

Programme Specification

BSc (Hons) Mathematics

Valid from: September 2016

Faculty of Technology, Design and Environment

SECTION 1: GENERAL INFORMATION

Awarding body:	Oxford Brookes University
Teaching institution and location:	Oxford Brookes University
Final award:	BSc (Hons)
Programme title:	Mathematics
Interim exit awards and award titles:	CertHE, DipHE, BSc
Brookes course code:	AM
UCAS/UKPASS code:	G100
JACS code:	G100
Mode of delivery:	Face to face
Mode/s and duration of study:	Full Time: typically 3 years Sandwich mode: typically 4 years Part Time: typically 6 years Maximum 8 years
Language of study:	English
Relevant QAA subject benchmark statement/s:	Mathematics, Statistics and Operational Research (2015)
External accreditation/recognition: <i>(applicable to programmes with professional body approval)</i>	Accredited by the Institute of Mathematics and its Applications (IMA) to meet the educational requirements of the Chartered Mathematician designation when followed by subsequent training and experience in employment to obtain competencies to those specified by the QAA for taught masters degrees. http://www.ima.org.uk/
Faculty managing the programme:	Faculty of Technology, Design and Environment
Date of production (or most recent revision) of specification:	September 2015

SECTION 2: OVERVIEW AND PROGRAMME AIMS

2.1 Rationale for and/or Distinctive features of the programme

This programme is designed to develop the academic, vocational and creative skills of students and prepare them for careers in a wide range of numerate and analytic professions.

A distinguishing feature of this course is the emphasis on real-world applications of the mathematics studied, leading to enhanced graduate employability. Students are able to tailor their degree to suit their own career aspirations, by choosing pathways which focus on core mathematics, business or a broad range of modules.

The first year of the BSc Mathematics, the BSc Mathematical Sciences and the MMath in Mathematics programmes are identical, allowing transfer between courses. In addition, students may opt to transfer to the MMath in Mathematics at the end of the second year. Such transfers are dependent on suitable academic progress being made, and assume that all compulsory modules for the chosen programme will be taken and passed. The compulsory modules for the MMath in Mathematics are shown in section 4.1 of this document, and students considering a transfer to the programme should ensure that these modules are included in their programme of study.

Students considering a transfer to the MMath in Mathematics should be aware that if, in exceptional circumstances, an MMath student does not satisfy the criteria for the award of the MMath, then the student may be eligible for the award of a BSc (Hons) degree in Mathematics. This would be subject to the satisfactory completion of the module U08699 Mathematics Project, which is compulsory for the BSc (Hons) in Mathematics. If the student is unable to complete the module U08699 Mathematics Project, they would be eligible for a BSc ordinary degree in Mathematics.

2.2 Aim/s of the programme

The principal aim of this course is to provide an education in mathematics and to produce graduates who are equipped with the necessary range of skills and depth of understanding to successfully pursue careers in a wide range of numerate and analytic professions. Students completing the course will have an understanding of the foundations, techniques, limitations and applications of selected areas of mathematics, together with the confidence to tackle mathematical problems and to formulate and analyse mathematical and numerical models. They will be able to demonstrate an enhanced ability to communicate within and across discipline boundaries, and to work both independently and as a member of a team. To accomplish this the programme will specifically aim to:

- 1) provide a broad education in mathematics from which a career in this or a related subject area may be developed;
- 2) promote the use of mathematics as a means of expression and for problem solving in a range of application areas;
- 3) develop logical, analytical and problem solving abilities, and foster transferable skills in communication and information technology;
- 4) encourage students to develop a critical and independent approach to their learning;
- 5) provide a foundation for further academic study as independent learners, research training and future career development.

SECTION 3: PROGRAMME LEARNING OUTCOMES

On successful completion of the programme, graduates will demonstrate the following Brookes Attributes:

3.1 *Academic literacy*

- 3.1.1 Knowledge and understanding of a range of methods and techniques in mathematics and statistics.
- 3.1.2 Knowledge and understanding of the fundamentals of algebra, linear algebra, calculus and analysis.
- 3.1.3 Knowledge and understanding of applying mathematical techniques arising in mathematical contexts, to include a selection from: discrete mathematics, differential equations, geometry, numerical analysis and applied algebra.
- 3.1.4 The ability to construct logical mathematical arguments, including those requiring mathematical proof.
- 3.1.5 The ability to interpret and work with problems formulated in mathematical form.
- 3.1.6 Knowledge and understanding of mathematical modelling techniques
- 3.1.7 Knowledge and understanding of key concepts of probability theory and statistics.
- 3.1.8 The ability to use and apply selected statistical methods.

