Programme Specification (Undergraduate) FOR ENTRY YEAR: 2023/24

Date created: n/a **Last amended:** Click or tap to enter a date. **Version no.** 1

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

BSc Mathematics

a) HECOS Code

HECOS Code	%

b) UCAS Code (where required)

G100

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based in Panjin Campus DUT.

4. Registration periods:

BSc Mathematics

The normal period of registration is 4 years

The maximum period of registration 6 years

5. Typical entry requirements

All students that have followed the Chinese school and qualification system must be from the same Gaokao group (the top group out of four) as students entering other DUT undergraduate programmes. Students must also possess a sufficient level of English language to enable such students to undertake studies with the English language as the teaching medium;

For Year 1 entry, a Gaokao English language score of 70% for English language or an IELTS score of 5.0 will be required. After intensive English language teaching in Year 1, students will be required to demonstrate CEFR Level B2 in English language (otherwise IELTS 6.0).

6. 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.

7. Programme aims

A The programme aims to

- to provide students with direct experience of a UK-style degree programme

- to enhance and develop the students' English language skills
- foster confidence, convey knowledge and develop expertise in mathematics, including an appreciation of the usefulness of mathematics;
- provide an education and training in mathematics which includes fundamental concepts and gives an indication of the breadth of mathematics;
- 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;
- 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,
- develop written communication skills and 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 mathematical study;
- develop the ability to complete an independent project;

8. Reference points used to inform the programme specification

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

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) Mastery of an appropriate body of knowledge

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Knowledge of basic theory, basic techniques of analysis, algebra, applied mathematics, and statistics.	Lectures, specified reading, problem classes, surgeries, poster presentations. In addition, elements of e-Learning are incorporated.	Written examinations, assessed written and computational problems. Assessed oral and poster presentations.
Ability to recognise sound argumentation and valid proofs.	Lectures, specified reading, problem classes, surgeries, poster presentations. In addition, elements of e-Learning are incorporated.	Assessed written projects and problem sheets and seminar discussions.
Knowledge of basic techniques, and model problems.	Lectures, specified reading, problem classes, surgeries, poster presentations. In addition, elements of e-Learning are incorporated.	Assessed written projects and problem sheets and seminar discussions.
Knowledge of a computing languages and software.	Computer practical classes.	Assessed practical classes.

ii) Understanding and application of key concepts and techniques

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Novel applications of basic knowledge. Exposition of logical structure. Ability to generalise and specialise.	Lectures, tutorials, problem classes, marked assignments.	Written examination, assessed problems, project report.
Proof techniques. Ability to apply an algorithm for the solution of a standard problem.	Lectures, tutorials, problem classes, marked assignments	Written examinations, assessed problems.
Ability to apply theorems to solve particular problems. Mathematical modelling. Application of computer algorithms for solving finance problems.	Computer practical classes.	Assessed practical classes.

iii) Critical analysis of key issues

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Analysis of problem and selection of appropriate proof or solution strategy. Critical appraisal of solutions. Analyse and solve more `messily defined' finance management problems. Analysis of IT problems.	Lectures, problem classes, feedback on assessed problems, project supervision.	Written examinations, assessed problems, Project report.

iv) Clear and concise presentation of material

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Presentation of 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.	Group presentations. Project presentations.
Ability to write coherent reports. Software presentation.	Guidance from project supervisor.	Assessed essays. Project presentation.

v) Critical appraisal of evidence with appropriate insight

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Project design.	Project supervision	Project reports.

vi) Other discipline specific competencies

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Knowledge of mathematical software such as MATLAB and MAPLE.	Lab classes, and purpose designed handbooks.	Log books of practical sessions. Reflective blogs. Use of Maple in basic skills tests.
Mathematical modelling skills. Language of finance.	Group projects. Project and lectures, eLearning.	Project reports. Written examinations and presentations.

b) Transferable skills

i) Oral communication

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Response to questioning	Tutorials, workshops.	Presentation assessment.
Scientific communication	Tutorials, workshops.	Presentation assessment.
Project and poster presentation	Project supervision, presentation workshops.	Presentation assessment.

ii) Written communication

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Report writing.	Project supervisions.	Assessed reports.
Mathematical communication	Tutorials.	Assessed questions.

