UNIVERSITY OF YORK

POSTGRADUATE PROGRAMME REGULATIONS (for PGT programmes that will run under the new modular scheme)

This document commence the	applie: progra	s to stude mme(s) i	October 2017 an	d later		
Awarding instit	tution			Teaching institu	Ition	
University of Yo	rk			University of Yor	k	
Department(s)						
Mathematics						
Award(s) and p	rogram	nme title(s	6)	Level of qualific	ation	
MSc in Mathematical Finance Level 7 (Masters)						
Award(s) availa	able <i>on</i>	ly as inte	rim awards			
Diploma in Math	nematica	al Finance				
Certificate in Ma	themat	ical Finan	се			
Admissions cri	iteria					
A good undergra	aduate	degree eq	uivalent to a class 2:	1 or higher UK deg	gree in a math	nematically
based discipline	such a	s Chemisi	ry, Computer Science	e, Engineering, Ma	athematics, P	hysics or
Statistics. Each	applica	nt is asses	ssed individually to m	ake sure that his/h	ner mathemat	ical
background is a	ppropria	ate.				
Length and sta	tus of t	he progra	amme(s) and mode(s) of study		
Programme	Lengt	h (years)	Start		Mode	
	and	status	dates/months			
	(Tull-ti	me/part-	(if applicable – for			
	LI LI	iiie)	multiple intakes or start			
			dates that differ from the			
			usual academic year)	Face-to-face	Distance	Other
				campus-based	learning	Cullor
MSc	1		October	X		
Language of st	udy	English				
	-					
Programme ac	creditat	tion by Pr	ofessional, Statutor	y or Regulatory	Bodies (if app	licable)
N/A						
Educational air	ns of th	ne progra	mme(s)			
For the Masters	, Diplon	na and Ce	rtificate:			
To train student	s in adv	anced ma	thematical and comp	utational techniqu	es (stochastic	: analysis,
partial differentia	al equat	ions, num	erical and statistical r	nethods) at a leve	I relevant to	
practitioners in r	nodern	finance in	dustry.			
Additionally for t	he Dipl	oma and I	Masters:			
Te train at 1: 1	- 4	ما میں ا	- ula		matical Etc	
I o train student	s to rea	a and abs	ord current research	interature in Mathe	matical Finar	ice and to
aevelop compet	ence in	using the	knowledge and tech	nical skills acquire	a auring the c	course of

the programme in typical situations arising in practical contexts in finance, particularly in relation to trading in various kinds of derivative securities.

Additionally for the Masters:

To equip more gifted students with the knowledge and experience necessary to work in a research and development role in quantitative finance industry or to embark on a PhD programme in Mathematical Finance or related fields.

Intended learning outcomes for the programment of the students to achieve and demonstrate the intervence of the students to achieve and demonstrate the student of the studento of the student of the student of the stu	ntended learning outcomes for the programme – and how the programme enables students to achieve and demonstrate the intended learning outcomes						
This programme provides opportunities for students to	The following teaching, learning and assessment						
develop and demonstrate knowledge and understanding	methods enable students to achieve and to demonstrate						
qualities, skills and other attributes in the following	the programme learning outcomes:						
areas:	d understanding						
A: Knowledge and	la understanding						
Knowledge and understanding of:	Learning/teaching methods and strategies						
For the Masters, Diploma and Certificate:	(relating to numbered outcomes):						
1. Mathematical tools (stochastic analysis	 Core taught modules, consisting of 						
including stochastic differential	lectures, seminars, example classes						
equations, partial differential equations,	and computer sessions (1-3)						
optimisation techniques) as applied to	 Optional taught modules, consisting of 						
pricing and hedging derivative financial	lectures, seminars, example classes						
securities, portfolio and management	and computer sessions (1, 4-5)						
techniques.	 Independent study module (1-5) 						
2. A range of mathematical models of							
financial securities: stocks, bonds							
(including the term structure of interest	Types/methods of economicate (relating to						
rates), and derivative securities.	Types/methods of assessment (relating to						
3 Mathematical techniques involved in							
pricing bedging and analysis of	Regular practice assignments in core						
derivative securities in both discrete	modules (formative, 1-3)						
and continuous time market models:	 Projects in core modules (summative, 1- 						
their relevance in modern financial	3)						
	 Unseen exams in core taught modules 						
practice.	(1-3)						
4. Modern portfolio theory, efficient	Assessment in optional taught modules.						
portfolio and risk management.	as per individual module descriptions (4-						
5. The most popular and efficient	5)						
numerical methods and computational	 Regular feedback on dissertation/project 						
techniques (finite-difference, Monte	(formative 1-5)						
Carlo) used in the solution of the	Discontation (nummative						
mathematical problems arising in	• Dissertation/project report (summative						
finance; the strengths and limitations of	(c-1						
these methods as applied to practical							
contexts in finance.							

