Programme Specification (Undergraduate) FOR ENTRY YEAR:2026/2027

Date created: 10/08/2025 **Last amended:** Click or tap to enter a date. **Version no.** 1 **Date approved by EQED:** 07/11/2025

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

BSc/DipHE*/CertHE* Mathematics with Data Science and Artificial Intelligence

BSc Mathematics with Data Science and Artificial Intelligence with a Year in Industry

BSc Mathematics with Data Science and Artificial Intelligence with a Year Abroad

BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year

BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year with a Year in Industry

BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year with a Year Abroad

Notes

* An award marked with an asterisk is only available as an exit award and is not available for students to register onto.

- G120 for BSc Mathematics with Data Science and Artificial Intelligence
- G121 for BSc Mathematics with Data Science and Artificial Intelligence with a Year in Industry
- G122 for BSc Mathematics with Data Science and Artificial Intelligence with a Year Abroad
- G994 for BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year
- G994 for BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year with a Year in Industry
- G994 for BSc Mathematics with Data Science and Artificial Intelligence with a Foundation Year with a Year Abroad

a) HECOS Code

HECOS CODE	%
100403 (Mathematics)	50
100406 (Statistics)	25
100359 (Artificial Intelligence)	25

b) UCAS Code (where required)

See above.

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based

4. Registration periods:

The normal period of registration for the BSc programme is three years. The maximum period of registration for the BSc programme is five years.

The normal period of registration for the BSc with industry programme is four years. The maximum period of registration for the BSc with industry programme is six years.

The normal period of registration for the BSc with a year abroad programme is four years. The maximum period of registration for the BSc with abroad programme is six years.

For Foundation Year Variants:
The normal period of registration for the BSc is four years (one year for the Foundation Year, with three years for the BSc). The normal period of registration for the BSc with a Year in Industry or a Year Abroad is five years (one year for the Foundation Year, with four years for the BSc (including one year for the Year in Industry or Year Abroad)). The maximum period of registration for the BSc is six years (one year for the Foundation Year, and five years for the BSc). The maximum period of registration for the BSc with a Year in Industry or a Year Abroad is seven years (one year for the Foundation Year and six years for the BSc (including one year for the Year in Industry or Year Abroad)).

5. Typical entry requirements

ABB (including maths)

For Foundation Year Variant:
See STEM Foundation Year Programme Specification.

Accreditation of Prior Learning

APL will not be accepted for exemptions from individual modules, however may be considered for direct entry to year 2, on a case by case and subject to the general provisions of the University APL policy.

6. Programme aims

The programme aims to

- Foster confidence, convey knowledge and develop expertise in mathematics, including an appreciation of the usefulness of mathematics, statistics and data analysis;
- Provide an education and training in mathematics which includes fundamental concepts and gives an indication of the breadth of mathematics, statistics and data analysis;
- Develop an appreciation of the necessity for rigorous justification of assertions and the need for logical arguments;
- Develop the ability to model the world using mathematics, and to be able to produce relevant and robust solutions to real world problems;
- The skills and experience to write and use software applications.
- An understanding of programming paradigms and software development methods.
- A knowledge of the theory and concepts that underpin Mathematics and Computer Science.

- An ability to model and understand complex data and use it to solve problems.
- To select and apply appropriate tools (technical and analytical) to solve novel, data-related problems.
- Enable students to develop self-confidence gained through the provision of careful guidance in the first level, with increasing independence later;
- Improve students' team working skills;
- Stimulate intellectual development and develop powers of critical analysis, problem solving, written communication skills and improve presentational skills;
- Develop the ability to communicate solutions to problems and mathematical concepts in general using language appropriate to the target audience;
- Develop competence in IT, in particular the use of mathematical software and programming;
- Enhance practical computing skills by learning software in common use;
- Raise students' expertise and understanding to a point where they could embark upon postgraduate study in mathematics data science and AI;
- Develop the ability to complete independent and group projects.

In addition, for the 'with a Year abroad' variants

- The 'Year Abroad' variant of this programme is offered in accordance with the University's standard specification for the experiential year abroad variant.

