



## 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, Statistics and Financial Economics BSc Mathematics, Statistics and Financial Economics with Year Abroad BSc Mathematics, Statistics and Financial Economics with Professional Placement
Name of interim award(s):	CertHE, DipHE
Duration of study / period of registration:	3/4 years
QMUL programme code / UCAS code(s):	UBSF-QMMATH1-UTMASSTAFEC/GL11;UBSF-QMMATG1-UTMAASTYFEA
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 Economics & Finance

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

### Programme outline

This programme is designed for students who wish to follow a joint programme that includes a combination of mathematics/statistics and economics in approximately equal proportions. The programme contains a basic core of general mathematics, statistics and economics. This leads on to more specialised modules in economics related to finance and relevant statistics modules. It combines training in statistical theory and related areas of mathematics with financial economics. It provides hands-on experience of using statistical packages and presentation of 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 joint programme with the School of Economics & Finance aims to provide graduates with a grounding in mathematics

focused on statistics and in economics focused on finance. The programme begins with more emphasis on mathematics in the first year, but subsequent years are balanced between mathematics and economics. It aims to ensure that graduates have enough mathematical background to fully understand the mathematical tools used in economics and finance, whilst also appreciating the economic and financial environment within which the mathematical analysis is applied. Mathematics and economics are complementary subjects and during this programme students will discover and be able to exploit the many links between them.

### What will you be expected to achieve?

Students who successfully complete this programme will be expected to achieve all of the learning 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 and economic arguments;
A 3	analyse a problem within a mathematical context and select appropriate mathematical tools to solve it;
A 4	apply mathematics to financial economics.

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 other mathematical subjects;
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 and economic issues;
B 7	choose appropriate mathematical methods in financial economics, 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.

## 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 1

Core

ECN113 [4] Principles of Economics

Compulsory

MTH4100 [4] Calculus I

MTH4107 [4] Introduction to Probability

MTH4113 [4] Numbers, Sets and Functions

Semester 2

Core

ECN111 [4] Microeconomics I

Compulsory

MTH4101 [4] Calculus II

MTH4115 [4] Vectors and Matrices

MTH4116 [4] Probability and Statistics I

Year 2

Semester 1

Core

ECN211 Microeconomics II

Compulsory

ECN103 Principles of Finance

MTH5129 [5] Probability and Statistics II

MTH5212 [5] Applied Linear Algebra

Semester 2

Core

ECN106 [4] Macroeconomics I

ECN214 [5] Games and Strategies

Compulsory

ECN226 [5] Capital Markets 1

MTH5120 [5] Statistical Modelling I

Year 3

Semester 1

Compulsory

ECN378 [6] Corporate Finance

<p>MTH6141 [6] Random Processes</p> <p>Choose two from</p> <p>MTH6154 [6] Financial Mathematics I</p> <p>MTH6102 [6] Bayesian Statistical Methods</p> <p>MTH6134 [6] Statistical Modelling II</p> <p>MTH6138 [6] Third Year Project (may be taken in either semester)</p> <p>ECN302 [6] Corporate Strategy</p> <p>ECN351 [6] Environmental Economics</p> <p>ECN361 [6] Advanced Microeconomics</p> <p>ECN205 [6] Money and Banking</p> <p>Semester 2</p> <p>Compulsory</p> <p>MTH6139 [6] Time Series</p> <p>Choose three from</p> <p>MTH6155 [6] Financial Mathematics II</p> <p>MTH6101 [6] Introduction to Machine Learning</p> <p>MTH6113 [6] Mathematical Tools for Asset Management</p> <p>MTH6138 [6] Third Year Project (may be taken in either semester)</p> <p>ECN358 [6] Futures and Options</p> <p>ECN344 [6] Economics of Innovation and Technology</p> <p>ECN374 [6] Behavioural Economics</p> <p>ECN375 [6] Political Economy</p>
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Academic Year of Study FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Principles of Economics	ECN113	15	4	Core	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
Microeconomics I	ECN111	15	4	Core	1	Semester 2
Calculus II	MTH4101	15	4	Compulsory	1	Semester 2
Vectors and Matrices	MTH4115	15	4	Compulsory	1	Semester 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Probability and Statistics I	MTH4116	15	4	Compulsory	1	Semester 2

Academic Year of Study FT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Principles of Finance	ECN103	15	5	Compulsory	2	Semester 1
Games and Strategies	ECN214	15	5	Core	2	Semester 2
Probability and Statistics II	MTH5129	15	5	Compulsory	2	Semester 1
Applied Linear Algebra	MTH5212	15	5	Compulsory	2	Semester 1
Macroeconomics I	ECN106	15	5	Core	2	Semester 2
Microeconomics II	ECN211	15	5	Core	2	Semester 1
Capital Markets 1	ECN226	15	5	Compulsory	2	Semester 2
Statistical Modelling I	MTH5120	15	5	Compulsory	2	Semester 2

Academic Year of Study FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Corporate Finance	ECN378	15	6	Compulsory	3	Semester 1
Random Processes	MTH6141	15	6	Compulsory	3	Semester 1
Financial Mathematics I	MTH6154	15	6	Elective	3	Semester 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Bayesian Statistical Methods	MTH6102	15	6	Elective	3	Semester 1
Statistical Modelling II	MTH6134	15	6	Elective	3	Semester 1
Third Year Project	MTH6138	15	6	Elective	3	Semester 1 or 2
Environmental Economics	ECN351	15	6	Elective	3	Semester 1
Advanced Microeconomics	ECN361	15	6	Elective	3	Semester 1
Time Series	MTH6139	15	6	Compulsory	3	Semester 2
Financial Mathematics II	MTH6155	15	6	Elective	3	Semester 2
Introduction to Machine Learning	MTH6101	15	6	Elective	3	Semester 2
Mathematical Tools for Asset Management	MTH6113	15	6	Elective	3	Semester 2
Futures and Options	ECN358	15	6	Elective	3	Semester 2
Behavioural Economics	ECN374	15	6	Elective	3	Semester 2
Political Economy	ECN375	15	6	Elective	3	Semester 2
Corporate Strategy	ECN302	15	6	Elective	3	Semester 1
Money and Banking	ECN205	15	6	Elective	3	Semester 1
Economics of Innovation and Technology	ECN344	15	6	Elective	3	Semester 2

### What are the entry requirements?

For UK applicants, we require 3 GCE A-levels at AAA—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 DUGS, the Programme Director and the School's Teaching and Learning Committee. This includes revising the syllabuses of modules, and refining the module 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 a Teaching and Learning 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 Deputy Director of Education both attend the Staff-Student Liaison Committee and the School's Teaching and Learning 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 Teaching and Learning 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 Teaching and Learning 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 - GL12 Mathematics, Statistics and Financial Economics with Professional Placement. Students also have the option to take advantage of studying abroad - GL1Y Mathematics, Statistics and Financial Economics with Year Abroad.

Student may not take any of the following modules: BUS005 Quantitative Research Methods for Business, BUS017 Economics for Business, BUS021 Financial Institutions, BUS024 Strategy, BUS208 Microeconomics for Managers, BUS306 Financial Management, BUS330 Macroeconomic Modelling and Policy, GEG6108 Regional Economics and Policy, MTH6156 Financial Mathematics III.

## 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), Shabnam Beheshti

Person responsible for management of programme:

Shabnam Beheshti, DoE

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

16 December 2021

Date Programme Specification approved by Taught Programmes Board:

Programme Title: BSc Mathematics, Statistics and Financial Economics;BSc Mathematics, Statistics and Financial Economics w