Queen Mary
University of London

Programme Specification (UG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and programme title:	BSc Mathematics with Foundation
Name of interim award(s):	Foundation Certificate (FdCert) - as an exit award only
Duration of study / period of registration:	4 years
QMUL programme code / UCAS code(s):	GGX2, USEF-QM4MTH1, USMAS
QAA Benchmark Group:	
FHEQ Level of Award :	Level 3
Programme accredited by:	
Date Programme Specification approved:	13 Jan 2022
Responsible School / Institute:	School of Mathematical Sciences

Schools / Institutes which will also be involved in teaching part of the programme:

School of Biological & Behavioural Sciences

School of Physical & Chemical Sciences

School of Electronic Engineering & Computer Science

School of Languages, Linguistics & Film

Collaborative institution(s) / organisation(s) involved in delivering the programme:

Programme outline

The BSc Mathematics with Foundation provides an alternative route onto a Mathematical Science degree, combining a foundation year with a traditional university degree in an integrated four-year programme (1+3). QMUL offers tailored pathways for subjects across science and engineering integrated with a Foundation year.

BSc Mathematics with Foundation is open to home/EU and international students and face-to-face sessions are taught entirely at the Mile End campus by university staff. In-line with Queen Mary's 2030 Strategy, high quality learning resources and interactive sessions with academic staff will be available online. As a foundation student, you have access to all QMUL's facilities and will be a full-time student of the university. Both UK/EU and international students should apply directly through UCAS.

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Highlights:

- Opportunity to progress onto Mathematics undergraduate degrees
- Study at campus-based university within easy reach of all of London's attractions
- Eligible for funding through Student Loans Company (UK/EU students only)
- Full access to all student facilities (academic, welfare, IT, library, social and sport)
- Experienced and well-qualified teaching staff, many of whom teach on undergraduate and postgraduate programmes

Aims of the programme

The foundation year will equip you with the skills and knowledge to undertake an undergraduate degree in mathematical sciences. Successful completion of this programme at the appropriate level guarantees you a place on a range of undergraduate programmes in the School of Mathematical Sciences including:
Mathematics BSc
Pure Mathematics BSc
Mathematics and Statistics BSc
Mathematics with Actuarial Science BSc
Mathematics with Finance and Accounting BSc
These degree programmes can also be taken with the option of a year abroad or professional placement.

What will you be expected to achieve?

In order to progress onto the next year of study, you will be expected to:
- Pass 105 credits (7 modules) including SEF030 Communication in Science and Technology, SEF041 Mathematics B, SEF015 Discrete Mathematics and SEF026 Essential Foundation Mathematics.
- Achieve an overall average of 60%, with a weighted average of 60% across SEF041 and SEF015.

For progression onto particular programmes there may be additional requirements.
Please check the handbook or contact fedu@qmul.ac.uk for more information.

Please note that the following information is only applicable to students who commenced their Level 4 studies in 2017/18, or 2018/19

In each year of undergraduate study, students are required to study modules to the value of at least 10 credits, which align to one or more of the following themes:

- networking

- multi- and inter-disciplinarity

- international perspectives

- enterprising perspectives.

These modules will be identified through the Module Directory, and / or by your School or Institute as your studies progress.

Academic Content:

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A 1	Manage study time more effectively and assimilate information from lectures and other sources in an efficient manner.
A 2	•Develop a wider range of skills for successful study in an academic environment, communicate more effectively both orally and in writing, in English, and be better prepared to give formal presentations and able to participate more actively in seminars.
A 3	Understanding and practical experience in basic programming and related concepts, including expressions, assignment, if and while statements, arrays, functions, simple input and output, sorting and searching algorithms. Understanding of basic programming and underlying theoretical concepts, including language concepts and regular expressions.
A 4	Manipulate simple algebraic expressions and multiply and divide polynomials in one indeterminate.
A 5	Describe and apply the concept of a field to a range of natural phenomena, and describe and apply the theory of waves to a ranger of natural phenomena. Answer qualitative and quantitative questions at an appropriate level on the topics listed in the Module Synopsis.
A 6	Appreciate that arithmetic and the laws of arithmetic for integers and rational numbers have counterparts in the arithmetic of polynomials, propositions and sets and be able to carry out simple calculations. for all the above. Understand how prepositional logic extends propositional logic and be able to recognise and construct simple logical arguments expressed using prepositional logic.

