

GG31/GG3Y/GG32 - BSc Mathematics and Statistics/BSc Mathematics and Statistics with Year Abroad/BSc Mathematics and Statistics with Professional Placement

YEAR 1	
Semester 1 (30 credits) MTH4000 [4] Programming in Python I MTH4213 [4] Numbers, Sets and Functions	Semester 2 (30 credits) MTH4104 [4] Introduction to Algebra MTH4215 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4300 [4] Introduction to Analysis with Calculus MTH4500 [4] Probability & Statistics	
YEAR 2	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Semester 3 (60 credits) MTH5112 [5] Linear Algebra I MTH5123 [5] Differential Equations MTH5129 [5] Probability and Statistics II Choose one from: MTH5104 [5] Convergence and Continuity MTH5130 [5] Number Theory MTH5124 [5] Actuarial Mathematics I	Semester 4 (60 credits) MTH5001 [5] Introduction to Computer Programming MTH5120 [5] Statistical Modelling I Choose two from: MTH5103 [5] Complex Variables MTH5105 [5] Differential and Integral Analysis MTH5113 [5] Introduction to Differential Geometry MTH5114 [5] Linear Programming and Games
YEAR 3	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits) MTH6102 [6] Bayesian Statistical Methods MTH6134 [6] Statistical Modelling II Choose two from: MTH5124 [5] Actuarial Mathematics I MTH6138 [6] Third Year Project* MTH6141 [6] Random Processes MTH6151 [6] Partial Differential Equations MTH6154 [6] Financial Mathematics I	Semester 6 (60 credits) Choose four from: MTH6101 [6] Introduction to Machine Learning MTH6110 [6] Communicating and Teaching Mathematics (by approval in semester A)** MTH6113 [6] Mathematical Tools for Asset Management MTH6138 [6] Third Year Project* MTH6139 [6] Time Series MTH6142 [6] Complex Networks MTH6150 [6] Numerical Computing with C and C++ MTH6155 [6] Financial Mathematics II

*Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

**Please note that MTH6110 has limited spaces and is by interview and approval in Semester A.

N323/N32P/N32Y BSc Actuarial Science/BSc Actuarial Science with Professional Placement/BSc Actuarial Science with Year Abroad

YEAR 1	
Semester 1 (30 credits)	Semester 2 (30 credits)
MTH4000 [4] Programming in Python I MTH4113 [4] Numbers, Sets and Functions	BUS137 [4] Economics for Business Management MTH4115 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4400 [4] Applied Calculus MTH4600 [4] Applied Probability & Statistics MTH4112 [4] Actuarial Professional Development I [Compulsory zero credit module]	
YEAR 2	
Semester 3 (60 credits)	Semester 4 (60 credits)
BUS241 [5] Corporate Financial Reporting MTH5124 [5] Actuarial Mathematics I MTH5129 [5] Probability and Statistics II MTH5212 [5] Applied Linear Algebra MTH5127 [5] Actuarial Professional Development II [Compulsory zero credit module taken in both Year 2 and Year 3]	MTH5120 [5] Statistical Modelling I MTH5125 [5] Actuarial Mathematics II MTH5126 [5] Statistics for Insurance MTH5131 [5] Actuarial Statistics
YEAR 3	
<p>Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. To get the maximum number of IFoA exemptions a specific set of electives are required as detailed below, but a student may opt to do different electives.</p> <p>Please remember that you must pass at least six level 6 modules in year 3.</p>	
Semester 5 (60 credits)	Semester 6 (60 credits)
BUS341 [6] Corporate Financial Management MTH6154 [6] Financial Mathematics I* Choose two from: MTH6102 [6] Bayesian Statistical Methods MTH6141 [6] Random Processes* MTH6151 [6] Partial Differential Equations MTH6157 [6] Survival Models* MTH5127 [5] Actuarial Professional Development II [Compulsory zero credit module]	Choose four from: MTH6101 [6] Introduction to Machine Learning* MTH6112 [6] Actuarial Financial Engineering* MTH6113 [6] Mathematical Tools for Asset Management* MTH6139 [6] Time Series* MTH6142 [6] Complex Networks MTH6150 [6] Numerical Computing with C and C++
*Students seeking exemption from the maximum number of IFoA examinations must take all modules marked with *	

G1N3/GN3Y/G1N5 - BSc Mathematics with Actuarial Science/BSc Mathematics with Actuarial Science with Year Abroad/BSc Mathematics with Actuarial Science with Professional Placement – limited number of students

YEAR 3

Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. To get the maximum number of IFoA exemptions a specific set of electives are required as detailed below, but a student may opt to do different electives.

Please remember that you must pass at least six level 6 modules in year 3.

