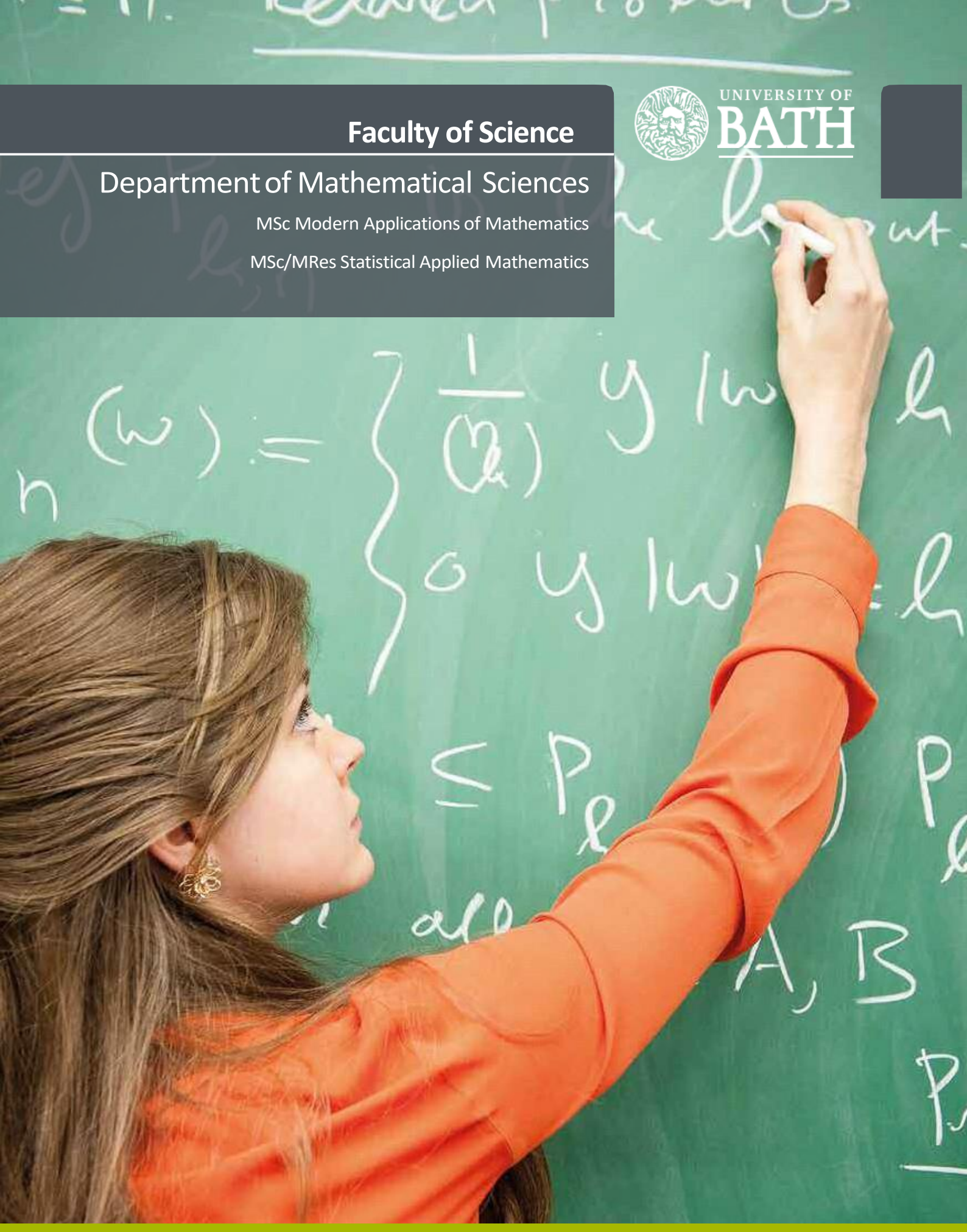

UNIVERSITY OF BATH

Faculty of Science

Department of Mathematical Sciences

MSc Modern Applications of Mathematics

MSc/MRes Statistical Applied Mathematics

Postgraduate Taught Programme Handbook 2020-21

CONTENTS

ABOUT THIS HANDBOOK

This is the 2020-21 Handbook for all students on the Mathematical Sciences Postgraduate Taught programmes.

The contents of this Handbook are accurate at the time of publication but information contained within may sometimes be subject to change after this Handbook has been issued.