3.2 *Research literacy*

- 3.2.1 An ability to learn independently and apply that skill in order to extend the subject knowledge base or apply acquired knowledge to novel situations in a variety of analytic contexts.

3.3 *Critical self-awareness and personal literacy*

- 3.3.1 The ability to select and apply mathematical problem solving techniques and experience in analysing and evaluating these.
- 3.3.2 The ability to express themselves clearly, concisely and correctly using mathematical language
- 3.3.3 A critical and independent approach to learning.
- 3.3.4 Effective self-management and the ability to work in a team

3.4 *Digital and information literacy*

- 3.4.1 The ability to use and apply professional mathematical and statistical software.
- 3.4.2 Effective use of digital technology to present analysis and solutions to a variety of audiences.

3.5 *Active citizenship*

- 3.5.1 An ability to effectively communicate information derived from mathematical and statistical analysis to a global audience.

SECTION 4: PROGRAMME STRUCTURE AND CURRICULUM

4.1 Programme structure and requirements:

The programme comprises the following modules.

LEVEL: 4				
Module Code	Module Title	Credits	Status	Semester of delivery
U08408	Probability Theory	15	Compulsory	1
U08409	Statistical Inference	15	Compulsory	2

U08603	Algebra & Calculus	30	Compulsory	1 & 2
U08601	Mathematical Skills and Modelling	30	Compulsory	1 & 2
U08609	Introductory Mathematics	15	Recommended	1
U08400	Basic Survey Methods	15	Recommended	2
U08700	Word-processing & Spreadsheet IT Skills	15	Recommended	1 or 2
U08606	Discrete Mathematics	15	Recommended	2

LEVEL: 5

Module Code	Module Title	Credits	Status	Semester of delivery
U08424	Quantitative Research Methods	15	Compulsory	1
U08625	Linear Algebra and Analysis	30	Compulsory	1 & 2
U08631	Numerical Analysis I	15	Compulsory	2
U08629	Further Discrete Mathematics	15	Alternative Compulsory (1)	1
U08623	Applied Abstract Algebra	15	Alternative Compulsory (1)	2
U08627	Mathematical Models	30	Alternative Compulsory (1) (4)	1 & 2
U08423	Time Series Analysis	15	Alternative Acceptable (2)	1
U08440	Simulation & Modelling	15	Alternative Acceptable (2)	1
U08420	Mathematical Statistics	15	Alternative Acceptable (2)	2
U08626	Graph Theory	15	Acceptable	1
U08624	Complex Analysis	15	Acceptable	2
U50038	Mathematics for Decision Making	15	Acceptable (5)	2

LEVEL 5 (Optional Placement Year)

Module Code	Module Title	Credits	Status	Semester of delivery
U04665	Industrial Placement Year	0	Compulsory for sandwich mode students	1 & 2

LEVEL: 6

Module Code	Module Title	Credits	Status	Semester of delivery
U08699	Mathematics Project	30	Compulsory	1 & 2
U08687	Honours Topics in Mathematics	30	Alternative Compulsory (3)	1 & 2
U08671	Ordinary and Partial Differential Equations	30	Alternative Compulsory (3)	1 & 2
U08680	Geometry	15	Acceptable	2
U08682	Numerical Analysis II	15	Acceptable	1
U08672	Topology	15	Acceptable	2
U08688	Independent Study in Mathematics	15	Acceptable	1 or 2
U08481	Regression Models	15	Alternative Acceptable (2)	2
U08483	Medical Statistics	15	Alternative Acceptable (2)	2

(1): At least 30 credits from these modules must be included

(2): Not more than two of these modules may be included

(3): At least one of these modules must be included

(4): Compulsory for MMath

(5): Note this module is not acceptable for the MMath in Mathematics. Students considering a transfer to the MMath programme should not take this module.

