Programme Specification

1	**Awarding body**	University of London
2	**Teaching Institution**	**Birkbeck College**
3	**Programme Title(s)**	**Graduate Diploma Mathematics**
4	**Programme Code(s)**	GDGMTHMT
5	**UCAS code**	N/A
6	**Home Department**	Economics, Mathematics and Statistics
7	**Exit Award(s)**	Graduate Certificate Mathematics
8	**Duration of Study** (number of years)	2 years
9	**Mode of Study**	FT PT ✓ DL
10	**Level of Award (FHEQ)**	6
11	**Other teaching depts or institution**	N/A
12	**Professional, Statutory Regulatory Body(PSRB) details**	N/A
13	**QAA Benchmark Group**	Mathematics, Statistics and Operational Research

14	**Programme Rationale & Aims**

The Graduate Diploma in Mathematics is aimed at students with a first degree in a quantitative discipline, who need or desire to develop specialist knowledge in an area of mathematics, or to "top up" their existing skills. In consultation with the programme director, students will have the opportunity to create a coherent programme of study tailored to their particular needs and interests in Mathematics. The Graduate Diploma can also act as a 2-year qualifying course for an MSc programme, such as the MSc Mathematics at Birkbeck.

Distinctive features: Part-time, evening, face to face study. Regular coursework forms a part of all modules, to further develop independent learning. A choice of modules to allow students to pursue their areas of interest. Students can opt to study the module "Problems in Mathematics", which develops an appreciation of the cultural and historical aspects of the subject and enhances the ability to communicate effectively about the subject.

15	**Entry Criteria**

The entry requirement is a first degree in a quantitative discipline. In exceptional circumstances candidates without a first degree in a quantitative discipline may be admitted, provided they have equivalent level qualifications or professional experience that convinces the admissions team that the programme is suitable for them. Applicants may be emailed an entrance test to gauge their suitability for the programme.

16	**Learning Outcomes**
	On successful completion of this programme a student will be expected to have:
	Subject Specific:
	LO1 Knowledge and understanding of, and the ability to use, mathematical techniques.
	LO2 Knowledge and understanding of a range of results in mathematics.
	LO3 Appreciation of the need for rigour in mathematics, such as valid proofs or initial assumptions, and the ability to follow and construct mathematical arguments.
	LO4 Appreciation of the power of generalization and abstraction in mathematics.
	LO5 A deeper knowledge of some particular areas of mathematics.
	Intellectual:
	LO6 Ability to comprehend conceptual and abstract material.
	LO7 Develop a logical and systematic approach to problem solving.
	Practical:
	LO8 Problem-solving skills, including the ability to assess problems logically and to approach them analytically.
	LO9 Highly developed quantitative skills
	LO10 Ability to transfer knowledge and expertise from one context to another.
	Personal and Social:
	LO11 Ability to learn independently using a variety of media.
	LO12 Ability to work independently with patience and persistence.
	LO13 Time-management and organizational skills.
	LO14 Good communication skills, including the ability to write coherently.
	LO15 Ability to complete work in a limited time period.

17	**Learning, teaching and assessment methods**
	Most teaching sessions are lectures, presenting both theory and worked examples. Typically a 30 credit module would comprise a total of 18 evenings of lectures, each running from 6-9pm, with eight evenings in each of the Autumn and Spring terms, and two revision evenings in the Summer Term.

Detailed course notes, problems and worked solutions are provided to accompany lectures on each module. This facilitates the independent study necessary to understand and assimilate the material. Regular coursework and a variety of assessment methods are also designed to be formative and promote learning.

The Problems in Mathematics module enables students to develop their knowledge of some areas of mathematics of cultural and historical significance, through self-study, supported by occasional lectures.

Individual tutorials are provided as required and are an integral part of the teaching provision. Students may also consult staff by telephone and email.

The methods of assessment used are:

Unseen 3 hour examinations in May/June.
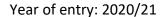
Assessed assignments.

Essays.

For most modules 80% of the assessment comes from unseen examinations in May/June. This allows time for students to assimilate the material and develop a thorough understanding of the course curriculum. The 20% contribution from coursework enables students to get practice in tackling and solving problems independently, without the time pressure of examinations, and gives staff an opportunity to give relevant feedback.

The range of assessments, and the type of questions and problems set within examinations and assignments are structured to balance theory and practice, to address the individual learning outcomes and to discriminate between different levels of achievement. However the assessment strategy recognizes that students may exhibit very different aptitudes and abilities in different aspects of the course and in different forms of assessment. This is particularly relevant to Birkbeck students who vary considerably in terms of academic background, prior work experience, current career and future career plans. The assessment strategy is therefore designed to: (i) ensure a good coverage of the curriculum and address the range of learning outcomes, (ii) perform an on-going formative function via the theoretical and practical assignments associated with all course modules; (iii) give all students the opportunity to demonstrate their strengths and show what they can do well.