The Important Links and Information section of this Handbook includes links to information online about both the topics covered in this Handbook and other key topics. It is important that you familiarise yourself with the online information as well as the contents of this Handbook.

In August 2020 we wrote to you to explain how your programme has been adapted in response to COVID-19 safety measures and our 'Bath Blend' approach to learning and teaching for academic year 2020/21.

Information about the structure of your programme (which units you take when, which units are compulsory etc), as well as key unit information (including learning outcomes, synopsis and assessment), for the upcoming academic year can be found online in the Unit and Programme Catalogues (see **Unit and Programme Catalogues** in this Handbook and www.bath.ac.uk/catalogues). You will also receive details about unit content and assessment via the University's online learning environment, Moodle.

You will be informed, normally by your Director of Studies or Unit Convenor, of any further changes that will affect your programme or a unit. See also **Unit and programme changes 2020/21** in this Handbook.

You will be informed via announcements if any services offered by the University will need to be changed as a result of changing circumstances during 2020/21.

While this Handbook signposts information about regulations for students, it does not have regulatory status itself, and the Regulations available online (Regulations for Students: http://go.bath.ac.uk/regulations and Assessment Regulations: www.bath.ac.uk/corporate-information/new-framework-for-assessment) are the most up-to-date and take precedence over the contents of this Handbook. It is your responsibility to take the time to familiarise yourself with the Regulations.

If in doubt about what applies to you, or if your circumstances change (for example if you are returning from a suspension of study, or transferring to a different programme) please contact your Director of Studies Dr Ben Adams (b.adams@bath.ac.uk) for advice.

Key Taught Programmes Team contact (MSc/MRes):Matthew Albertyn - facscipgtadmin@bath.ac.uk

Key SAMBa contact (MRes only): SAMBa Centre Coordinator – SAMBa@bath.ac.uk

IMPORTANT LINKS AND INFORMATION

UNIVERSITY INFORMATION ONLINE

This Handbook is an accompaniment to important information available to all students on the University's website. It is expected that you will familiarise yourself with the online information signposted below.

If you cannot find the information you are looking for in this Handbook or on the web please contact your Director of Studies in the first instance.

SUPPORTING YOU

Student Support Services
https://www.bath.ac.uk/professional-services/student-services/

SU Advice and Support Service
www.thesubath.com/advice

Equality, Diversity and Inclusion
https://www.bath.ac.uk/professional-services/equality-diversity-and-inclusion/

Advice for specific groups of students:
International students
www.bath.ac.uk/topics/visas
www.bath.ac.uk/guides/student-immigration-appointments-and-drop-in-sessions
www.bath.ac.uk/campaigns/studying-at-bath-as-an-erasmus-exchange-or-visiting-student
www.bath.ac.uk/guides/academic-engagement-monitoring-for-tier-4-students
Care-leavers
https://www.bath.ac.uk/publications/university-and-leaving-care/
Estranged students
https://www.bath.ac.uk/publications/university-and-estranged-students/
Refugees
https://www.bath.ac.uk/publications/university-and-refugees/
Students with caring responsibilities
https://www.bath.ac.uk/publications/university-and-young-adult-carers/

Pregnancy and maternity

CORE UNIVERSITY SERVICES / INFORMATION

Dissatisfaction with a University service or facility (Complaints)
www.bath.ac.uk/guides/student-complaints-policy-and-procedure

Health and Safety
www.bath/ac/uk/guides/student-health-and-safety
Be Safe on Campus information (COVID-19)
https://www.bath.ac.uk/campaigns/be-safe-on-campus-and-in-bath-during-the-covid-19-pandemic/

Library and Study Spaces
https://library.bath.ac.uk/home
www.bath.ac.uk/campaigns/where-you-can-study-on-campus-and-in-the-city

Skills Support and Development
http://go.bath.ac.uk/my-skills
www.bath.ac.uk/campaigns/get-ahead-with-skills-at-bath

Learning Technologies & IT Support
https://www.bath.ac.uk/professional-services/digital-data-and-technology/

Careers Service
www.bath.ac.uk/professional-services/careers-service

Data Protection
www.bath.ac.uk/guides/data-protection-guidance

Bullying, harassment and victimisation

https://www.bath.ac.uk/guides/getting-advice-if-you-are-pregnant-while-studying-or-have-a-young-child/