Semester 5 (60 credits)

BUS341 [6] Corporate Financial Management
MTH6154 [6] Financial Mathematics I*

Choose **two** from:

MTH6102 [6] Bayesian Statistical Methods
MTH6138 [6] Third Year Project (may be taken in either semester)**
MTH6141 [6] Random Processes*
MTH6151 [6] Partial Differential Equations
MTH6157 [6] Survival Models*

Semester 6 (60 credits)

MTH5131 [5] Actuarial Statistics

Choose **three** from:

MTH6101 [6] Introduction to Machine Learning
MTH6112 [6] Actuarial Financial Engineering*
MTH6113 [6] Mathematical Tools for Asset Management*
MTH6138 [6] Third Year Project (may be taken in either semester)**
MTH6139 [6] Time Series*
MTH6142 [6] Complex Networks
MTH6150 [6] Numerical Computing with C and C++

[Students on this programme are not permitted to take MTH6155 Financial Mathematics II]

*Students seeking exemption from the maximum number of IFoA examinations must take all modules marked with *

**Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

G1N4/G14Y/G1N6 - BSc Mathematics with Finance and Accounting/BSc Mathematics with Finance and Accounting with Year Abroad/ BSc Mathematics with Finance and Accounting with Professional Placement

YEAR 1	
Semester 1 (60 credits)	Semester 2 (60 credits)
BUS021 [4] Finance and Accounting MTH4113 [4] Numbers, Sets and Functions	BUS137 [4] Economics for Business Management MTH4115 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4400 [4] Applied Calculus MTH4600 [4] Applied Probability & Statistics	
YEAR 2	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Semester 3 (60 credits)	Semester 4 (60 credits)
BUS245 [5] introduction to Finance MTH5129 [5] Probability and Statistics II MTH5212 [5] Applied Linear Algebra Choose one from: MTH5123 [5] Differential Equations MTH5124 [5] Actuarial Mathematics I	BUS022 [5] Managerial Accounting MTH5120 [5] Statistical Modelling I Choose two from: MTH4104 [4] Introduction to Algebra MTH5001 [5] Introduction to Computer Programming MTH5103 [5] Complex Variables MTH5114 [5] Linear Programming and Games
YEAR 3	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits)	Semester 6 (60 credits)
BUS340 [6] Financial Markets and Institutions MTH6141 [6] Random Processes MTH6154 [6] Financial Mathematics I Choose one from: MTH6102 [6] Bayesian Statistical Methods MTH6134 [6] Statistical Modelling II MTH6138 [6] Third Year Project (may be taken in either semester)*	Choose four from the following list including at least one of MTH6155 and MTH6113 MTH6101 [6] Introduction to Machine Learning MTH6110 [6] Communicating and Teaching Mathematics (by approval in semester A)** MTH6113 [6] Mathematical Tools for Asset Management MTH6138 [6] Third Year Project (may be taken in either semester)* MTH6139 [6] Time Series MTH6150 [6] Numerical Computing with C and C++ MTH6142 [6] Complex Networks MTH6155 [6] Financial Mathematics II

*Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

**Please note that MTH6110 has limited spaces and is by interview and approval in Semester A.

GL11/GL1Y/GL12 - BSc Mathematics, Statistics and Financial Economics/BSc Mathematics, Statistics and Financial Economics with Year Abroad/BSc Mathematics, Statistics and Financial Economics with Professional Placement

YEAR 2	
Semester 3 (60 credits)	Semester 4 (60 credits)
ECN214 [5] Games and Strategies ECN224 [5] Econometrics 1 MTH5129 [5] Probability and Statistics II MTH5212 [5] Applied Linear Algebra	ECN106 [4] Macroeconomics I ECN226 [5] Capital Markets 1 ECN1XA [5] Foundations of Finance MTH5120 [5] Statistical Modelling I
YEAR 3	
The standard pathway is listed below. Modules outside this pathway may only be taken with School approval. At most 30 credits from either Level 5 or 6 can be from outside of the pathway. Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits)	Semester 6 (60 credits)
ECN378 [6] Corporate Finance MTH6141 [6] Random Processes Choose two from ECN206 [6] Money and Banking ECN302 [6] Corporate Strategy (?) ECN351 [6] Environmental Economics ECN361 [6] Advanced Microeconomics MTH6102 [6] Bayesian Statistical Methods MTH6134 [6] Statistical Modelling II MTH6138 [6] Third Year Project (may be taken in either semester)* MTH6154 [6] Financial Mathematics I	MTH6139 [6] Time Series Choose three from ECN331 [6] Industrial Economics ECN358 [6] Futures and Options ECN374 [6] Behavioural Economics ECN375 [6] Political Economy MTH6101 [6] Introduction to Machine Learning MTH6113 [6] Mathematical Tools for Asset Management MTH6138 [6] Third Year Project (may be taken in either semester)* MTH6155 [6] Financial Mathematics II

*Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

G110/G1NY - BSc Pure Mathematics/BSc Pure Mathematics with Year Abroad

YEAR 1	
Semester 1 (60 credits)	Semester 2 (60 credits)
MTH4000 [4] Programming in Python I MTH4213 [4] Numbers, Sets and Functions	MTH4104 [4] Introduction to Algebra MTH4215 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4300 [4] Introduction to Analysis with Calculus MTH4500 [4] Probability & Statistics	
YEAR 2	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Semester 3 (60 credits)	Semester 4 (60 credits)
MTH5104 [5] Convergence and Continuity MTH5112 [5] Linear Algebra I MTH5123 [5] Differential Equations Choose one from: MTH5124 [5] Actuarial Mathematics I MTH5129 [5] Probability and Statistics II MTH5130 [5] Number Theory	MTH5001 [5] Introduction to Computer Programming Choose three from: MTH5103 [5] Complex Variables MTH5105 [5] Differential and Integral Analysis MTH5113 [5] Introduction to Differential Geometry MTH5114 [5] Linear Programming and Games MTH5120 [5] Statistical Modelling I
YEAR 3	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits)	Semester 6 (60 credits)
Choose four from: MTH5130 [5] Number Theory MTH6106 [6] Group Theory MTH6107 [6] Chaos and Fractals MTH6115 [6] Cryptography MTH6138 [6] Third Year Project (may be taken in either semester)* MTH6140 [6] Linear Algebra II MTH6151 [6] Partial Differential Equations	Choose four from: MTH6105 [6] Algorithmic Graph Theory MTH6110 [6] Communicating and Teaching Mathematics (by approval in semester A)** MTH6127 [6] Metric Spaces and Topology MTH6132 [6] Relativity MTH6138 [6] Third Year Project (may be taken in either semester)** MTH6142 [6] Complex Networks MTH6150 [6] Numerical Computing with C and C++ MTH6158 [6] Ring Theory

*Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

**Please note that MTH6110 has limited spaces and is by interview and approval in Semester A.

G12N/G13N/G1NN - BSc Mathematics with Management/BSc Mathematics with Management with YearAbroad/BSc Mathematics with Management with Professional Placement

YEAR 1	
Semester 1 (60 credits) BUS024 [4] Fundamentals of Management MTH4113 [4] Numbers, Sets and Functions	Semester 2 (60 credits) BUS137 [4] Economics for Business Management MTH4115 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4400 [4] Applied Calculus MTH4600 [4] Applied Probability & Statistics	
YEAR 2	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Semester 3 (60 credits) BUS021 [5] Financial Accounting MTH5129 [5] Probability and Statistics II MTH5212 [5] Applied Linear Algebra Choose one from: MTH5124 [5] Actuarial Mathematics I MTH5123 [5] Differential Equations	Semester 4 (60 credits) BUS022 [5] Managerial Accounting BUS025 [5] Entrepreneurship BUS027 [5] Project Management MTH5120 [5] Statistical Modelling I
YEAR 3	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval. Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits) MTH6102 [6] Bayesian Statistical Methods Choose three from: BUS359 [6] Contemporary Strategic Analysis MTH6134 [6] Statistical Modelling II MTH6138 [6] Third Year Project (may be taken in either semester)* MTH6151 [6] Partial Differential Equations MTH6154 [6] Financial Mathematics I	Semester 6 (60 credits) BUS324 [6] The Management of Human Resources Choose three from: MTH6101 [6] Introduction to Machine Learning MTH6110 [6] Communicating and Teaching Mathematics (by approval in semester A)** MTH6138 [5] Third Year Project (may be taken in either semester)* MTH6139 [6] Time Series MTH6142 [6] Complex Networks

*Please note that MTH6138 Third Year Project can be taken in either semester but requires approval of Project supervisor prior to the start of the semester in which module is taken.

