UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate)

2019/20 Entry

Date amended: August 2019

1. Programme Title(s) and UCAS code(s):

BSc Mathematics G100

2. Awarding body or institution:

University of Leicester

3. a) Mode of study:

Full-time

b) Type of study:

Campus-style based in Panjin Campus, DUT

4. Registration periods:

The normal period of registration is four years

The maximum period of registration is six 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:

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 Framework for Higher Education Qualifications in England, Wales and Northern Ireland
- QAA Benchmarking Statement Mathematics, Statistics and Operational Research (MMath)
- QAA Annex to subject benchmark statement: Mathematics, statistics and operational research (2009)
- PDR report (April 2011)
- University Learning Strategy
- University Employability Strategy
- NSS Survey (2015)
- First Destination Survey
- External Examiner's Reports

UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate)

9. Programme Outcomes:

Intended Learning Outcomes with Foundation	Teaching and Learning Methods	How Demonstrated?
(i) Mastery of an appropriate body of knowledge		
Knowledge of basic theory, basic techniques of analysis, algebra, applied mathematics, and statistics. Ability to recognise sound argumentation and valid proofs. Knowledge of basic techniques, and model problems. Knowledge of a computing languages and software.	Lectures, specified reading, problem classes, surgeries, poster presentations. In addition, elements of e-Learning are incorporated. Computer practical classes.	Written examinations, assessed written and computational problems. Assessed oral and poster presentations. Assessed written projects and problem sheets and seminar discussions. Assessed practical classes.
(ii) Understanding and application of key concepts and techniques		
Novel applications of basic knowledge. Exposition of logical structure. Ability to generalise and specialise. Proof techniques. Ability to apply an algorithm for the solution of a standard problem. Ability to apply theorems to solve particular problems. Mathematical modelling. Application of computer algorithms for solving finance problems.	Lectures, tutorials, problem classes, marked assignments. Lectures, tutorials, problem classes, marked assignments. Computer practical classes.	Written examination, assessed problems, project report. Written examinations, assessed problems. Assessed practical classes.
(iii) Critical analysis of key issues		
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		
Presentation of results (both informal and to a variety of audiences), participation in scientific discussion. Ability to write coherent reports. Software presentation.	Tutorials, Group workshops, Presentation workshops, project supervision. Feedback on assessed written pieces. Guidance from project supervisor.	Group presentations. Project presentations. Assessed essays. Project presentation.
(v) Critical appraisal of evidence with appropriate insight		

Date amended: 08 March 2019

Project design.	Project supervision	Project reports.
Intended Learning Outcomes	**Teaching and Learning Methods**	**How Demonstrated?**
(vi) Other discipline specific competencies		
Knowledge of mathematical software such as MATLAB and MAPLE. Mathematical modelling skills. Language of finance.	Lab classes, and purpose designed handbooks. Group projects. Project and lectures, eLearning.	Log books of practical sessions. Reflective blogs. Use of Maple in basic skills tests. Project reports. Written examinations and presentations.
(b) Transferable skills		
(i) Oral communication		
Response to questioning Scientific communication Project and poster presentation	Tutorials, workshops. Tutorials, workshops. Project supervision, presentation workshops.	Presentation assessment.
(ii) Written communication		
Report writing. Mathematical communication	Project supervisions. Tutorials.	Assessed reports. Assessed questions.
(iii) Information technology		
Use of Windows. Use of specialist packages. Office software.	Induction. Laboratories.	Marked project work. Project reports.
(iv) Numeracy		
Use of analytical and graphical methods.	Throughout	Written examinations, project reports.
(v) Team working		
Scientific discussion. Organization, time management	Group problem solving. Group projects.	Group assessment (including peer assessment).
(vi) Problem solving		
Analysis, breakdown, synthesis, critical examination. Mathematical modelling skills.	Lectures, problem workshops, group work, projects.	Marked problems, group work assessment, project assessment.
(vii) Information handling		
Conduct background research and literature surveys. Summarise content from information sources. Ability to learn from e-learning resources.	Project supervision. Blackboard stored e-learning resources.	Individual and group project reports. Some assessed material only provided through e-learning resources.
(viii) Skills for lifelong learning		

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

10. Progression points:

Students must pass the English language modules in year 1. In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course.

Transfer between different degrees: Students not satisfying the UoL progression requirements may be allowed to transfer onto DUT programmes.

UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate)

11. Scheme of Assessment

The programme follows the standard scheme of award and classification set out in Senate Regulation 5.

12. Special features:

Programme delivered entirely in English, Western-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 Examiners

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports can be found here.

FIRST YEAR: 2019-20

SEMESTER ONE	SEMESTER TWO
EL0234 English For General Academic Purposes (45cr)	EL0005 English for Specific Academic Purposes (15cr)
MA0006 Introduction to Mathematical Science (15cr)	MA0008 Introduction to Computing and Programming (30cr)
Moral Cultivation and Basic Law (0cr)	MA0007 Analytic Geometry (15cr)
Military Theory and Training (0cr)	Chinese Modern and Contemporary History & Situation Policy (0cr)
Physical Education 1 (0cr)	Physical Education 2 (0cr)
	Optional Module 1 (0cr)
Total Credits = 60	**Total credits = 60**

SEMESTER THREE
College Student Mental and Health Education (0cr)
Total Year Credits - 120

SECOND YEAR: 2020-21

SEMESTER ONE	SEMESTER TWO
MA1014 Calculus & Analysis (30cr)	MA1254 Mathematics in Business (15cr)
MA1061 Probability (15cr)	MA1202 Introductory Statistics (15cr)
CO1107 Algorithm, Data Structures and Advanced Programming (15cr)	MA1114 Linear Algebra (30cr)
Marxism (0 cr)	The System of Theory of Socialism with Chinese Characteristics (0cr)
Optional Module 2 (0 cr)	Physics I (0)
Total Credits = 60	**Total Credits = 60**

SEMESTER THREE

Date amended: 08 March 2019

Laboratory Physics (0 cr)
Total Year Credits – 120

THIRD YEAR: 2021-22

SEMESTER ONE	SEMESTER TWO
MA2252 Intro to Computing (15 cr)	MA2404 Markov Processes (15cr)
MA2032 Vector Calculus (15cr)	MA2133 Algebra (15cr)
MA2132 Advanced Linear Algebra (15 cr)	MA2261 Linear Statistical Models (15cr)
MA2041 Mathematical Foundation of Machine Learning (15 cr)	MA2021 Differential Equations (15cr)
Physics II (0cr)	Real Analysis (0cr)
Total Credits = 60	**Total Credits = 60**

SEMESTER THREE
Optional Module 3 (0cr)
Total Year Credits - 120

FOURTH YEAR: 2022-23

SEMESTER ONE	SEMESTER TWO
MA3077 Operational Research (15cr)	MA3121 Complex Analysis (15cr)
MA3002 Equations of Mathematical Physics (15cr)	MA3012 Scientific Computing (15cr)
MA3071 Financial Mathematics (15cr)	MA3516 Mathematics Project (30cr)
MA3022 Data Mining and Neural Networks (15cr)	
Optional Module 4 (0cr)	Functional Analysis (0cr)
Total Credits = 60	**Total Credits = 60**
Total Year Credits - 120	

Appendix 1: Programme structure (programme regulations)

Appendix 2: Module specifications

See module specification database http://www.le.ac.uk/sas/courses/documentation

Appendix 3: Skills matrix

(See separate document)

Date amended: 08 March 2019