Disabilities, long-term illness, and specific learning difficulties
http://go.bath.ac.uk/disability-service

https://www.bath.ac.uk/campaigns/report-and-support/

SU Code of Practice and membership
www.bath.ac.uk/corporate-information/code-of-practice-for-the-students-union-su

SUPPORTING YOUR LEARNING

Your Learning
www.bath.ac.uk/guides/your-learning
Bath Blend
Glossary
Year Dates and Timetables

Regulations for students
http://go.bath.ac.uk/regulations

Registration
www.bath.ac.uk/guides/registering-with-the-university

Withdrawing from or suspending your studies
www.bath.ac.uk/guides/suspending-your-studies-or-leaving-the-university

Placements
http://go.bath.ac.uk/placements-information-for-students

Personal Tutoring
www.bath.ac.uk/guides/personal-tutoring

Units and Programmes
www.bath.ac.uk/guides/about-units-and-programmes
Catalogues
Option choices
How your programme is reviewed and monitored

Student Representation and Engagement
www.bath.ac.uk/campaigns/student-engagement-shape-your-university

Assessment
www.bath.ac.uk/guides/assessment-guidance-for-students
Assessment processes
Understanding your results
External examiners
Supplementary assessment

Academic Integrity
www.bath.ac.uk/campaigns/academic-integrity-training-and-test

Assessment Regulations
www.bath.ac.uk/corporate-information/new-framework-for-assessment
Definitions of assessment terms

Individual Mitigating Circumstances
www.bath.ac.uk/guides/reporting-individual-mitigating-circumstances-to-the-university

Academic Appeals
www.bath.ac.uk/guides/appealing-against-an-academic-decision

ABOUT THE DEPARTMENT 2020/21

The Department of Mathematical Sciences is an integrated department, whose work in the three research areas of Pure Mathematics, Applied Mathematics and Statistics has a strong international reputation. Staff in all three areas are involved in a wide range of national and international research activities, and several members of the Department have won prestigious prizes, medals and research fellowships.

In the most recent Government-led assessment of Universities in the UK (REF 2014), 88% of our research in all areas (Pure and Applied Mathematics, Statistics and Probability) was rated world- leading/internationally excellent. The Department is listed 10th among UK universities in the Complete University Guide mathematics subject table for 2021, with the University placed 9th overall.

The Department welcomes research students (both full-time and part-time) working towards the degrees of PhD, Integrated PhD and MPhil. With 21 professors and 37 other academic staff, a wide range of research topics can be supported in depth, and students with a good honours degree or equivalent will find much to enrich their scientific interests. Some research is of a fundamentally theoretical nature, while much of the more applied work involves collaboration with other departments in the University, with industry and technology, and with government research departments.

The Pure and Applied Mathematics groups work on:

- Algebra and Geometry
- Analysis and Differential Equations
- Continuum Mechanics and Waves
- Industrial Applied Mathematics
- Mathematical Biology
- Mathematical Control Theory
- Numerical Analysis

The Statistics group works on:

- Probability
- Statistics
- Data Science

These research groups run regular seminar programmes.

KEY CONTACTS/STAFF LIST

A staff list can be found at https://www.bath.ac.uk/teams/department-of-mathematical-sciences- academic-staff/

Head of Department	Prof Paul Milewski
Director of Studies (MSc Modern Application of Mathematics& MRes Statistical Applied Mathematics)	Dr Ben Adams

Senior Tutor	Dr Antal Jarai
Department Coordinator Team	maths-enquiries@bath.ac.uk

The primary contact for students on the Msc Modern Applications of Mathematics programme is the taught programmes team. The primary contact for students on the Mres Statistical Applied Mathematics programme is the SAMBA team. As some taught masters programmes have units in common with undergraduate programmes, you may need to address some queries to the department office, which supports our undergraduate programmes. If in doubt, please email the taught programmes team on faccsipgtadmin@bath.ac.uk.

ABOUT YOUR PROGRAMME

MSc (PG Cert and Dip) in Modern Applications of Mathematics

The programme is designed to enable students to understand, analyse, evaluate and apply the latest knowledge and skills of interdisciplinary applied mathematics and modern scientific computing in both theoretical and practical contexts. The programme aims to bridge the gap between theory and applications, as well as to link mathematics and statistics with engineering, physics, chemistry and biology in ways that are of direct relevance to industry.