iii) Information technology

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Use of Windows. Use of specialist packages. Office software.	Induction. Laboratories.	Marked project work. Project reports.

iv) Numeracy

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Use of analytical and graphical methods.	Throughout	Written examinations, project reports.

v) Team working

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Scientific discussion. Organization, time management	Group problem solving. Group projects.	Group assessment (including peer assessment).

vi) Problem solving

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Analysis, breakdown, synthesis, critical examination. Mathematical modelling skills.	Lectures, problem workshops, group work, projects.	Marked problems, group work assessment, project assessment.

vii) Information handling

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Conduct background research and literature surveys. Summarise content from information sources.	Project supervision.	Individual and group project reports.
Ability to learn from e-learning resources.	Blackboard stored e-learning resources.	Some assessed material only provided through e-learning resources.

viii) Skills for lifelong learning

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Study skills.	Resource based learning. Study skills booklet.	Examinations, assessed problems, project assessments.
Independence and time management.	Structured support decreasing through years.	Meeting deadlines.
Careers and business awareness.	Guest speakers.	
Information retrieval.	Induction library session. Study skills handbook. Project supervision.	

10. Progression points

here are two progression points in each academic year: end of Semester 1 and end of Semester 2 of the DUT-DLI teaching calendar. A progression decision is made by the DLI Board of Examiners on the basis of the Semester 1 exam/resit results in March and Semester 2 exam/resit results in July each year. Where it is known following Semester 1 that a student has not met the requirements to progress to the next year, they may be required to suspend their studies at that stage.

Students who fail any modules in year 1 will be eligible for one re-sit of the assessment. The timing of this re-sit will depend on the semester in which the module is taught.

If a student passes all 120 UoL credits in year 1 they will proceed to year 2.

In order progress between year 1 and year 2 of the programmes offered through the DLI students will be required to pass all language modules. Students who fail to pass all of the English language after one re-sit attempt will be permitted to undertake a repeat of the first year of the programme in the subsequent academic year. If they pass the English language at this stage and meet other progression requirements as set out below, they will be permitted to proceed.

If a student passes all of the English language modules and 30 UoL credits of the theory modules in year 1 they will be permitted to proceed to the next year and re-sit the assessment associated with the failed module.

If a student passes all of the English language modules and 15 UoL credits of the theory modules in year 1 they will be permitted to undertake a repeat of the first year of the programme in the subsequent academic year.

If a student fails more than 45 UoL credits of theory modules in the first year, following re-sit, they will not be permitted to proceed on the programme.

A student who fails to meet the above requirements, following any permissible re-sit opportunities and repeat year, will not be permitted to proceed on the dual DUT/UoL programme. Students in this position will not be eligible for transfer to another UoL programme. Any transfer onto alternative programmes offered by DUT will be at the discretion of that institution.

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

Students not satisfying the UoL progression requirements may be allowed to transfer onto DUT programmes.

Students satisfying the UoL progression requirements may be allowed to transfer to the University of Leicester campus-based BSc degree programme, subject to capacity and physical resource limitations on the UoL campus.

11. 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.

12. Special features

Programme delivered entirely in English, UK-style facilities provided on Panjin campus, Small group tutorials via video conferencing, group problem solving, research based projects, problem based learning, Reflect lecture capture.

13. Indications of programme quality

Positive comments from external examiner.

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]

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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.

BEng Mechanical Engineering

Level Choose an item./Year 1 **2023/24**

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	Choose an item.	60 credits	Choose an item.
Optional	Choose an item.	60 credits	Choose an item.