Progression from first year to second year requires students, in addition to modular programme regulations, to pass all compulsory modules.

To obtain the BSc (Hons) in Mathematics, students must pass within eight years the equivalent of at least 24 modules (360 credits) including at least eight level 4 modules (120 credits) and at least sixteen acceptable level 5 and 6 modules (240 credits) of which at least six (90 credits) must be at level 6. Students must pass the following modules:

Module Code	Module Title	Credits	Level	Status	Semester of delivery
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Year 1 – 120 credits at level 4

U08408	Probability Theory	15	4	Compulsory	1
U08409	Statistical Inference	15	4	Compulsory	2
U08603	Algebra & Calculus	30	4	Compulsory	1 & 2
U08601	Mathematical Skills and Modelling	30	4	Compulsory	1 & 2

Plus a further 30 credits at level 4

Years 2 and 3 – 240 credits at levels 5 and 6, to include at least 90 credits at level 6

U08424	Quantitative Research Methods	15	5	Compulsory	1
U08631	Numerical Analysis I	15	5	Compulsory	2
U08625	Linear Algebra and Analysis	30	5	Compulsory	1 & 2
U08699	Mathematics Project	30	6	Compulsory	1 & 2

Plus at least 30 credits from:

U08629	Further Discrete Mathematics	15	5	Alternative Compulsory	1
U08627	Mathematical Models	30	5	Alternative Compulsory	1 & 2
U08623	Applied Abstract Algebra	15	5	Alternative Compulsory	2

Plus at least 30 credits from:

U08687	Honours Topics in Mathematics	30	6	Alternative Compulsory	1 & 2
U08671	Ordinary and Partial Differential Equations	30	6	Alternative Compulsory	1 & 2

Plus a selection from the following modules:

U08626	Graph Theory	15	5	Acceptable	1
U08624	Complex Analysis	15	5	Acceptable	2
U08682	Numerical Analysis II	15	6	Acceptable	1
U08672	Topology	15	6	Acceptable	1
U08680	Geometry	15	6	Acceptable	2
U08688	Independent Study in Mathematics	15	6	Acceptable	1 or 2
U50038	Mathematics for Decision Making	15	5	Acceptable	2
U08423 *	Time Series Analysis	15	5	Alternative Acceptable	1
U08440 *	Simulation and Modelling	15	5	Alternative Acceptable	1
U08420 *	Mathematical Statistics	15	5	Alternative Acceptable	2
U08481 *	Regression Models	15	6	Alternative Acceptable	2
U08483 *	Medical Statistics	15	6	Alternative Acceptable	2

* no more than 2 of these modules may be included

To obtain the BSc in Mathematics, students must pass within eight years the equivalent of at least 20 modules (300 credits) including at least eight level 4 modules (120 credits) and at least twelve acceptable level 5 and 6 modules (180 credits). Students must pass the following modules:

Module Code	Module Title	Credits	Level	Status	Semester of delivery
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Year 1 – 120 credits at level 4

U08408	Probability Theory	15	4	Compulsory	1
U08409	Statistical Inference	15	4	Compulsory	2
U08603	Algebra & Calculus	30	4	Compulsory	1 & 2
U08601	Mathematical Skills and Modelling	30	4	Compulsory	1 & 2

Plus a further 30 credits at level 4

Years 2 and 3 – 180 credits at levels 5 and 6

U08424	Quantitative Research Methods	15	5	Compulsory	1
U08631	Numerical Analysis I	15	5	Compulsory	2
U08625	Linear Algebra and Analysis	30	5	Compulsory	1 & 2

Plus at least 30 credits from:

U08629	Further Discrete Mathematics	15	5	Alternative Compulsory	1
U08627	Mathematical Models	30	5	Alternative Compulsory	1 & 2
U08623	Applied Abstract Algebra	15	5	Alternative Compulsory	2

Plus a selection from the following modules:

U08626	Graph Theory	15	5	Acceptable	1
U08624	Complex Analysis	15	5	Acceptable	2
U08682	Numerical Analysis II	15	6	Acceptable	1
U08672	Topology	15	6	Acceptable	1
U08680	Geometry	15	6	Acceptable	2
U08688	Independent Study in Mathematics	15	6	Acceptable	1 or 2
U08687	Honours Topics in Mathematics	30	6	Acceptable	1 & 2
U08671	Ordinary and Partial Differential Equations	30	6	Acceptable	1 & 2
U08699	Mathematics Project	30	6	Acceptable	1 & 2
U50038	Mathematics for Decision Making	15	5	Acceptable	2
U08423 *	Time Series Analysis	15	5	Alternative Acceptable	1
U08440 *	Simulation and Modelling	15	5	Alternative Acceptable	1
U08420 *	Mathematical Statistics	15	5	Alternative Acceptable	2
U08481 *	Regression Models	15	6	Alternative Acceptable	2
U08483 *	Medical Statistics	15	6	Alternative Acceptable	2

* no more than 2 of these modules may be included

To obtain the DipHE in Mathematics, students must pass within six years the equivalent of at least 16 modules (240 credits) including at least eight level 4 modules (120 credits) and at least eight acceptable level 5 and 6 modules (120 credits). Students must pass the following modules:

Module Code	Module Title	Credits	Level	Status	Semester of delivery
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Year 1 – 120 credits at level 4

U08408	Probability Theory	15	4	Compulsory	1
U08409	Statistical Inference	15	4	Compulsory	2
U08603	Algebra & Calculus	30	4	Compulsory	1 & 2
U08601	Mathematical Skills and Modelling	30	4	Compulsory	1 & 2

Plus a further 30 credits at level 4

Years 2 and 3 – 120 credits at levels 5 and 6

U08424	Quantitative Research Methods	15	5	Compulsory	1
U08631	Numerical Analysis I	15	5	Compulsory	2
U08625	Linear Algebra and Analysis	30	5	Compulsory	1 & 2

Plus at least 30 credits from:

U08629	Further Discrete Mathematics	15	5	Alternative Compulsory	1
U08627	Mathematical Models	30	5	Alternative Compulsory	1 & 2
U08623	Applied Abstract Algebra	15	5	Alternative Compulsory	2

Plus a selection from the following modules:

U08626	Graph Theory	15	5	Acceptable	1
U08624	Complex Analysis	15	5	Acceptable	2
U08682	Numerical Analysis II	15	6	Acceptable	1
U08672	Topology	15	6	Acceptable	1
U08680	Geometry	15	6	Acceptable	2
U08688	Independent Study in Mathematics	15	6	Acceptable	1 or 2
U08687	Honours Topics in Mathematics	30	6	Acceptable	1 & 2
U08671	Ordinary and Partial Differential Equations	30	6	Acceptable	1 & 2
U08699	Mathematics Project	30	6	Acceptable	1 & 2
U50038	Mathematics for Decision Making	15	5	Acceptable	2
U08423 *	Time Series Analysis	15	5	Alternative Acceptable	1
U08440 *	Simulation and Modelling	15	5	Alternative Acceptable	1
U08420 *	Mathematical Statistics	15	5	Alternative Acceptable	2
U08481 *	Regression Models	15	6	Alternative Acceptable	2
U08483 *	Medical Statistics	15	6	Alternative Acceptable	2

* no more than 2 of these modules may be included

4.2 Professional requirements

None

SECTION 5: PROGRAMME DELIVERY

5.1 Teaching, Learning and Assessment

Mathematics specialist provision is provided within the Department of Mechanical Engineering and Mathematical Sciences. The Mathematics course was designed with three fundamental goals for teaching and learning:

- (a) to ensure that the learning process, knowledge and assessment requirements placed on students continues to be transparent, achievable and of high quality
- (b) to equip students with appropriate professional and transferable skills, giving them 'added value'
- (c) to teach, practise and develop the skills students require to undertake research.

These are developed with reference to national guidelines such as the QAA subject benchmarking document for Mathematics, Statistics and Operational Research. In this vein every effort is made to integrate subject material and show its use, effect and application across the course following the University's Assessment Compact. The descriptions that follow are general and should not be seen as exclusive.