B: (i) Skills – discipline related						
 Able to: For the Masters, Diploma and Certificate: Price and hedge a variety of derivative securities using appropriate mathematical and numerical techniques. Manage and optimise investment portfolios; manage risk using a variety of risk measures and mathematical techniques. Use computing software (spreadsheets, programming languages and/or symbolic computation software) to implement solutions; develop and document software. 	 Learning/teaching methods and strategies (relating to numbered outcomes): <i>Core</i> taught modules, consisting of lectures, seminars, example classes and computer sessions (1-3) <i>Optional</i> taught modules, consisting of lectures, seminars, example classes and computer sessions (1-3) Independent study module (1-3) Types/methods of assessment (relating to numbered outcomes) Regular practice assignments in core modules (formative, 1-3) Projects in core modules (summative, 1- 3) Unseen exams in core taught modules (summative, 1-3) Assessment in optional taught modules, as per individual module descriptions (formative/summative 1-3) Regular feedback on dissertation/project (formative, 1-3) Dissertation/project report (summative 1-3) 					
B: (ii) Skills -	- transferable					
 Able to: For the Masters, Diploma and Certificate: Communicate ideas and arguments in written and oral form in a clear and rigorous manner. Additionally for the Diploma and Masters: Apply and implement results in current literature in a practical context. 	 Learning/teaching methods and strategies (relating to numbered outcomes): <i>Core</i> taught modules, consisting of lectures, seminars, example classes and computer sessions (1) <i>Optional</i> taught modules, consisting of lectures, seminars, example classes and computer sessions (1) Independent study module (1-2) 					

	 Types/methods of assessment (relating to numbered outcomes) Regular practice assignments in core modules (formative, 1) Projects in core modules (summative, 1) Unseen exams in core taught modules (summative, 1) Assessment in optional taught modules, as per individual module descriptions (summative/formative, 1) Regular feedback on dissertation/project (formative, 1-2) Dissertation/project report (summative, 1-2)
C: Experience an	d other attributes
 Able to: For the Masters, Diploma and Certificate: Listen; take notes; summarise and evaluate lectures; work to deadlines; solve problems; use computers for programming, word processing and spreadsheet work. Additionally for the Diploma and Masters: Study a selected topic of current interest 	 Learning/teaching methods and strategies (relating to numbered outcomes): Core taught modules, consisting of lectures, seminars, example classes and computer sessions (1) Optional taught modules, consisting of lectures, seminars, example classes and computer sessions (1) Independent study module (1-2)
Relevant Quality Assurance Agency benchm	 Types/methods of assessment (relating to numbered outcomes) Regular practice assignments in core modules (formative, 1) Projects in core modules (summative, 1) Unseen exams in core taught modules (summative, 1) Assessment in optional taught modules, as per individual module descriptions (summative/formative, 1) Regular feedback on dissertation/project (formative, 1-2) Dissertation/project report (summative, 1-2)

Regulatory Bodies) Research Assessment Exercise 2008: 2.55 in Applied Mathematics, 2.5 in Pure Mathematics. Research Assessment Exercise 2000: 5A in Applied Mathematics, 5B in Pure Mathematics. Teaching Quality Assessment in 1998: achieved an 'excellent' grading of 22 out of 24 points.

University award regulations

To be eligible for an award of the University of York a student must undertake an approved programme of study, obtain a specified number of credits (at a specified level(s)), and meet any other requirements of the award as specified in the award requirements and programme regulations, and other University regulations (e.g. payment of fees). Credit will be awarded upon passing a module's assessment(s) but some credit may be awarded where failure has been compensated by achievement in other modules. The University's award and assessment regulations specify the University's marking scheme, and rules governing progression (including rules for compensation), reassessment and award requirements. The award and assessment regulations apply to all programmes: any exceptions that relate to this programme are approved by University Teaching Committee and are recorded at the end of this document.

Departmental policies on assessment and feedback

Detailed information on assessment (including grade descriptors, marking procedures, word counts etc.) is available in the written statement of assessment which applies to this programme and the relevant module descriptions. These are available in the student handbook and on the Department's website:

https://maths.york.ac.uk/intranet/Home

Information on formative and summative feedback to students on their work is available in the written statement on feedback to students which applies to this programmes and the relevant module descriptions. These are available in the student handbook and on the Department's website:

https://maths.york.ac.uk/intranet/Home

Diagrammatic representation of the programme structure, showing the distribution and credit value of core and option modules

Masters

Autumn term	Spring term	Summer term and summer vacation
Mathematical Methods of Finance (20 credits) Discrete Time Modelling and Derivative Securities (20 credits)	Stochastic Calculus and Black-Scholes (20 credits) Modelling of Bonds, Term Structure and Interest Rate Derivatives (20 credits)	Mathematical Finance Group Project (10 credits) - weeks 1-7 of summer term
30 credits from optional module	S	Mathematical Finance Dissertation (60 credits) - starting in week 6 of summer term

The following optional modules are likely to be available:

Autumn term	Spring term
	opinig term

Portfolio Theory and Risk	Credit Risk (10 credits)				
Management (10 credits)					
C++ Programming with Applications to Finance (10 credits)					
Computational Finance (10 credits)					

Postgraduate Diploma

Autumn term	Spring term	Summer term and summer vacation
120 credits from core and option	nal Masters modules	

Postgraduate Certificate

Autumn term	Spring term
60 credits from core and optiona	al taught Masters modules