The first two semesters provide the students with the theory, methods and applications of mathematics and scientific computing. The students can refine their studies into areas of specific interest or relevance to their intended career through a wide choice of options in mathematics, computing, engineering, physics and biology. Over the summer months (June-September) the MSc students undertake a substantial individual project proposed by staff members in the mathematics, engineering or biology departments, by external learning and research institutions or by an industrial partner. This allows students to undertake extensive research and pursue the latest practical applications, often in an industrial context. This includes the possibility of a placement with an industrial partner.

The part time course has a similar progressive structure. The content of the first two semesters in the full time course split appropriately over a two year period and with the project undertaken in the latter half of the second year.

The Postgraduate Diploma comprises only the taught provision. All units of this programme are assessed at the H and M levels and the total taught requirement is 60 credits. Entry to the programme is through the MSc in Modern Applications of Mathematics.
The Postgraduate Certificate comprises only part of the taught provision. All units of this programme are assessed at the H and M levels and the total taught requirement is 30 credits. Entry to the programme is through the MSc in Modern Applications of Mathematics.

MSc/MRes Statistical Applied Mathematics

The Integrated PhD programme in Statistical Applied Mathematics incorporates Masters' level study leading to the award of an MRes in Statistical Applied Mathematics followed by a research project leading to the award of PhD.

The Integrated PhD in Statistical Applied Mathematics is designed for students in the Centre for Doctoral Training in Statistical Applied Mathematics at Bath (SAMBa).

The first year programme will train students at the interface between Statistics and Applied Mathematics. Students will complete a core syllabus covering statistics and data science, applied and probabilistic analysis and modelling, and computation and applied mathematics. SAMBa's programme spans the breadth of these areas, combining excellence in research, while embedding an integrated programme of training in cross-disciplinary and industrial collaboration.

The MRes and MSc programmes will provide training in the applications of Statistical Applied Mathematics to industrial and cross-disciplinary research. Through interactions with industrial partners, which may continue to the research phase, students will gain hands-on experience of problem formulation and the development of research projects.

After successful completion of the first year (which leads to the award of an MRes) students proceed to PhD research and follow a project formulated during the MRes. This PhD project will be along the continuum of the Statistical Applied Mathematics remit and will commonly involve industrial or cross-disciplinary collaboration. Students with a taught stage average of at least 50% but less than 60% will transfer to the MSc.

PROGRAMME AIMS AND LEARNING OUTCOMES

Programmes Aims: MSc (PG Cert and Dip) in Modern Applications of Mathematics

The aims of the Department of Mathematical Sciences build upon the mission statement of the University "to advance learning and knowledge by teaching and research, particularly in science and technology, and in close association with industry and commerce".

The overall aim of the Modern Applications of Mathematics programme is to train students in the fundamentals of applied mathematics and scientific computing and develop the skills needed to apply these techniques in an interdisciplinary environment. The detailed aims of the course are:

1. to provide innovative training in interdisciplinary applied mathematics, statistics and computational science;

2. to develop an awareness of modern applications of mathematics in an interdisciplinary and industrial environment;

3. to develop the ability to apply mathematical knowledge and skills to the solution of a variety of problems from engineering, science and industry;

4. to develop the ability to effectively communicate the results of mathematical investigations;

5. to provide direct contact with industry through industrial projects, placements and guest lectures from industrialists;

5. to provide a rational, flexibly structured and coherent programme of study which is relevant to the needs of employers and the professional development of students.

The PG Certificate focuses principally on aims (1) and (3), but offers students scope for the development of some skills relevant to aims (2) and (4).

The PG Diploma gives further opportunities to develop skills relevant to aims (1)-(4), and includes some contact with industry relevant to aim (5).

The MSc additionally involves a project which gives the opportunity to fully develop aim (5).

Programme Aims:* *MSc/MRes Statistical Applied Mathematics

Year 1, MRes

During their first year, students will study Statistical Applied Mathematics at an advanced level. They will explore the applications of this broad area through case studies, small group research projects, experiencing first-hand the process of constructing a mathematical formulation of complex problems and planning research projects to tackle these problems.

If successfully completing the MRes, a student will be well-prepared to embark on a PhD research project. The MRes Thesis Formulation Report and PhD thesis are assessed independently and material assessed in one will not be assessed in the other.

Years 2 to 4, PhD

In their PhD work, students will create new knowledge in their specific research topic within the broader field of Statistical Applied Mathematics.