In addition, for the 'with Industry' variants

- The 'Year in industry' variant of this programme is offered in accordance with the University's standard specification for year in industry programme variants.
- To provide experience of applications of professional and discipline-specific skills in Industry and to reinforce knowledge through its use in different environments.

For Foundation Year variant, see BSc Mathematics STEM Foundation Year Programme Specification

7. Reference points used to inform the programme specification

- QAA Framework for Higher Education Qualifications in England, Wales and Northern Ireland
- QAA Benchmarking Statement Mathematics, Statistics and Operational Research – the basics
- QAA Benchmarking Statement Mathematics, Statistics and Operational Research
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- Education Strategy
- University Assessment Strategy [login required]
- Student Employability Strategy [login required]
- NSS Survey
- First Destination Survey
- External Examiner's Reports
- Student Destinations Data
- Research Inspired Strategy 2021-2031
- 100 Hours work related learning initiative

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8. Programme Outcomes

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

a) Knowledge and Critical Understanding

i) Competence in an appropriate body of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to apply basic theory, basic techniques of analysis, algebra, applied mathematics, and statistics.	Lectures, problem classes, group work, office surgeries, on-line exercises, tests and quizzes.	Review of lecture material, slides and course notes and other specified reading; Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of feedback. Exam preparation	Written examinations; Departmental tests; On-line, tests and quizzes; Written and computational problems; Assessed presentations and poster presentations.
Students should be able to apply basic techniques and model problems	As above	As above	Written examinations; On-line, tests and quizzes; Written and computational assessed problems.
Students should be able to recall and describe Mathematical and Computer Science techniques relevant to the field of Mathematics, Data Science and Artificial Intelligence.	With industry variant: Training in the use of software packages on placement	With industry variant: Specified software use; Write reports on case studies, short projects, placement reports.	With industry variant: Assessed case studies and short projects. Specific projects undertaken on placement where applicable. Placement reports.
Students should be able to recognise sound arguments and valid proofs.	Lectures, problem classes, group work, office surgeries, on-line exercises, tests and quizzes.	Review of lecture material, slides and course notes and other specified reading; Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of	Written examinations; Departmental tests; On-line tests and quizzes; Written and computational problems; Assessed presentations and poster presentations.

		feedback. Exam preparation	

ii) Breadth of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to make novel applications of basic knowledge. Exposition of logical structure. Ability to generalise and specialise.	Lectures, tutorials, problem classes, marked assignments. Computer practical classes.	Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of feedback. Exam preparation	Written examination; Departmental tests; On-line, tests and quizzes; Written and computational problems; Assessed presentations and poster presentations.
Students should be able to apply proof techniques and apply an algorithm for the solution of a standard problem.	As above	As above	As above
Students should be able to apply theorems to solve particular problems. Mathematical modelling. Application of computer algorithms for solving business and industrial problems.	As above	As above	As above
Students should be able to Apply knowledge of Computer Science and Mathematical techniques to solve problems relevant to the field of Mathematics, Data Science and AI.	As above	As above	As above

iii) Understanding of source materials

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to identify, evaluate, and	Project supervision	Use of library and online resources.	Assessment of Individual and group project reports.

properly utilize different types of information sources in research and academic work	Some assessed material only provided through e-learning resources.	Writing of individual and group project reports.	

b) Cognitive and Practical Skills

i) Selection and analysis of sources

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to conduct background research and literature surveys. Summarise content from information sources.	Project supervision Some assessed material only provided through e-learning resources.	Use of library and online resources. Writing of individual and group project reports.	Assessment of Individual and group project reports.
Students should be able to apply a broad understanding of problems and issues that arise in the location, organization, processing and evaluation of data.	As above	As above Data manipulation, data analysis.	As above
Students should be able to gather and evaluate information to independently gain new knowledge.	As above	As above	As above

ii) Critical engagement

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to analyse problems and select of an appropriate proof or solution strategy.	Lectures, problem classes, feedback on assessed problems, project supervision.	Critical appraisal of solutions. Analyse and solve open-ended problem including 'messily defined' problems and business, industrial orientated problems.	Examinations; Departmental tests; On-line, tests and quizzes; Written and computational problems; Assessed presentations and poster presentations.