**Please note that MTH6110 has limited spaces and is by interview and approval in Semester A.

GN1H/GNHY/GN2H - MSci Financial Mathematics/MSci Financial Mathematics with Year Abroad/ Msci Financial Mathematics with Professional Placement

YEAR 1	
Semester 1 (60 credits)	Semester 2 (60 credits)
BUS024 [4] Fundamentals of Management MTH4113 [4] Numbers, Sets and Functions	BUS137 [4] Economics for Business Management MTH4115 [4] Vectors and Matrices
Year-long modules (60 credits)	
MTH4400 [4] Applied Calculus MTH4600 [4] Applied Probability & Statistics	
YEAR 2	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Semester 3 (60 credits)	Semester 4 (60 credits)
MTH5123 [5] Differential Equations MTH5129 [5] Probability and Statistics II MTH5212 [5] Applied Linear Algebra	MTH5001 [5] Introduction to Computer Programming MTH5120 [5] Statistical Modelling I
Choose one from:	Choose two from:
BUS245 [5] Introduction to Finance MTH5124 [5] Actuarial Mathematics I	MTH5103 [5] Complex Variables MTH5113 [5] I+ Introduction to Differential Geometry MTH5114 [5] Linear Programming and Games
YEAR 3	
Modules outside this pathway (normally a maximum of 15 credits) may be taken with School approval.	
Please remember that you must pass at least six level 6 modules in year 3.	
Semester 5 (60 credits)	Semester 6 (60 credits)
MTH6141 [6] Random Processes MTH6151 [6] Partial Differential Equations MTH6154 [6] Financial Mathematics I	MTH6113 [6] Mathematical Tools for Asset Management MTH6150 [6] Numerical Computing with C and C++ MTH6155 [6] Financial Mathematics II
Choose one from:	Choose one from:
BUS340 [6] Financial Markets and Institutions MTH6102 [6] Bayesian Statistical Methods MTH6134 [6] Statistical Modelling II	MTH6101 [6] Introduction to Machine Learning MTH6139 [6] Time Series MTH6142 [6] Complex Networks
Please remember that you must pass at least six level 6 modules in year 3.	

YEAR 4

Semester 7 (45 credits)

MTH761U [7] Financial Instruments and Markets
MTH771U [7] Foundations of Mathematical
Modelling in Finance

Choose **one** from:

MTH734U [7] Topics in Probability and Stochastic
Processes
MTH790U [7] Programming in C++ for Finance

Semester 8 (45 credits)

MTH762U [7] Continuous-Time Models in Finance
MTH787U [7] Advanced Derivatives Pricing and Risk
Management
MTH773U [7] Advanced Computing in Finance

Year long module (30 credits)

MTH798U [7] MSci Financial Mathematics Project

Off-diet modules

The School will consider requests for non-diet modules as follows:

Up to 15 credits in year 2, 3 and 4. However, if a non-diet module is approved, please note we **can't** guarantee off-diet modules won't clash with your on-diet choices. If you do choose a non-diet module that clashes, you'll be asked to modify your selection to remove the clash from your timetable.

Off-diet choices fall into two categories and require different approvals: non-Pathway MTH modules and non-Pathway, non-MTH modules. Such an option should only be pursued if you have a strong interest in the module, have discussed the plan with your Advisor and obtain approvals prior to the start of the semester.

- Non-Pathway MTH modules – You should consider taking a non-Pathway MTH module if:
 - you have a strong interest in the subject
 - you have the time and willingness to explore your options, contact Module Organisers, learn additional material if necessary
 - you accept that there's a chance the module(s) might clash with some of your Pathway modules – Pathway modules will take priority over non-Pathway modules when we timetable them

If you decide to take a non-Pathway MTH module prior to the start of the semester, you'll need to get approval from your Advisor and send this to maths@qmul.ac.uk.

- Non-Pathway, non-MTH modules – You should consider taking a non-Pathway/non-MTH module if:
 - you have a strong interest in a subject outside mathematics
 - you are prepared to adapt to different ways of another discipline such as teaching and assessment
 - you have the time and willingness to explore your options, contact Module Organisers, learn additional material if necessary
 - you accept that there's a chance the module(s) might clash with some of your Pathway modules – Pathway modules will take priority over non-Pathway modules when we timetable them

If you decide to take a non-Pathway, non-MTH module prior to the start of the semester, you will need to get approval from your Advisor as well as contacting the module Home School to:

- check if they have space on their module
- check that you meet the prerequisite or co-requisite requirements for the module
- obtain permission to take the module(s) from the Home School's Education Services Team and forward this to the School of Maths Education Services Team via maths@qmul.ac.uk

If the non-Pathway module you're considering is from another School within the Faculty of Science and Engineering, in addition to module Home School permission, you'll also need permission from the School of Mathematical Sciences Deputy Director of Education.

Notes

- Level 4 modules cannot be selected in Year 3 (and only in exceptional cases in Year 2)
- Only in very exceptional cases will the School consider the selection of 30 credits outside of the pathway for students in Year 2
- Students **are not** permitted to choose modules from either the School Of Economics and Finance, or the School of Business and Management [ECN- or BUS-coded modules]

Please don't leave these checks until the last minute to ensure you get the chance to study the modules you want.