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 (Hons) Mathematics with Finance and Accounting BSc (Hons) Mathematics with Finance and Accounting with Year Abroad BSc (Hons) Mathematics with Finance and Accounting with Professional Placement
Name of interim award(s):	CertHE, DipHE
Duration of study / period of registration:	3 years
QMUL programme code / UCAS code(s):	UBSF-QMMATH1-UMMASFAA/G1N4;UBSF-QMMATG1-UMMAAFAY/G1
QAA Benchmark Group:	Mathematics, statistics and operational research
FHEQ Level of Award :	Level 6
Programme accredited by:	N/A
Date Programme Specification approved:	
Responsible School / Institute:	School of Mathematical Sciences

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

School of Business & Management

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

Programme outline

This programme is designed for students who wish to follow a programme in mathematics and statistics with a minor component in finance and accounting. The programme contains compulsory modules in general mathematics, statistics, finance, accounting and business economics, with advanced options in statistics and mathematical finance. It combines training in statistical theory and related areas of mathematics with applications in business. It provides hands-on experience of using statistical packages and presenting reports. Graduates of this programme obtain jobs requiring mathematical and statistical reasoning in diverse areas such as finance, business and government. They may also be suited to further training in economics, statistics and actuarial studies.

Aims of the programme

This programme aims to combine mathematical and statistical training with finance and accounting, including general financial

theory and its applications to business and commerce. It aims to ensure that graduates have enough mathematical background to fully understand the mathematical tools used in finance and accounting, whilst also appreciating the business environment within which the mathematical analysis is applied. Mathematics is extremely important in the business and finance sector and this degree programme aims to ensure that graduates have mathematical knowledge and skills backed up with awareness of how the sector operates.

What will you be expected to achieve?

Students who successfully complete this programme will be expected to achieve all of the learning outcomes listed outcomes shown below.

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:	
A 1	reason clearly, critically and with rigour within a mathematical context, both theoretical and practical;
A 2	construct appropriate written mathematical arguments;
A 3	analyse a problem within a mathematical context and select appropriate mathematical tools to solve it;
A 4	apply mathematics to finance and accounting.

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	Disciplinary Skills - able to:
B 1	be fluent and accurate in basic numerical skills;
B 2	comprehend fundamental concepts and techniques of calculus, linear algebra, probability, statistics and at least one additional main mathematical subject;
B 3	take notes, write up notes, plan revision, and learn independently;
B 4	use e-mail for cooperation and the internet as a source of information, and have a sense of right and wrong ways of using these facilities;
B 5	manage time and work cooperatively with fellow students;
B 6	undertake a critical analysis and assessment of financial issues;
B 7	choose appropriate mathematical methods in financial modelling and accounting, and report the results in writing;
B 8	use statistical computing packages and make critical interpretations of their output.

	Attributes:
C 1	acquire complex knowledge and apply it rigorously;
C 2	connect information and ideas within their field of study;
C 3	use writing for learning, reflection, and communication;
C 4	adapt their understanding to new and unfamiliar settings;
C 5	acquire new learning skills in a range of ways, both individually and collaboratively;
C 6	use quantitative data confidently and competently;
C 7	acquire transferable key skills to help with career goals and continuing education;
C 8	develop effective spoken English and presentation skills;
C 9	use information for evidence-based decision-making and creative thinking.

How will you learn?

Teaching in most modules is primarily by formal lectures but may include guided reading. For all except some higher-level modules, teaching is supported by tutorial classes and/or computer laboratories. Teaching of reading and project modules is primarily by guided reading and weekly seminars or supervisions.

Learning in most modules is by attending lectures, reading lecture notes and recommended text books, attempting exercises and asking questions in tutorial classes and/or computer laboratories and staff office hours.

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How will you be assessed?

Assessment is normally primarily by written examination but for some modules may also include continuous assessment of coursework consisting of solutions to exercises, which are set weekly or fortnightly, and/or one or more tests. Summative coursework assessment or tests may typically contribute up to 10% of the assessment. Assessment of project modules is normally by a project report, presentation and, at the examiners' discretion, an oral examination.

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.

For degree awarding purposes (in order to deal with special cases like changes of programme) students will be allowed to choose up to 30 credits of off diet modules in any year (with School approval).