iii) Presentation of an argument

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type

Students should be able to demonstrate knowledge and understanding of professional and ethical issues, and aspects of the law, in the context of Computing Professionals.	Resource based learning. Study skills booklet. Guest Speakers Structured support decreasing through years. Induction library session. Study skills handbook. Project supervision.	Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of feedback. Exam preparation	Examinations; Assessed problems; project assessments. Project reports. Destinations data. With industry variant: Industrial placement record book including formal report on placement Successful feedback from placements.
Students should be able to make and justify decisions based on the sustainability (e.g. ecological impact) of a proposed solution.	As above	As above	As above
Students should be able to present results (both informal and to a variety of audiences), participation in scientific discussion.	Tutorials, Group workshops, Presentation workshops, project supervision. Feedback on assessed written pieces Guidance from project supervisor.	Preparation of presentation materials. Preparation of solutions to problems. Report writing.	Group presentations. Project presentations. Assessed essays. Project presentation.
Students should be able to write coherent reports. Software presentation.	As above	As above	As above

iv) Independent research

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to implement a personal plan of work to meet a deadline	Resource based learning. Study skills booklet. Structured support decreasing through years. Induction library session. Study skills handbook. Project supervision.	Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of feedback. Exam preparation. Report writing.	Examinations; Assessed problems, Project assessments; Project reports; Destinations data.

Students should be able to contribute to project design.	Project supervision	Gantt chart and activity planning.	Project reports.

v) Relevant technical skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to apply their understanding of a programming language and software.	Computer practical classes, resources for self-study.	Learning programming syntax; Programming environments; Debugging and error fixing; Validation and Verification; Algorithmic Development.	Departmental tests; Computational Assessed problems; Projects.
Students should be able to apply their knowledge of mathematical, AI, and data analytics software such as Python, R, MATLAB and Frameworks such as Tensorflow	Lab classes, and purpose designed handbooks. Group projects. Project and lectures, eLearning.	Programming and algorithmic development. Data analysis and interpretation. Graphical presentation	Assessed problems; Projects; Project reports. Written examinations and presentations.
Students should be able to apply mathematical modelling skills and the language of data analytics	As above	As above	As above

vi) Autonomous working

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to work independently and develop good time management skills	Resource based learning. Study skills booklet. Structured support decreasing through years. Induction library session. Study skills handbook. Project supervision.	Working through problem sheets and exercises; Completion of on-line exercises, tests and quizzes; Creation and presentation of posters; Review of feedback. Exam preparation	Examinations, assessed problems, project assessments. Meeting deadlines. Project reports. Destinations data.

vii) Presentation of research findings

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to present technical information to peers and tutors in an appropriate form, and deliver presentations to non-mathematical audiences	Tutorials, workshops. Project supervision, presentation workshops. With industry variant: Presentation opportunities on placement where applicable	Creating slides and presentation material. Time keeping. Presentation skills. Report writing. Keeping accurate records. Poster presentations	Presentation assessment.
Students should be able to respond to questions on presentations	As above	Presentation skills.	As above.

c) Transferable skills

i) Verbal, written and digital communication

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to demonstrate fluent and sustained scientific, technical and business communication.	Tutorials, workshops. Project supervision, presentation workshops. With industry variant: Presentation opportunities on placement where applicable	Creating slides and presentation material. Time keeping. Presentation skills. Report writing. Keeping accurate records.	Presentation assessment.
Students should be able to respond to technical questions with accurate and concise answers.	As above	As above	As above
Students should be able to write mathematical reports and other forms of written communication.	Project supervisions. Tutorials.	Report writing. Keeping accurate records.	Assessed reports. Assessed questions. With industry variant: Industrial placement record book including formal report on placement
Students should be able to use Windows and Linux, when appropriate and be able to use of specialist software packages and frameworks. Office software.	Induction. Laboratories.	Use of different operating systems. Writing of reports, presentations. Programming and Algorithmic development. Generating graphical	Marked project work. Project reports Assessed coursework. With industry variant: Industrial placement record book including

