of data analysis and visualisation tools at each stage of the data science workflow	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects
Students should be able to: Constructively critique the work of oneself and others at each stage of the data science workflow	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects

v) Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use software tools or scripting languages to create effective visualizations	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

vi) Appraisal of evidence

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type

Students should be able to: identify important sources of data and critically evaluate them	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects
Students should be able to: explain the various kinds of risk in data science, including ethical risks, for example, those arising from historical biases due to race and gender; identify the risks in particular case studies; and discuss how to handle them	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects

b) Transferable Skills

i) Research Skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use library sources and online materials to supplement recommended texts and sources to explore syllabus components	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects
Students should be able to: demonstrate advanced analytical skills to interpret data and other collected information into a clear and substantial report	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects

ii) Communication skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: communicate in a way that is appropriate to the intended audience and business or research context	Lectures, online learning material and group discussions	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects

iii) Data Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Present data in a way that is appropriate to the intended audience and business or research context	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

iv) Information Technology

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: identify and use appropriate software tools	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

v) Problem Solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type

Students should be able to: analyse problems to identify the role of data science in formulating a solution map the stages of problem solving onto a data science workflow	Lectures, online learning material practical classes	Group problem-based learning, independent reading and research, marked and self-assessed assignments	Written examinations, reports and presentations on problem-based projects

vi) Working relationships

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: work in a group to plan and conduct an advanced project in data science, recognising that complex problems require consideration from different viewpoints for an effective solution	Lectures, online learning material practical classes	Group problem-based learning	reports and presentations on problem-based group projects

vii) Managing learning

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: work independently and make effective use of resources in guided independent study	Lectures, online learning material, group discussions and project supervision	Group discussion, independent reading and research, marked and self-assessed assignments, maintenance of a reflective learning journal	Written examinations, reports and presentations on problem-based projects including final research project

viii) Career Management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Understand the role of data science in a range of business, research and	Lectures, online learning material, group discussions and project supervision	Group discussion, independent reading and research	Reports and presentations on problem-based projects including final research project

other application areas and identify the skills required by data scientists to contribute effectively in these areas			

For the with Industry variant, the additional programme outcomes apply

For the with Professional Practice variant, the additional programme outcomes apply

UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate) FOR ENTRY YEAR: 2027/28

Date created: 07/08/2023 **Last amended:** 11/11/2026 **Version no.** 2

Date approved by EQED: 11/11/2026

10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of *Senate Regulation 6 governing postgraduate programmes* relevant to the year of entry.

The following modules have restrictions on the assessment components that can be reassessed:

- MA7000
- MA7443

Please refer to the module specification for full details.

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course.

a) Course transfers

n/a

b) With Industry

For the with Industry variant the additional progression points apply.

10a. Research-inspired Education

Students on this programme will advance through the four quadrants of the University of Leicester Research-inspired Education Framework as follows:

RiE Quadrant	Narrative
	The programme aims to provide a route for students in their transition from undergraduate study to employment in data-led sectors. It provides the opportunity to gain practical experience in data science and a rigorous understanding of applied statistics, data mining, exploratory data exploration and related areas.
Research-briefed Bringing staff research content into the curriculum.	*Research-briefed:* Students will develop an awareness of the methodologies and fundamental techniques that are used in data science. Throughout the modules, staff emphasise the importance of the use of these fundamental techniques to ensure that the students' future research conclusions are reliable, reproduceable, and free from bias.
Research-based Framed enquiry for exploring existing knowledge.	*Research-based:* During practical classes, students will learn to use software tools to apply scientific techniques for the exploration, modelling and visualisation of data by solving real-world problems.
Research-oriented	*Research-oriented:* Students will be able to search information effectively, and demonstrate advanced analytical skills to interpret data and other

Students critique published research content and process. **Research-apprenticed** Experiencing the research process and methods; building new knowledge.	collected information into a clear and substantial report. They will also develop the skills to critically analyse their own work, and that of others, in particular in relation to the appraisal of data sources and the ethical issues arising from data collection and algorithmic decision making. *Research-apprenticed:* Students work, with an expert supervisor, to produce a solution to a business-related project. Students will then have the opportunity to present their work and process, and be challenged on choices that were made throughout the development of the project.

11. Criteria for award and classification

This programme follows the standard scheme of postgraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation governing postgraduate programmes* relevant to the year of entry.

12. Special features

This programme is designed to be accessible to students from a wide range (including non-STEM) of previous academic experience.

For the with Industry variant the additional Special Features apply
For the with Professional Practice variant the additional Special Features apply

13. Indications of programme quality

QAA subject review [www/qaa.org/], external examiners reports ("the performance of the students is comparable with similar high-quality UK institutions"), QAA benchmark descriptors for a master's degree, taken from the benchmark statements for Computing (2022, pp.24-26) and Mathematics, Statistics and Operational Research (2023, p.29) where relevant.