Diagrammatic representation of the timing of module assessments and reassessments, and the timing of departmental examination/progression boards

Autumn term	Spring term	Summer term	Summer vacation	Date of final award board
Week 1-10: Continuous assessment in Autumn Term Modules	Week 1: Closed exams for Autumn term modules Week 2-10: Continuous assessment in Spring Term Modules	Week 5: Closed exams for Spring term and Autumn+Spring term modules Week 7: assessment (written project and presentation) in the Mathematical Finance Group Project module Weeks 9/10: Board of Examiners meeting by online conferencing. Students informed of resit opportunities.	August: Resit examinations 15 September Submission of dissertations	Start of November: Board of Examiners meet. Awards made where possible. Students informed of dissertation resubmission opportunities. December: Resubmission of dissertation/project. January/February: Board of Examiners meet by online conferencing. All outstanding awards made.

Overview of modules

Core module table

Module title	Module code	Credit level ¹	Credit value ²	Prerequisite s	Assessment rules ³	Timing (term and week) and format of main assessment ⁴	Independent Study Module? ⁵
Mathematical Methods of	MAT000	7	20		Normal	SpT week 1: Closed exam	No
Finance	20M						
Discrete Time Modelling and	MAT000	7	20		Normal	SpT week 1:Closed exam	No
Derivative Securities	23M						
Stochastic Calculus and	MAT000	7	20		Normal	SuT week 5-7: Closed	No
Black-Scholes	28M					exam	
Modelling of Bonds, Term	MAT000	7	20		Normal	SuT week 5-7: Closed	No
Structure and Interest Rate	09M					exam	
Derivatives							
Mathematical Finance	MAT000	7	60		Normal	SuVac (15 September)	Yes
Dissertation	25M					Written report	
Mathematical Finance Group	new	7	10		P/F	SuT week 7	No
Project	module					Written report and	
-						presentation	

¹ The **credit level** is an indication of the module's relative intellectual demand, complexity and depth of learning and of learner autonomy. Most modules in postgraduate programmes will be at Level 7/Masters. Some modules are permitted to be at Level 6/Honours but must be marked on a pass/fail basis. See University Teaching Committee guidance for the limits on Level 6/Honours credit.

⁴ AuT – Autumn Term, SpT – Spring Term, SuT – Summer Term, SuVac – Summer vacation

⁵ Independent Study Modules (ISMs) are assessed by a dissertation or substantial project report. They cannot be compensated (NC) and are subject to reassessment rules which differ from 'taught modules'. Masters programmes should include an ISM(s) of between 60 and 100 credits. This is usually one module but may be more.

² The **credit value** gives the notional workload for the module, where 1 credit corresponds to a notional workload of 10 hours (including contact hours, private study and assessment)

³ Special assessment rules (requiring University Teaching Committee approval)

P/F – the module is marked on a pass/fail basis (NB pass/fail modules cannot be compensated)

NC - the module cannot be compensated

NR - there is no reassessment opportunity for this module. It must be passed at the first attempt

Option modules

Students must choose Computational Finance or C++ Programming with Applications to Finance as one of their options.

Module title	Module code	Credit level	Credit value	Prerequisite s	Assessment rules	Timing and format of main assessment	Independent Study Module?
Portfolio Theory and Risk Management	MAT000 32M	7	10		Normal	SpT week 1: Closed exam	No
Credit Risk	MAT000 67M	7	10		Normal	SuT week 5-7: Closed exam	No
C++ Programming with Applications to Finance	MAT000 21M	7	10		Normal	AuT weeks 2-10, SpT weeks 2-10: Projects and Class Tests SuT: week 5-7: Closed exam	No
Computational Finance	MAT000 69M	7	10		Normal	SpT weeks 2-10, SuT weeks 2-10: Project SuT week 5-7: Closed exam	No

Transfers out of or into the programme

Exceptions to University Award Regulations a	approved by University Teaching Committee
Exception	Date approved

Quality and Standards

The University has a framework in place to ensure that the standards of its programmes are maintained, and the quality of the learning experience is enhanced.

Quality assurance and enhancement processes include:

- The academic oversight of programmes within departments by a Board of Studies, which includes student representation
- The oversight of programmes by external examiners, who ensure that standards at the University of York are comparable with those elsewhere in the sector
- Annual monitoring and periodic review of programmes
- The acquisition of feedback from students by departments.

More information can be obtained from the Academic Support Office: http://www.york.ac.uk/admin/aso/

Departmental Statements on Audit and Review Procedures are available at: http://www.york.ac.uk/admin/aso/teach/deptstatements/index.htm

Date on which this programme information	August 2017
was updated:	
Departmental web page:	https://www.york.ac.uk/maths/

Please note

The information above provides a concise summary of the main features of the programme and learning outcomes that a typical students might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the leaning opportunities that are provided.

Detailed information on learning outcomes, content, delivery and assessment of modules can be found in module descriptions.

The University reserves the right to modify this overview in unforeseen circumstances, or where processes of academic development, based on feedback from staff, students, external examiners or professional bodies, requires a change to be made. Students will be notified of any substantive changes at the first available opportunity.