		representations. Performing simulations.	formal report on placement
Students should be able to understand and articulate the limitations of Information Technology, especially when storing and processing large quantities of data.	As above	As above.	As above
Students should be able to use generative AI in a responsible and ethical manner	Induction, lectures, tutorials, laboratories.	Understanding expectations for AI for use in assessments. Promoting critical thinking about, and fact checking of AI-generated outputs. Understanding data privacy and managing data identities.	All assessments except for invigilated exams and class tests. See University policy of generative artificial intelligence in learning, teaching and assessment.

ii) Numeracy

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to demonstrate use of analytical and graphical methods.	Induction. Laboratories.	Programming and Algorithmic development. Generating graphical representations. Performing simulations.	Written examinations, project reports.

iii) Self-reflection

Intended Learning Outcome	Module Code	Teaching methods	Learning Activities	Assessment Type
Students should be able to reflect on what they have learnt and how it improves their understanding.	Core: MA1300	Lectures, problem/lab classes.	Write reflective journal In the context of problem solving: Review of fundamental mathematics; Group work presentation of problem solutions in groups; introduction to visualization and presentation tools	Reflective journal

Students should be able to reflect on their contribution to group work.	Core: MA3582	Project supervision	Group research project.	Peer assessment Reflective commentary

iv) Problem solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to analyse, breakdown, synthesize, undertake critical examination.	Lectures, problem workshops, group work, projects.	Development of mathematical modelling skills. Problem/question sheets. Exam preparation. Programming and algorithmic development Review of fundamental mathematics; Group work presentation of problem solutions in groups; introduction to visualization and presentation tools	Marked problems, assessed group work, project assessment. Reflective journal.
Students should be able to solve a variety of small and large problems through the integration of knowledge of Mathematics, and Computer Science.	As above	As above	As above
Students should be able to describe a systematic approach to analysing and solving data-science problems and apply these to new problems	As above	As above	As above
Students should be able to solve novel problems creatively	As above	As above	As above
Students should be able to identify changes in mathematical thinking: how they approach and explain problems, and present solutions	As above	As above	As above

v) Organisation and management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type

Students should be able to organise their time effectively.	Prioritisation of activities. Group project supervision.	Time management Group problem solving. Group projects.	Group assessment (including peer assessment).

vi) Teamwork

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to participate in scientific discussion and to communicate effectively with other team members.	Group project supervision	Group problem solving. Group Project	Group assessment (including peer assessment).

Year in Industry

In addition, for the Year in Industry' variants the additional programme outcomes apply

Year Abroad

In addition, for the 'with a Year abroad' variants the additional programme outcomes apply

Progression points
This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of Senate Regulation 5 governing undergraduate programmes relevant to the year of entry.

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

Provided students have completed all core modules, students can transfer between the different BSc Mathematics programmes.

b) Year abroad

For the Year Abroad variant (for experiential Year Abroad only) the additional progression points apply

c) Year in Industry

For the Year in Industry variant, the additional progression points apply

9. Criteria for award and classification

This programme follows the standard scheme of undergraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation 5 governing undergraduate programmes* relevant to the year of entry.

10. Special features

This programme provides the skills and knowledge to interpret, understand and make recommendations using tools of data science and AI. It provides the data analysis and computational skills needed to develop new strategies for extracting knowledge from big data sets and training in the use techniques of data science and AI. Additionally, it provides a solid foundation in the mathematics and algorithms that underpin these tools so that students can contribute to the further development of these techniques. As such, it provides a wide range of mathematical and computational skills to allow students to graduate into a wide range of roles.

For the Year Abroad variant (for experiential Year Abroad only) the additional Special Features apply

For the Year in Industry variant. The University recognises that undertaking a work placement as part of the programme of study can enhance career prospects and provide added value, and as such this programme includes a 'year in industry' variant.