For the with Industry variant the additional indications of programme quality apply

14. External Examiner(s) reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required].

UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate) FOR ENTRY YEAR: 2027/28

Date created: 07/08/2023 **Last amended:** 11/11/2026 **Version no.** 2

Date approved by EQED: 11/11/2026

Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

Updates to the programme

Academic year	Module	Change
2026/27 January starts	MA7202 Introduction to Functional Data	Optional module removed
2026/27 January starts	CO7441 Creative Problem Solving	Module becomes optional
2026/27 April starts	MA7911 Network Science, MA7202 Introduction to Functional Data Analysis, MK7406 International Business	Optional modules removed
2026/27 Jan and April starts	PA7081 Practical Programming, MA7444 Excel for Data Science	Modules become core
2027/28 September starts	MA7911 Network Science, MA7202 Introduction to Functional Data Analysis, MK7406 International Business	Optional modules removed
2027/28 September starts	PA7081 Practical Programming, MA7444 Excel for Data Science	Modules become core
2027/28 January starts	MA7911 Network Science, MK7406 International Business	Optional modules removed
2027/28 January starts	CO7441 Creative Problem Solving	Module becomes core

MSc Data Science

Level 7/Year 1 Delivery Year 2027/28 Intake Month September Mode of Study Full Time Structure

Credit breakdown

Status	Summer Term	Semester 1	Semester 2
Core	60 credits	60 credits	60 credits
Optional	n/a	n/a	n/a

180 credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 1	MA7419	Fundamentals of Data Science	15 credits
Semester 1	MA7441	Overview of Data Science Practice	15 credits
Semester 1	PA7081	Practical Programming	15 credits
Semester 1	MA7444	Excel for Data Science	15 credits
Semester 2	MA7442	Modelling Data	15 credits
Semester 2	MA7203	Statistics for Data Science	15 credits
Semester 2	GY7413	Information Visualisation	15 credits
Semester 2	CO7441	Creative Problem Solving	15 credits
Spanning (summer)	MA7443	Data Science Research Project (students not on the with Professional Practice variant)	60 credits
Spanning (summer)	MA7000	WPP Research Project (students on the with Professional Practice variant only)	60 credits

Notes
Students registered on the PG Diploma do not take the MA7443 Data Science Research Project.

Students registered on the with Industry variant will take the MA7443 Data Science Research Project after their industrial placement.

Level 7/Year 1 Delivery Year 2027/28 Intake Month January Mode of Study Full Time Structure

Credit breakdown

Status	Summer Term	Semester 1	Semester 2
Core	60 credits	60 credits	60 credits
Optional	n/a	n/a	n/a

180 credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 2	MA7419	Fundamentals of Data Science	15 credits
Semester 2	MA7441	Overview of Data Science Practice	15 credits
Semester 2	CO7441	Creative Problem Solving	15 credits
Semester 2	GY7413	Information Visualisation	15 credits
Semester 1	MA7442	Modelling Data	15 credits
Semester 1	MA7203	Statistics for Data Science	15 credits
Semester 1	PA7081	Practical Programming	
Semester 1	MA7444	Excel for Data Science	
Semester 2	MA7443	Data Science Research Project (students not on the with Professional Practice variant)	60 credits
Semester 2	MA7000	WPP Research Project (students on the with Professional Practice variant only)	60 credits

Notes
Students registered on the PG Diploma do not take the MA7443 Data Science Research Project.

Students registered on the with Industry variant will take the MA7443 Data Science Research Project after their industrial placement.

Level 7/Year 1 Delivery Year 2027/28 Intake Month April Mode of Study Full Time Structure

Credit breakdown

Status	Summer Term	Semester 1	Semester 2
Core	60 credits	60 credits	60 credits
Optional	n/a	n/a	n/a

180 credits in total

Core modules

Delivery period	Code	Title	Credits
Spanning (summer)	MA7419	Fundamentals of Data Science	15 credits
Spanning (summer)	MA7441	Overview of Data Science Practice	15 credits
Spanning (summer)	CO7441	Creative Problem Solving	15 credits
Spanning (summer)	GY7413	Information Visualisation	15 credits
Semester 1	MA7442	Modelling Data	15 credits
Semester 1	MA7203	Statistics for Data Science	15 credits
Semester 1	PA7081	Practical Programming	

Semester 1	MA7444	Excel for Data Science	
Semester 2	MA7443	Data Science Research Project (students not on the with Professional Practice variant)	60 credits
Semester 2	MA7000	WPP Research Project (students on the with Professional Practice variant only)	60 credits

Notes

Students registered on the PG Diploma do not take the MA7443 Data Science Research Project.

Students registered on the with Industry variant will take the MA7443 Data Science Research Project after their industrial placement.

Appendix 2: Module specifications

See postgraduate module specification database (Note - modules are organized by year of delivery) [login-require