The criteria for the award of the degree of PhD include that the candidate has:

(i) pursued the programme of study as described

(ii) Passed interim assessments through successful written and oral examinations and satisfactory completion of taught units.

(iii) presented a thesis on the candidate's advanced study and research which satisfies the

Board of Examiners as:

(a) making an original and significant contribution to knowledge;

(b) giving evidence of originality of mind and critical judgment in a particular subject;

(c) containing material worthy of peer-reviewed publication;

(d) being satisfactory in its literary and/or technical presentation and structure with a full

bibliography and references;

(e) demonstrating an understanding of the context of the research: this must include, as

appropriate for the subject of the thesis, the scientific, engineering, commercial and

social contexts, and

(iv) passed a viva voce examination conducted by the examiners on the broader aspects of

the field of research in addition to the subject of the thesis, as described in Regulation 16.

Programme Learning Outcomes: MSc (PG Cert and Dip) in Modern Applications of Mathematics

Knowledge and understanding	1. demonstrate knowledge and understanding of theory, methods and techniques in applied mathematics and scientific computation 2. demonstrate an up-to-date knowledge of developments in applied and computational mathematics and statistics 3. demonstrate a knowledge of the capabilities and limitations of modern computer packages, as well as 4. an understanding of the main concepts in parallel computing The PG Cert will include at least one of outcomes (1)-(4). The PG Dip and MSc will include all of outcomes (1)-(4).
Intellectual skills	1. demonstrate proficiency in applied mathematical, statistical and computing techniques 2. show sound judgement, initiative and originality in addressing real and possibly incompletely defined problems arising from applications The PG Cert will include outcome (1) for at least one of the specified disciplines. The PG Dip will include outcome (1) for all of the specified disciplines. The MSc will also include outcome (2).
Professional Practice Skills	1. construct and critically assess mathematical models for real applications 2. formulate methods of solution for a variety of applied mathematical problems and provide a theoretical justification for the methods 3. solve and/or analyse problems arising from a variety of situations, investigate the properties of the solution and interpret the results in terms of the original problem 4. program a range of applied mathematical applications using computing languages such as Fortran and Matlab 5. apply numerical methods to the solution of mathematical problems, demonstrate an awareness of their limitations and of the practical issues involved in their implementation 6. understand the relationship between fundamental concepts of applied mathematics and scientific computing and their application in other disciplines 7. demonstrate enhanced personal skills including written and oral communication, time-management and decision-making 8. demonstrate skills in research and the presentation of research The PG Cert will include at least two of outcomes (1)-(7). The PG Dip will include all of outcomes (1) -(7). The MSc will also include outcome (8).
Transferrable key skills	1. write reports in collaboration with a range of individuals using a variety of means 2. research efficiently using electronic databases 3. apply analytic and computational skills to the formulation and solution of a range of problems arising in a variety of application areas

	4. communicate and present results to an audience without specialst knowledge of the topic The PG Dip will include outcomes (2) and (3). The MSc will also include outcomes (1)-(4).

Programme Learning Outcomes: MSc/MRes Statistical Applied Mathematics

Knowledge and understanding	***Year 1, MRes*** The level of attained knowledge and understanding may differ between students graduating with MRes, MSc and PGDip awards, and the quantity is lower for a PGCert. • Broad knowledge and understanding of subject matter at the interface of Statistics and Applied Mathematics. (MRes/MSc/PGDip/PGCert) Delivered through participating in a series of lectures that cover the basic skill set required and developing, through interdisciplinary research projects, SLS, ITTs, reading courses, advanced mathematical study unit, and sharing knowledge through the cohort, a strong appreciation of how to bring knowledge and understanding together across the continuum of statistical applied mathematics and deliver creative research solutions. Courses are assessed through coursework, written and oral examinations as defined by the unit descriptions. ***Years 2 to 4, PhD*** • Broad knowledge and a deep understanding of subject matter at the forefront of the discipline. • A comprehensive knowledge of techniques and methodologies of Statistical Applied Mathematics. Delivered through continued participation in Interdisciplinary Research Projects, SLS, ITTs and courses as well as deep investment into the research area through working closely with supervisory team. Assessed through participation and commitment to research (e.g. talks at conferences, publishing research papers, participating in workshops).
Intellectual skills	***Year 1, MRes*** The Intellectual Skills specific to MRes and MSc reflect the different summer projects for these degrees. • Ability to translate an applied problem into a mathematical formulation. (MRes/MSc/PGDip/PGCert) • Ability to review mathematical literature to identify theory and methods to tackle a stated problem. (MRes) • Ability to appraise mathematical method and identify new research areas motivated by a practical application. (MRes)