By experiencing real-world scenarios and applying skills and knowledge to a professional environment, students can gain a unique insight into how their studies can be utilised in industry. This will not only showcase their abilities to future employers but will also enhance their studies upon returning to university to complete their programme.

To understand the special features for year in industry undergraduate programme variants, this programme specification should be read in conjunction with the programme specification content which can be found here. This outlines details including programme aims, support, progression and duration.

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
	While this programme provides the skills and knowledge required to develop machine learning algorithms for data analysis within industry or research, it provides a foundational knowledge of mathematics and computational skills that will allow students to graduate into a wide range of roles.
Research-briefed Bringing staff research content into the curriculum.	*Research-briefed:* Students will be exposed to a number of fundamental concepts and methods all of which are actively being used as foundations of current research, as well as of industry. For each of these concepts and theories the students will be shown how to apply and reproduce main theorems, and introduced to a range of subjects such as linear algebra, calculus, probability, and statistics
Research-based Framed enquiry for exploring existing knowledge.	*Research-based:* During problem classes, students will have an opportunity to put in practice their ability to: generalise and specialise applications of basic knowledge, apply algorithms and theorems for the solution of specific problems.
Research-oriented Students critique published research content and process.	*Research-oriented:* Students will be supported to conduct background research and literature surveys, and summarise content from information sources. They will be able to learn from e-learning resources. Students will then be able to apply the acquired knowledge to analyse models and provide a critical appraisal for solutions.
Research-apprenticed Experiencing the research process and methods; building new knowledge.	*Research-apprenticed:* Students will work individually or in groups to conduct research or to identify a problem that can be solved with the implementation of advanced mathematical, data science, and analytical skills. Students will have the opportunity to present their work and process, and be challenged on choices that they made throughout the development of the project.

As part of studying at a research-intensive university, students on this programme have the following extra or co-curricular opportunities available to them to gain exposure to research culture:

Some of the extra or co-curricular opportunities that are available to students to help them gain exposure to the research culture in the School include:

- **Student Maths Society (SUMS)**: The School has an active society, which is fully run and governed by students. SUMS organizes a range of mathematics-related events, including invited talks from external speakers.
- **Mathematics Competitions**: The School supports and trains student teams for both internal and international mathematics competitions, such as Mathematical Contest in Modelling (MCM) and Interdisciplinary Contest in Modelling (ICM).

- **Career Development Sessions**: Throughout the term, the School schedules subject-specific career drop-in sessions, which are added to the students' timetables.
- **Research Seminars**: The School organizes weekly research seminars, inviting experts from other universities to present their work. These seminars are open to all students, both on-campus and online via Teams.

Teaching on this programme will be research-informed (it draws consciously on systematic inquiry into the teaching and learning process itself) in the following way:

The School supports all staff involved in teaching to gain an accredited Higher Education teaching qualification, in which they demonstrate their use of teaching theory to support their own practice and reflect on their current teaching and continuing professional development.

All module convenors are part of teaching pods, which group similar fields together. These pods are designed to provide a forum for discussion between teaching-focussed and teaching/research staff, and as a way for more experienced staff to support others by, for example, peer observation and feedback. This provides a platform for staff to share considerations and observations of their teaching experience and obtain research-based input.

Teaching staff meet once a year for a 'Teaching Away Day', which gives the opportunity to discuss some key issues in depth with the other members within the teaching pods, and shared with everyone. This gives a chance to share ideas and experience, and to identify questions that need answers.

Additionally, staff will be paired within their teaching pods to observe each other's teaching sessions then meet to agree actions in order to participate in UoL's Peer Observation of Teaching scheme.

10b. Work-related learning

The workload of all students on this programme includes the opportunity to engage with *at least* 100 hours of employer informed, work-related learning activity. Further information regarding work-related learning is available online.