Contact time and student effort

Students typically study the equivalent of two 30 credit modules and four 15 credit modules per year, divided over two semesters. Each 15 credit undergraduate module requires 150 hours of effort, with 30 credit modules requiring 300 hours of effort. For a 15 credit module, timetabled teaching usually consists of 24 hours of lectures and 12 hours of practical classes, supplemented by a further 114 hours on guided self study. For 30 credit modules, students could expect these times to be doubled.

Self study typically consists of solving tutorial problems, reading or group meetings. The strategy for assessment of the learning outcomes is described in each module syllabus. Student engagement with assessment and feedback processes is achieved through such mechanisms as meetings with the programme team, a student forum, Department policy for timely feedback to allow reflection on assessment and learning, and end of module evaluation. The assessment strategy is guided by the "Brookes Assessment Compact" and details may be found at:

<http://www.brookes.ac.uk/aske/documents/BrookesAssessmentCompact09.pdf>

Module leaders choose a division between examination and coursework that suits the subject and the module learning outcomes. All assessment is designed to be aligned with module learning outcomes and the combination of learning outcomes and individual modules combine to provide the graduate attributes for the subject. There are currently four main strategies for assessment in the programme:

- 80% exam & 20% coursework
- 70% exam & 30% coursework
- 50% exam & 50% coursework
- 100% coursework

Typically examinations last for two hours. Coursework assignments are wide ranging and invariably challenging making use of strategies such as:

1. Poster presentations and oral presentations;
2. Reports, Essays and other Descriptive Explanation;

3. Problem sheets;
4. Class tests.

The provision of a coursework calendar prevents the bunching of deadlines, whilst student involvement in programme meetings helps to ensure that they have input to the development of assessment policy implemented in the programme. The virtual learning environment is used extensively to provide a wide variety of teaching materials and assessment methods with both formative and summative feedback. The virtual learning environment also makes learning resources, peer group support and interaction available outside normal working hours.

For all modules, in addition to the overall 40% pass mark, students are normally required to gain at least 30% of the available coursework mark and at least 30% of the available examination mark.

Achieving the Graduate Attributes

Graduate attributes are mapped to learning outcomes in groups of modules as follows:

Academic literacy

As a discipline, mathematics is cumulative in nature, and as such the acquisition of new skills in unfamiliar branches of the subject is heavily reliant on well developed prerequisite knowledge. The construction of logical mathematical arguments is a key competence developed in mathematics modules at all levels and requires the synthesis of new and familiar concepts in the subject. All modules in mathematics require the use of mathematical methods and problem solving techniques, where information expressed in mathematical form has to be analysed, manipulated, simplified and interpreted.

The programme includes a progression through a spine of compulsory mathematics modules, namely U08603 Algebra and Calculus in the first year and U08625 Linear Algebra and Analysis in the second year. The module U08603 Algebra and Calculus develops the foundations of algebra and calculus and includes some introductory material on linear algebra and mathematical proof. This provides the foundation work needed for a formal treatment of linear algebra and analysis in U08625 Linear Algebra and Analysis. These modules develop the advanced level prerequisite knowledge required for the study of honours level mathematics modules, and in particular for U08687 Honours Topics in Mathematics and for U08671 Ordinary and Partial Differential Equations. Mathematical modelling forms an integral part of the programme. Students take the compulsory module U08601 Mathematical Skills and Modelling in their first year, and these skills may be further developed in the modules U08627 Mathematical Models and U08687 Honours Topics in Mathematics. All programmes will include a selection of areas of mathematics from: discrete mathematics (U08626 Graph Theory, U08629 Further Discrete Mathematics), differential equations (Uxxxxx Differential Equations), numerical analysis (U08631 Numerical Analysis I, U08682 Numerical Analysis II), geometry and topology (U08680 Geometry, U08672 Topology), applied algebra (U08623 Applied Abstract Algebra).

Statistical knowledge is developed through the compulsory modules U08408 Probability Theory and U08409 Statistical Inference at basic level, and U08424 Quantitative Research Methods at level 5. Foundation work on probability theory and distributions is covered in U08408 Probability Theory. This is applied to random samples in U08409 Statistical Inference, where estimation and testing are also included. These two modules provide the necessary prerequisite statistical knowledge for a study of statistics at advanced level. In the compulsory level 5 module U08424 Quantitative Research Methods further statistical methods are presented and analysed. Having completed these three compulsory modules, students have the necessary background knowledge to take modules in other areas of statistics at levels 5 and 6.