	• Ability to pursue an applied project, under supervision (MSc) Delivered through the SLS, ITTs and, where applicable the summer thesis which are examined through research proposals, written reports and oral presentations ***Years 2 to 4, PhD*** • Ability to develop new theory and methodology, or to apply existing methods in novel, challenging settings. • Ability to work independently and with originality in problem solving, developing or adapting advanced methodologies and critically evaluating their effectiveness. • Ability to synthesise several approaches, manage complex arguments and resolve apparent contradictions in areas of knowledge. Delivered through working closely with supervisory team to deliver novel research ideas and assessed through continued monitoring of commitment and progress
Professional Practice Skills	***Year 1, MRes*** • Computing and mathematical modelling. (MRes/MSc/PGDip/PGCert). Delivered through the taught units in the first year, assessed through written and oral examinations and coursework (both individual and group). ***Years 2 to 4, PhD*** • Ability to apply mathematical modelling and computation in a research context, adapting to unfamiliar situations. • Leadership, management and effective teamwork. Delivered through the mentoring role at ITTs and SLS, through working as part of a cohort and exploring leading edge research questions with supervisory team and assessed through participation and commitment.
Transferrable key skills	***Year 1, MRes*** • Matlab, R, Statistical software, other programming languages; (MRes/MSc/PGDip/PGCert) • Collaborative learning, self-organised learning, working in teams, seminar organisation, independent study. (MResMSc/PGDip/PGCert) • Consultancy skills; (MRes) • Research proposal writing. (MRes)

	These are delivered through all aspects of SAMBa and students are expected to engage in the process of developing these skills. ***Years 2 to 4, PhD*** • Presenting research results, communicating complex information and relating mathematical findings to the real world problems that motivated the research. • Guiding and supporting the learning of others. There is no formal assessment of these skills but students are expected to demonstrate willingness to engage, learn and improve throughout their time in SAMBa, including at ITTs and through research dissemination.

PROGRAMME DESCRIPTION: STRUCTURE OF YOUR PROGRAMME

The structure for your programme year for 2020/21 can be found in the 2020/21 Unit and Programme Catalogues (see below). This is where you find important information on which units you are taking in which semester and if any units are 'designated essential units' (DEUs) that you must pass.

The content of the Programme Catalogues is correct at the time of publication. Programmes and units may be subject to reasonable change (see also **Unit and programme changes 2020/21** in this Handbook).

UNIT AND PROGRAMME CATALOGUES

This is where you will find details about all years of your programme as well as details about individual units for the current academic year.

The Catalogues also provide links to the relevant areas of the University's assessment regulations, showing how these are applied to this programme of study.

For the online Catalogues, please refer to **Important Links and Information** in this Handbook. See also the section in this Handbook on **Assessment.**

YOUR LEARNING

For 2020/21, the University has developed a blended learning approach called 'The Bath Blend' which combines in-person activities on campus, live interactive learning, and structured independent study.

The Bath Blend approach to programme delivery has been developed to be flexible in the face of possible changes in law, including measures on social distancing, which may occur through the course of this academic year.

Information on IT support and key software for this academic year is available online. Please refer to **Important Links and Information** in this Handbook.

YOUR TIMETABLE

Using MyTimetable, you can access your personal timetable and download it into an electronic calendar.

Your In-Person Teaching (IPT) day and Live Online Interactive Learning (LOIL) sessions will show in your timetable. Links to LOIL sessions can also be accessed through the relevant unit page on the University's online learning environment, Moodle.

When you start your units, you will be able to access associated online material at a time that suits your schedule.

MyTimetable updates regularly, so should there be a change to your timetable, it will be reflected in MyTimetable.

Full information is available online. Please refer to **Important Links and Information** in this Handbook.

PHYSICAL STUDY SPACE – 2020/21

As in previous years, you will be able to book study space on campus and in the city for individual or group study. Information on how to book, and the COVID-19 requirements, is available online. Please refer to **Important Links and Information** in this Handbook.