Disciplinary Skills - able to:	
B 1	Present data in reports in a readily-assimilated fashion, and in accord with scientific conventions. Research and write an essay in a suitable style with a suitably referenced bibliography. Express themselves clearly in the language and vocabulary of their subjects and give well prepared oral presentations.
B 2	Solve linear equations, make simple estimations and sort decimals in a given order, convert numbers from numeral form to their word name, and vice-versa. Carry out mixed arithmetical operations in the correct order and calculate the GCD and LCM of pairs of rational numbers.
B 3	Solve simple problems in three dimensional co-ordinate geometry, represent and manipulate complex numbers in various forms, differentiate and integrate a wide range of functions and solve problems involving comparative rates of change. Be able to construct and analyse simple relations using set operations and construct, represent and analyse graphs and appreciate their role in modeling problems of connectivity and partitioning.
B 4	Solve a wide variety of logarithmic, exponential and trigonometric equations, solve problems relating to a circle, parabola, ellipse and hyperbola and apply the remainder theorem and factors to polynomials. Apply differentiation to locate maxima and minima, and sketch simple polynomials and solve problems involving simple rates of change.
B 5	Understanding of key software development processes, including problem solving and specification, pseudo code and tracing a program.

Attributes:	
C 1	To grasp the principles and practices of their field of study.
C 2	To produce analyses which are grounded in evidence.
C 3	To apply analytical skills to investigate unfamiliar problems.
C 4	To work individually and in collaboration with others.

| C 5 | To develop a strong sense of intellectual integrity. |
| C 6 | To acquire substantial bodies of new knowledge. |

How will you learn?

Independent study
For every hour spent at university you will be expected to complete additional hours of independent study. Your individual study time could be spent preparing for, or following up on formal study sessions; reading; assessing data from experiments; completing lab reports; and revising for examinations.

The direction of your individual study will be guided by the formal study and tutorial sessions you attend, along with your reading and assignments. However, we expect you to demonstrate an active role in your own learning by reading widely and expanding your own knowledge, understanding and critical ability.

Independent study will foster in you the ability to identify your own learning needs and determine which areas you need to focus on to become proficient in your subject area. This is an important transferable skill and will help to prepare you for the transition to working life.

How will you be assessed?

To pass a module, you must achieve an overall mark of 40% or above. The overall mark in most modules is based on your performance in both the examination and coursework, the weighting of these two components varies per module.

How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

Structure
The programme structure outlined below is indicative of what you will study. It may change slightly from year to year as new topics are introduced and after we have listened to current student feedback on teaching.

You will take 8 modules in total over two semesters, starting in September.

Year Long Modules
Compulsory module:
SEF041   Mathematics B

Semester 1
Compulsory modules:
SEF026   Essential Foundation Mathematical Skills
SEF030   Communication in Science & Technology

Choose one from:
SEF005   Physics - Mechanics and Materials
SEF034   Computing

Semester 2
Compulsory modules:
SEF006   Physics- Fields and Waves

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SEF015   Discrete Mathematics

Choose one from:
SEF024 Introduction to Engineering
SEF035 Digital Electronics and Computer Systems

Academic Year of Study   FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Communication in Science & Technology	SEF030	15	3	Core	0	Semester 1
Mathematics B	SEF041	30	3	Compulsory	0	Semesters 1 & 2
Essential Foundation Mathematical Skills	SEF026	15	3	Compulsory	0	Semester 1
Physics - Mechanics and Materials	SEF005	15	3	Elective	0	Semester 1
Computing	SEF034	15	3	Elective	0	Semester 1
Physics - Fields and Waves	SEF006	15	3	Compulsory	0	Semester 2
Discrete Mathematics	SEF015	15	3	Compulsory	0	Semester 2
Introduction to Engineering	SEF024	15	3	Elective	0	Semester 2
Digital Electronics and Computer Systems	SEF035	15	3	Elective	0	Semester 2

What are the entry requirements?