Research literacy

Research literacy is a constant theme that appears again and again throughout the programme, from writing reports on mathematical models developed in the first year to more extended pieces of library research in U08424 Quantitative Research Methods and in the compulsory module U08699 Mathematics Project. In these modules, students apply skills and research literacies gained in earlier modules to enable them to plan an original piece of work and carry out the necessary research to familiarise themselves with current work in the area.

Critical self-awareness and personal literacy

This Graduate Attribute is addressed in a number of modules. Confidence in selecting and applying mathematical problem solving techniques is developed from the start of the course, with applications of mathematics being introduced in the first semester in U08601 Mathematical Skills and Modelling and featuring in modules such as Uxxxx Further Discrete Mathematics and U08623 Applied Abstract Algebra. Teamwork is an integral part of many modules, from modelling tasks in U08601 Mathematical Skills and Modelling and survey design in U08400 Basic Survey Methods to group work in U08424 Quantitative Research Methods and U08440 Simulation and Modelling. Discipline specific communication skills are developed throughout the course where mathematical arguments are presented, discussed, evaluated and applied, in the form of a solution or analysis of a problem, a mathematical proof, or a report on a mathematical topic. Oral communication is developed throughout the course via the mathematical discussion of problems and forms an integral part of selected topics from the module U08687 Honours Topics in Mathematics.

Digital information literacy

Graduates of the programme necessarily have very well developed computer based analytical skills because of the large amount of computer software used throughout the course. Mathematical software is first introduced in U08601 Mathematical Skills and Modelling, further developed in U08627 Mathematical Models and is also taught and used as a tool to assist with the analysis of problems in the module U08687 Honours Topics in Mathematics. Further use of mathematical software is also made in other modules at advanced level (e.g. U08631 Numerical Analysis I) and honours level (e.g. U08682 Numerical Analysis II). Statistical software is first introduced in the basic module U08408 Probability Theory and is also used in U08409 Statistical Inference and U08424 Quantitative Research Methods.

However, the Graduate Attribute 'Digital information literacy' extends beyond this to include the use of computers for more general skills such as presentations, literature reviews, preparation of reports, and so on. Several modules throughout the programme, for example U08623 Applied Abstract Algebra, provide the opportunity to gain these digital literacy skills.

Active citizenship

This Graduate Attribute relates to how well the graduates of the programme are prepared to work in the wider business context. The modern treatment of mathematics relies heavily on the use of established symbolic notation and as such the subject has become an international language which is practised and used world-wide.

The current staff comprises a diverse group of individuals from several continents, who have experience of teaching both in the UK and elsewhere, both in English and in other languages. To their teaching, the members of this group necessarily bring both cultural diversity and knowledge of the subject curricula in other countries. This is further enhanced by the experiences of researchers in the group who are involved in international collaborations and participate at international conferences.

The group has active exchange links, through the Erasmus Programme, with the University of Malta and the Pedagogische Hochschule Karlsruhe. Students studying Mathematics have the opportunity to

undertake exchanges and there are international students on all courses. All of these activities contribute towards enhancing the international flavour of the community of learners and teachers working together during modules.

5.2 Assessment regulations

The programme conforms to the University Regulations for the undergraduate modular programme.

SECTION 6: ADMISSIONS

6.1 Entry criteria

Students entering year 1 of the courses will normally be at least 18 years of age and hold one of the following qualifications:

- (i) A-levels (typically a minimum of ABC grades) in three subjects with a grade A in Mathematics.
- (ii) International Baccalaureate Diploma (typically a minimum of 30 points with at least 5 in Higher Mathematics)
- (iii) BTEC National Diploma (typically with one distinction and two merits) PLUS A2-level Mathematics (typically at grade A minimum)

A minimum grade C at GCSE English Language is expected.

Credit entry into the second or third year of the programme may be possible for students who have accrued appropriate mathematical credits.

Entry to the BSc (Hons) degree in Mathematics is also possible via the Foundation Year in Engineering (FEG) and Foundation Year in Computing (FCO) offered by the Faculty of Technology, Design and Environment. This option is normally recommended to those prospective students whose entry qualifications do not match the levels outlined in the above paragraph.