Both the external and the second internal examiner normally scrutinize all examination papers before they are finalized. Exams and Essays are all double marked. Coursework is marked by the first examiner and moderated by the second internal examiner. All marks are moderated by the External Examiner, who is invited to comment on the suitability of the assessment methods, criteria and procedures. These comments influence any changes that are recommended at the programme review meeting.

18	**Programme Description**
	Students take four year-long 30 credit modules over two years. At least three of these modules must be at level 6, while the fourth can be at level 5 or level 6. Usually if a level 5 module is taken, it will

be taken in year 1 of the programme, but that is not essential. All level 5 modules run every year, but not every level 6 module runs every year. The programme director will offer guidance about the most suitable choices, given the experience, prior study and future goals of the student. For example, the module Algebra 2, or Number Theory and Algebra, would be recommended for those wishing to pursue an MSc in Mathematics at Birkbeck.

19	**Programme Structure**

Year 1

Level	Module Code	Module Title	Credits	Status*
5/6	-	Option from the list of approved modules (indicative list below, all are on BSc Maths (UBSMTHMT))	30	Option
6	-	Option from the list of approved modules (indicative list below, all are on BSc Maths (UBSMTHMT))	30	Option

Year 2

Level	Module Code	Module Title	Credits	Status*
5/6	-	Option from the list of approved modules (indicative list below, all are on BSc Maths (UBSMTHMT))	30	Option
6	-	Option from the list of approved modules (indicative list below, all are on BSc Maths (UBSMTHMT))	30	Option

Indicative list of Options

Level	Module Code	Module Title	Credits	Status*
5	EMMS095S5	Proof & Structure in Mathematics	30	Option
5	BUEM001S5	Calculus 2: Multivariable and Differential Equations	30	Option
5	BUEM002S5	Discrete Mathematics	30	Option
6	EMMS094S6	Algebra 2: Theory & Structure	30	Option
6	BUEM009S6	Real & Complex Variable	30	Option
6	BUEM008S6	Problems in Mathematics	30	Option
6	BUEM021S6	Calculus 3: Transforms & Models	30	Option
6	BUEM010S6	Computational Mathematics	30	Option
6	EMMS093S6	Number Theory & Geometry	30	Option

Status*
CORE – Module must be taken and passed by student; COMPULSORY – Module must be taken, mark can be reviewed at sub-exam board; OPTIONAL – Student can choose to take this module

20	**Regulations**
	• ***Admissions*** This programme adheres to the College Admissions Policy: http://www.bbk.ac.uk/registry/policies/documents/admissions-policy.pdf • ***Credit Transfer*** Accredited Prior Learning will be considered in line with the College Policy on Accredited Prior Learning http://www.bbk.ac.uk/registry/policies/documents/accreditation-prior-learning.pdf • ***Programme Regulations***

	This programme adheres to the College Common Awards Scheme http://www.bbk.ac.uk/registry/policies/regulations
	• *Programme Specific Regulations (or not applicable)* To gain the exit qualification of a Graduate Certificate in Mathematics students must pass two 30-credit level 6 modules.

21	**Student Attendance Framework – in brief**
	The full version of the 'Student Attendance Framework' is available on the college website. **Principle** Consistent and regular student attendance in class (or equivalent) promotes and affords student success. Inconsistent and irregular attendance is less likely to result in student success and is consistent with lower marks and degree classifications being achieved and awarded. **Attendance expectation** Birkbeck, University of London expects you to consistently attend all timetabled sessions, including lectures, seminars, group and individual tutorials, learning support sessions, workshops, laboratories, field trips, inductions and demonstrations. **E-Registers** All Birkbeck students are issued with student cards. Students are expected to take them to classes and to assessment venues and to present them to a member of staff if requested. This is for the purpose of identifying Birkbeck students.

22	**Student Support and Guidance**
	All Birkbeck students have access to a range of student support services, details can be found on our website here: http://www.bbk.ac.uk/mybirkbeck/services/facilities

23	**Methods of Enhancing Quality and Standards**
	The College has rigorous procedures in place for the monitoring and enhancing its educational provision. This includes regular monitoring of programmes drawing on feedback from various sources including external examiner's reports, student feedback, student achievement and progression data. In addition, departments are reviewed every four to five years through the internal review process that includes external input. For more information please see the Academic Standards and Quality website http://www.bbk.ac.uk/registry/about-us/operations-and-quality

24	**Programme Director**	Sarah Hart
25	**Start Date *(term/year)***	Autumn 2010
26	**Date approved by TQEC**	Spring 2010
27	**Date approved by Academic Board**	Summer 2010
28	**Date(s) updated/amended**	26 April 2013