11. Indications of programme quality

- The programme will be subject to standard University of Leicester procedures for quality assessment, including Annual Developmental Review, Periodic Developmental Review, Quality Office review, liaison with College Academic Committee, and the programme will report to the Mathematics and Informatics departments' Learning and Teaching Committees.
- An External Examiner will be appointed according to Senate regulations 7.18-7.60.
- There will be systematic, regular evaluation by students registered with the programme, including anonymous evaluation of sessions and modules.
- A representative from this programme (both with and without industry variants) will be appointed to each of the Student Staff Committees for Mathematics and Computing (1 rep goes to each).
- The programme's teaching staff will engage with University procedures for peer assessment of teaching and marking.
- New members of academic teaching staff are required to complete formal teaching (e.g. PGCAPP) and work towards an FHEA as part of their probationary period.

12. 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].

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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.

BSc Mathematics with Data Science and Artificial Intelligence

Level 4/Year 1 2026/27

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	n/a	60 credits	60 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 1	MA1015	Calculus and Analysis 1	15 credits
Semester 1	MA1115	Linear Algebra 1	15 credits
Semester 1	MA1300	Fundamentals of University Mathematics	15 credits
Semester 1	CO1102	Programming Fundamentals	15 credits
Semester 2	MA1016	Calculus and Analysis 2	15 credits
Semester 2	MA1116	Linear Algebra 2	15 credits

Delivery period	Code	Title	Credits
Semester 2	MA1261	Probability and Statistics	15 credits
Semester 2	CO1107	Algorithms, Data Structures and Advanced Programming	15 credits

Notes
n/a

Level 5/Year 2 2027/28

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	n/a	45 credits	45 credits
Optional	n/a	15 credits	15 credits

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 1	MA2032	Vector Calculus	15 credits
Semester 1	MA2403	Statistical Distributions and Inference	15 credits
Semester 1	MA2419	Fundamentals of Data Science*	15 credits
Semester 2	MA2041	Mathematical Foundations of AI and Machine Learning	15 credits
Semester 2	MA2206	Statistical Data Analysis	15 credits
Semester 2	MA2420	AI for Data Science	15 credits

Option modules

Delivery period	Code	Title	Credits
Semester 1	MA2132	Advanced Linear Algebra	15 credits

Delivery period	Code	Title	Credits
Semester 1	MA2042	Advanced Discrete Mathematics	15 credits
Semester 1	MA2252	Introduction to Computing	15 credits
Semester 2	MA2511	Industrial Applications of Mathematics	15 credits
Semester 2	C02106	Data Analytics	15 credits
Semester 2	MA2021	Differential Equations and Dynamics	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules. Whilst a number of modules have been presented above, the School only offer modules subject to a minimum of 10 student enrolments to ensure operational efficiency.

Level 6/Year 3 2028/29

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	30 credits	15 credits	15 credits
Optional	n/a	30 credits	30 credits

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	MA3582	Mathematics and Data Science Project	30 credits
Semester 1	MA3081	Machine Learning for Data Analysis and AI	15 credits
Semester 2	MA3022	Data Mining and Neural Networks	15 credits

Notes
n/a

Option modules

Delivery period	Code	Title	Credits
Semester 1	MA3404	Markov Processes	15 credits
Semester 1	MA3080	Mathematical Modelling	15 credits
Semester 1	MA3077	Operational Research	15 credits
Semester 1	MA3012	Scientific Computing	15 credits
Semester 1	MA3471	Financial Engineering	15 credits
Semester 1	CO3101	Computers, Society and Professionalism	15 credits
Semester 1	CO3091	Computational Intelligence and Software Engineering	15 credits
Semester 2	MA3201	Generalized Linear Models	15 credits
Semester 2	MA3202	Introduction to Functional Data Analysis	15 credits
Semester 2	MA3082	Nonlinear Optimisation	15 credits
Semester 2	MA3121	Complex Analysis	15 credits
Semester 2	MA3511	Communicating Mathematics	15 credits
Semester 2	CO3002	Analysis and Design of Algorithms	15 credits

Notes

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules. Whilst a number of modules have been presented above, the School only offer modules subject to a minimum of 10 student enrolments to ensure operational efficiency.

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Appendix 2: Module specifications

See undergraduate module specification database [log-in required] (Note - modules are organized by year of delivery).