English Language Requirements

For details of the University's English Language requirements see:

<http://www.brookes.ac.uk/international/apply/english/>.

In particular, students for whom English is not their first language are required to have IELTS 6.0 (with 6.0 in reading and writing, 5.5 in listening and speaking).

6.2 DBS checks

A DBS check is not necessary for entry to this course but may be required to fulfil criteria for entry to some work based learning opportunities.

SECTION 7: STUDENT SUPPORT AND GUIDANCE

For many years, the Department has provided new students (including direct entry) with a detailed induction programme in the first week of Semester 1. This is now followed on by the Open Seminar Series. Students often feel there is an 'overload' and too much to 'take-in' in Week 1 so the Open

Seminar Series provides an opportunity to embed University learning approaches and styles. It should also be remembered that many students, particularly overseas students, miss out on Week 1 activities due to arriving late at the University. Upon arrival at the University all students are allocated an Academic Advisor and have access to Student Support Co-ordinators for general academic and pastoral advice, respectively.

In practical terms, support for student achievement is given in a variety of ways, namely a timetable of tutorials and workshops, practical classes to support material covered in formal lectures as well as the 'surgeries' described earlier.

The Department is supportive of students with registered disabilities and special needs and works closely with Student Support Co-ordinators who liaise closely with students, staff involved with their learning and teaching, and the University's Student Services who operationalise the University's disability policies. These mechanisms allow for enhanced learning opportunities from this group of students. For example, online resources on various disabilities are available to staff via the University's intranet. Support for disabled students is provided centrally and staff can liaise directly with these services regarding individual students. The University provides a wide variety of services such as for example, the dyslexia support, note takers, sign language interpreters and more general support workers for students with mobility difficulties as well as special examination provision. During the review period, the department has taught, assisted and supported many students with a wide variety of disabilities. These include students with dyslexia, dyspraxia, visual impairment, epilepsy, audio impairment, mobility and muscular disabilities. Examples of the support given include providing materials in alternative forms and ensuring that room locations are appropriate for wheelchair users. The symbolic nature of Mathematics means that successful note taking is assisted considerably by having some appreciation of how Mathematics should look on the page. In the past, it has sometimes been found challenging to recruit support workers to act as note takers or amanuenses. In such cases academic staff have been contacted by central staff and have become involved to try and find solutions where needed.

This support provision is common to all undergraduate programmes within the Department, and since the MMath is an undergraduate programme it is appropriate that the same support is available to MMath students.

Careers sessions are organised for all students on Mathematics programmes, and guidance is also provided by the Faculty's Placements Officer. Students on the MMath course will be able to take a placement year after their second year. The Placements Officer posts details of vacancies on the Department's placements page on Moodle, although students are also able to find their own placement if they would prefer. Students are responsible for obtaining a placement position, and no guarantees of placement availability are made by the Department.

SECTION 8: GRADUATE EMPLOYABILITY

Students graduating from this course are able to follow an extensive range of career opportunities. Examples of successful employment are:

Programmer
Investment Analyst, Stanhope Capital
Circulation Executive, IPC Media
Trainee Accountant
Data Analyst
IT Analyst
Junior Accountant, Matson Driscoll and Damico LLP UK

SECTION 9: LINKS WITH EMPLOYERS

The Department has extensive links with local employers and the Faculty has even broader professional links with businesses in every sector of the economy. Currently graduates in Mathematics follow widely varying career paths in a very diverse range of professions but it is a strategic objective to build stronger links with companies to allow students with an interest in applied mathematics to participate in a placement year to grow and improve the existing reputation of the Department.

SECTION 10: QUALITY MANAGEMENT

Indicators of quality/methods for evaluating the quality of provision

Our robust quality management practices include:

- Rigorous admission procedures
- Feedback from students in the annual module evaluations
- Annual evaluations of the programme by External Examiners
- Annual Programme Reviews
- Five yearly Periodic Reviews
- Subject Committees and Subject Away Days
- Student Representative System

The programme also conforms to the structure and regulations of the University's Undergraduate Framework. The course is subject to the University quality assurance procedures.