Year 1

Semester A
Four compulsory modules
BUS021 [4] Finance and Accounting
MTH4100 [4] Calculus I
MTH4107 [4] Introduction to Probability
MTH4113 [4] Numbers, Sets and Functions

Semester B
Four compulsory modules
BUS017 [4] Economics for Business
MTH4101 [4] Calculus II
MTH4115 [4] Vectors and Matrices
MTH4116 [4] Probability and Statistics I

Year 2

Semester A
Three compulsory modules
BUS201 [5] Financial Institutions
MTH5129 [5] Probability and Statistics II
MTH5212 [5] Applied Linear Algebra
Choose one from:
MTH5124 [5] Actuarial Mathematics I
MTH5123 [5] Differential Equations

Semester B
Two compulsory modules
BUS022 [5] Managerial Accounting
MTH5120 [5] Statistical Modelling I
Choose two from:
MTH5001 [5] Introduction to Computer Programming
MTH5103 [5] Complex Variables
MTH5114 [5] Linear Programming and Games
MTH4104 [4] Introduction to Algebra

Year 3

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Semester A
Three compulsory modules
BUS306 [6] Financial Management
MTH6141 [6] Random Processes
MTH6154 [6] Financial Mathematics I
Choose one from:
MTH6102 [6] Bayesian Statistical Methods
MTH6134 [6] Statistical Modelling II
MTH5124 [5] Actuarial Mathematics I
MTH6138 [6] Third Year Project

Semester B
Choose four from the following list including at least one of MTH6155 and MTH6113:
MTH6150 [6] Numerical Computing with C and C++
MTH6142 [6] Complex Networks
MTH6155 [6] Financial Mathematics II
MTH6101 [6] Introduction to Machine Learning
MTH6139 [6] Time Series
MTH6113 [6] Mathematical Tools for Asset Management
MTH6138 [6] Third Year Project
MTH6110 [6] Communicating and Teaching Mathematics

Academic Year of Study   FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Finance and Accounting	BUS021	15	4	Compulsory	1	Semester 1
Calculus I	MTH4100	15	4	Compulsory	1	Semester 1
Introduction to Probability	MTH4107	15	4	Compulsory	1	Semester 1
Numbers, Sets and Functions	MTH4113	15	4	Compulsory	1	Semester 1
Economics for Business	BUS017	15	4	Compulsory	1	Semester 2
Calculus II	MTH4101	15	4	Compulsory	1	Semester 2
Vectors and Matrices	MTH4115	15	4	Compulsory	1	Semester 2
Probability and Statistics I	MTH4116	15	4	Compulsory	1	Semester 2

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Academic Year of Study   FT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Financial Institutions	BUS201	15	5	Compulsory	2	Semester 1
Probability and Statistics II	MTH5129	15	5	Compulsory	2	Semester 1
Applied Linear Algebra	MTH5212	15	5	Compulsory	2	Semester 1
Actuarial Mathematics I	MTH5124	15	5	Elective	2	Semester 1
Differential Equations	MTH5123	15	5	Elective	2	Semester 1
Managerial Accounting	BUS022	15	5	Compulsory	2	Semester 2
Statistical Modelling I	MTH5120	15	5	Compulsory	2	Semester 2
Introduction to Computer Programming	MTH5001	15	5	Elective	2	Semester 2
Complex Variables	MTH5103	15	5	Elective	2	Semester 2
Linear Programming and Games	MTH5114	15	5	Elective	2	Semester 2
Introduction to Algebra	MTH4104	15	4	Elective	2	Semester 2

Academic Year of Study   FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Financial Management	BUS306	15	6	Compulsory	3	Semester 1
Random Processes	MTH6141	15	6	Compulsory	3	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Financial Mathematics I	MTH6154	15	6	Compulsory	3	Semester 1
Bayesian Statistical Methods	MTH6102	15	6	Elective	3	Semester 1
Statistical Modelling II	MTH6134	15	6	Elective	3	Semester 1
Actuarial Mathematics I	MTH5124	15	5	Elective	3	Semester 1
Third Year Project	MTH6138	15	6	Elective	3	Semesters 1 & 2
Numerical Computing with C and C++	MTH6150	15	6	Elective	3	Semester 2
Complex Networks	MTH6142	15	6	Elective	3	Semester 2
Financial Mathematics II	MTH6155	15	6	Elective	3	Semester 2
Introduction to Machine Learning	MTH6101	15	6	Elective	3	Semester 2
Time Series	MTH6139	15	6	Elective	3	Semester 2
Mathematical Tools for Asset Management	MTH6113	15	6	Elective	3	Semester 2
Communicating and Teaching Mathematics	MTH6110	15	6	Elective	3	Semester 2

What are the entry requirements?