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	EL0002	UNIVERSITY ENGLISH 1: SPEAKING AND LISTENING	15 credits
Sem 1	EL0003	UNIVERSITY ENGLISH 2: READING AND WRITING	15 credits
Sem 1	EL0004	UNIVERSITY ENGLISH 3: PROJECT	15 credits
Sem 1	MA0006	INTRODUCTION TO MATHEMATICAL SCIENCE	15 credits
Sem 2	EL0005	ENGLISH FOR SPECIFIC ACADEMIC PURPOSES	15 credits
Sem 2	MA0008	INTRODUCTION TO COMPUTER PROGRAMMING	30 credits

Delivery period	Code	Title	Credits
Sem 2	MA0007	ANALYTIC GEOMETRY	15 credits

Notes

Additional Non-Credit Bearing Modules

Delivery period	Code	Title	Credits
Sem 1		MORAL CULTIVATION AND BASIC LAW	n/a
Sem 1		PHYSICAL EDUCATION I	n/a
Sem 1		MILITARY THEORY AND TRAINING	N/A
Sem 2		CHINESE MODERN CONTEMPORARY HISTORY AND SITUATION POLICY	N/A
Sem 2		MILITARY THEORY AND TRAINING	N/A
Sem 2		PRINCIPLE OF MARXISM	N/A

Level 4/Year 2 2024/25

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	60 credits	30 credits	30 credits
Optional	Choose an item.	Choose an item.	Choose an item.

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	MA1014	CALCULUS & ANALYSIS	30 credits
Year long	MA1114	LINEAR ALGEBRA	30 credits

Delivery period	Code	Title	Credits
Sem 1	MA1061	PROBABILITY	15 credits
Sem 1	CO1107	ALOGRITHM, DATA STRUCTURES AND ADVANCED PROGRAMMING	15 credits
Sem 2	MA1202	INTRODUCTORY STATISTICS	15 credits
Sem 2	CO1109	BUSINESS AND FINANCIAL COMPUTING	15 credits

Notes
N/A

Additional Non-Credit Bearing Modules

Delivery period	Code	Title	Credits
Sem 1		MARXISM	n/a
Sem 1		EXTENSION OF CALCULUS AND ANALYSIS	n/a
Sem 1		DUT OPTIONAL MODULE	N/A
Sem 1		PHYSICAL EDUCATION II	N/A
Sem 2		MAO ZEDONG THOUGHTS AND THE SYSTEM OF THEORY OF SOCIALISM WITH CHINESE CHARACTERISTICS	N/A
Sem 2		EXTENSION OF CALCULUS AND ANALYSIS 2	N/A
Sem 2		PHYSICS I	N/A
Sem 2		LANGUAGE AND SKILLS SUPPORT	N/A
Sem 2		XI JINPING'S SYSTEM OF THEORY OF SOCIALISM WTH CHINESE CHARACTERISTICS	N/A

Level 5/Year 3 2025/26

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	Choose an item.	60 credits	60 credits
Optional	Choose an item.	Choose an item.	Choose an item.

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	MA2252	INTRO TO COMPUTING	15 credits
Sem 1	MA2032	VECTOR CALCULUS	15 credits
Sem 1	MA2132	ADVANCED LINEAR ALGEBRA	15 credits
Sem 1	MA2041	MATHEMATICAL FOUNDATION OF MACHINE LEARNING	15 credits
Sem 2	MA2404	MARKOV PROCESSES	15 credits
Sem 2	MA2133	ALGEBRA	15 credits
Sem 2	MA2261	LINEAR STATISTICAL MODELS	15 credits

Notes
N/A

Additional Non-Credit Bearing Modules

Delivery period	Code	Title	Credits
Sem 1		PHYSICS II & LAB	n/a
Sem 2		PROCESS MACHINERY AND EQUIPMENT	n/a

Delivery period	Code	Title	Credits
Sem 2		REAL ANALYSIS	n/a

Level 6/Year Final 2026/27

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	Choose an item.	60 credits	60 credits
Optional	Choose an item.	Choose an item.	Choose an item.

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	MA3007	OPERATIONAL RESEARCH	15 credits
Sem 1	MA3002	EQUATIONS OF MATHEMATICAL PHYSICS	15 credits
Sem 1	MA3012	SCIENTIFIC COMPUTING	15 credits
Sem 1	MA3071	FINANCIAL MATHEMATICS	15 credits
Sem 2	MA3022	DATA MINING AND NEURAL NETWORKS	15 credits
Sem 2	MA3121	COMPLEX ANALYSIS	15 credits
Sem 2	MA3516	MATHEMATICS PROJECT	30 credits

Notes
n/a

Appendix 2: Module specifications

See undergraduate module specification database (Note - modules are organized by year of delivery).

Appendix 3: Skills matrix