UK applicants
Admissions requirements for the BSc Mathematics with Foundation are lower than the requirements for direct entry to a three-year BSc degree course. As a general guide, recent school-leavers must normally have at least BBC from 3 A levels including Mathematics. Applications from mature students will be considered on an individual basis, taking account of both educational background and other relevant experience. For further details, please see the School of Mathematical Sciences web site.

International applicants
Normally you must have completed at least a high school diploma, grade 12, or an equivalent level of schooling in your own country. You must have good high school results and should have studied mathematics to an advanced level. Applications from students with international A-levels in science and mathematics are also welcome.
Students are required to have passed a UKBA Secure English Language Test such as IELTS or TOEFL. The minimum requirements for admission to the are: IELTS 6.0 overall including 5.5 in Writing, Reading, Listening and Speaking; TOEFL 79 overall including 17 in Writing and Listening, 18 in Reading, and 20 in Speaking.

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References are also important. However, each application is assessed individually and international applicants are welcome to contact the School of Mathematical Sciences to discuss their own particular situation before applying.
Further info
For more information, contact us:
Tel: +44 (0)20 7882 5470
email: maths-ug@qmul.ac.uk
www.maths.qmul.ac.uk

For further information you can also call the Enquiries Hotline (UK callers only) on Freephone 0800 376 1800.
International students should contact the Admissions Office:
Tel: +44 (0)20 7882 5511
email: admissions@qmul.ac.uk
www.qmul.ac.uk/international

How will the quality of the programme be managed and enhanced? How do we listen to and act on your feedback?

The Student-Staff Liaison Committee (SSLC) provides a formal means of communication and discussion between the School and its students. The committee consists of student representatives from each year in the School, together with appropriate representation from staff within the School. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. The Student-Staff Liaison Committees meets regularly throughout the year.

The Education Committee advises the School's Director Education on all matters relating to the delivery of taught programmes at school level, including monitoring the application of relevant QM policies and reviewing proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in the committee's work in a number of ways, such as through consideration of student surveys and input from the SSLC.

All schools/institutes operate an Annual Programme Review of their taught undergraduate and postgraduate provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery; the main document of reference for this process is the Taught Programmes Action Plan (TPAP) which is the summary of the school/institute's work throughout the year to monitor academic standards and to improve the student experience. Students' views are considered in this process through analysis of the NSS and module evaluations.

What academic support is available?

Each student is provided with an Advisor who is their main point of contact for advice regarding academic matters and for assistance with pastoral concerns, throughout their whole programme. Students can see their advisors in their office hours or arrange an appointment via email. Moreover, if and when advisors are unavailable or cannot help with a specific problem, the School has several Senior Advisors to assist with student concerns.

The School also operates a PASS (Peer Assisted Study Support) programme for peer guidance.

How inclusive is the programme for all students, including those with disabilities?

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:
• Finding out if you have a specific learning difficulty like dyslexia
• Applying for funding through the Disabled Students' Allowance (DSA)
• Arranging DSA assessments of need
• Special arrangements in examinations
• Accessing loaned equipment (e.g. digital recorders)
• Specialist one-to-one "study skills" tuition
• Ensuring access to course materials in alternative formats (e.g. Braille)

• Providing educational support workers (e.g. note-takers, readers, library assistants)
• Mentoring support for students with mental health issues and conditions on the autistic spectrum.

Programme-specific rules and facts

N/A

Links with employers, placement opportunities and transferable skills

In today's competitive job market, it is not always enough to graduate with a good degree. Employers also expect you to have a range of skills and students take this degree programme because they are interested in both business and finance, and many go on to work for financial institutions and other businesses. Others go on to graduate training schemes in a variety of companies such as Enterprise-Rent-a-Car.

High-level numeracy is one of the most sought-after skills in the workplace and many opportunities are open to a mathematical sciences graduate. During this course students learn to apply mathematical techniques to situations across the sciences and other areas such as finance, computing and engineering. These skills are highly desirable to employers ranging from business and finance to the chemicals and materials industries. Advice and support will be provided to students applying for placements.

Programme Specification Approval

Person completing Programme Specification:	Sarahlouise Lawrence
Person responsible for management of programme:	Dr Mark Walters
Date Programme Specification produced / amended by School / Institute Learning and Teaching Committee:	13 Jan 2022
Date Programme Specification approved by Taught Programmes Board:	13 Jan 2022