For UK applicants, we require 3 GCE A-levels at ABB–including Mathematics at Grade A. Grade C or 4 in GCSE English Language is also required.

International Baccalaureate: Acceptable on its own and combined with other qualifications.
Subjects and grades required: 34–36 points total including Higher Level Mathematics at grade 6.

Non-UK applicants: Equivalent qualifications may be accepted. IELTS: 6.0 (with a minimum of 5.5 in all sections) is required.

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

The programme is over seen by a Programme Director with overall oversight of the programme.

The quality and structure of the programme as a whole is the responsibility of the DoE with support from DDoE, the Programme Director and the School's Education Committee. This includes revising the syllabuses of modules, and refining the module

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offering.

The quality of individual modules is monitored by DoE and DDoE, and includes evaluation of student feedback through questionnaires, the Student Staff Liaison Committee, module registrations, exam performance, as well as direct observations of the lectures.

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

All Schools operate an Annual Programme Review (APR) 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 Student Experience Action Plan (SEAP) which is the summary of the School's work throughout the year to monitor academic standards and to improve the student experience. The process is organised at a School-level basis with the Director of Taught Programmes responsible for updating the School's Taught Programmes Action Plan. Students'views are considered in this process through analysis of the NSS and module evaluations.

Every 5-6 years the School undergoes a Periodic Review of its teaching provision, by a panel consisting of experts external to the School. The process is organised at a School-level basis with the Director of Education responsible for updating the School's Taught Programmes Action Plan. Students' views are considered in this process through analysis of student surveys and module evaluations.

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

The Director of Education and and Deputy Director of Education both attend the Staff-Student Liaison Committee and the School's Education Committee and ensure that student feedback is fed into the review of modules and programmes. Student views are also incorporated in the Committee's work in other ways, such as through the National Student Survey (NSS) and student module evaluations.

What academic support is available?

Each student is allocated a personal academic advisor, who acts as a first point of contact for general academic and pastoral support. Personal tuition is provided primarily through tutorial classes and visits to module organisers during their office hours, which are advertised on the web. Programme induction for new students begins during the enrolment period and extends into the first semester; it includes a series of presentations organised by the Education Services Team. Each programme is assigned a Programme Director and all teaching is overseen by the Education Committee, which includes the Programme Directors and is chaired by the Director of Education. Programmes are monitored continuously and reviewed every few years by the Education Committee.

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

At the end of year two, students have the opportunity to take a placement year in industry - G1N6 Mathematics with Finance and Accounting with Professional Placement. Students also have the option to take advantage of studying abroad - G14Y Mathematics with Finance and Accountingwith Year Abroad.

Links with employers, placement opportunities and transferable skills

Recent graduates have gone into a wide variety of jobs. Some went into positions in the financial sector ranging from actuarial and accountancy trainees with banks such as Lloyds TSB to a financial analyst with AIG. Teacher training was an option that was taken up by a number of our graduates, as was further study: around one third of our graduates go on to complete a Masters or PhD degree. 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 degree programme students learn how to analyse and solve problems, apply mathematical modelling, communicate their ideas and theories effectively, and work independently and manage their own time. Students learn to apply mathematical techniques to situations across the sciences and other areas such as finance. These skills are highly desirable to employers ranging from business and finance to the chemicals and materials industries.

Programme Specification Approval

Person completing Programme Specification:

Simon Rawstron (ESM-Education Services Manager), Shabn

Person responsible for management of programme:

Shabnam Beheshti, DoE for School of Mathematical Science

Date Programme Specification produced / amended by School / Institute Learning and Teaching Committee:

16 December 2021

Date Programme Specification approved by Taught Programmes Board:

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