OPTION CHOICES

If your programme has option choice then information about how and when to choose your option units can be found online (please refer to **Important Links and Information**). If applicable, you will receive an email notification at the relevant point in the year when online unit selection is available and if you need to discuss option choices, please contact your Director of Studies.

UNIT AND PROGRAMME CHANGES 2020/21

All programme and unit changes are managed through formal University processes. This is to ensure that changes are academically appropriate, properly supported and are done in a way that safeguards the interests of students.

In addition to the Bath Blend approach to delivery of your programme in 2020/21, which has already been put in place, it is possible that further changes to your programme may be required. These are more likely to be part of continual development aimed at enhancing your learning experience and maintaining high academic standards and quality. Such changes could be, for example, to update content to reflect latest developments in a particular field of study, or to respond to student feedback on delivery and/or assessment. Students who would be affected by proposed changes are consulted about them, either via their Staff/Student Liaison Committee or directly, depending on the nature of the change.

As we have already experienced, it is sometimes necessary to make changes due to unforeseen or unavoidable circumstances. Outside of the global pandemic, this could be for reasons such as:

- the accrediting body requiring changes to be made to the course, or,
- being unable to run an option unit because too few students selected it.

When this happens, we always try to ensure that the impact on students is minimised and that those affected are informed of the changes at the earliest opportunity.

Information on how we assure the quality and standards of your programme of study is available online. Please refer to **Important Links and Information** in this Handbook.

GIVING FEEDBACK ON YOUR PROGRAMME TO THE UNIVERSITY

The University is committed to continually improving its practice and aims to engage students as active partners in their education (Education Strategy 2016-21). The three main ways in which your feedback will be sought will be through:

- Staff / Student Liaison Committees (SSLCs)
- surveys and evaluations
- the Students' Union.

Full information is available online. Please refer to **Important Links and Information** in this Handbook.

ASSESSMENT

Full information is available online. For signposts to important information on many aspects of assessment, please refer to **Important Links and Information** in this Handbook.

Any exam-based assessment during the 2020/21 academic year will be online. More information on assessment arrangements for this year, including online assessment, will be provided via the University webpages and updated as necessary.

SUBMISSION DEADLINES

You will be informed of the deadline to submit your assessment.

LATE SUBMISSION OF COURSEWORK

To ensure fairness to all students, you will be expected to hand in all assessed coursework and dissertations/projects by a specified date and time, and there are penalties for submitting work after the specified deadline. If there are valid circumstances preventing you from meeting a deadline, your Director of Studies may grant you an extension to the specified submission date. Forms to request an extension are available from the Department.

WORD COUNTS

Coursework tasks will normally have a word limit or word range. This, and the penalty for non-compliance, will be confirmed when you receive an assignment. This is in order to give an indication of the depth and detail of work required, and to ensure that students' submitted work is comparable.

If you exceed the word or page limit, then a penalty will be applied. The penalty should be stated in writing when the assignment task is distributed. You should take note of what is included when calculating the total word or page count (e.g. whether or not contents pages, appendices, footnotes, bibliographies and other elements that are not part of the main text are included).

You should check with your Director of Studies if you have questions about word or page counts and penalties.

FEEDBACK ON ASSESSMENT

During your course, you will receive feedback on your assessed work. This feedback may take different forms, depending on the subject and type of assessment. You will be informed of the timing and nature of the feedback you will receive on each assessment, including whether the piece of work itself will be returned to you. For exam-type assessment, you may receive general feedback relevant to all who took the assessment rather than individual feedback. You can discuss feedback you receive on assessments alongside your performance and progress in your studies at meetings with your Personal Tutor.

ACADEMIC INTEGRITY

The University has a wide range of resources available to you to help you understand academic integrity and enhance your academic writing and practice.

It also has in place an Academic Integrity Test you are required to take and pass (the pass mark is 85% but you can take the test as many times as you need to). You will not be able to progress beyond the next progression point in your studies until you pass this test.

When you submit assessment, you will be expected to make a declaration that the work is your own and, where you have re-used your own work and/or used other sources of information, that you have referenced the material appropriately. The University uses a plagiarism detection service (currently Urkund), which searches the web and databases of reference material and content submitted by other students, to identify duplicated work. Where practical, all summative assessment is submitted to this service to check for similarities as an initial indicator of whether work has been plagiarised and an assessment offence committed.

Submission of your assessment to the Plagiarism Detection Service - Data Protection statement

The Plagiarism Detection Service complies with European Data Protection legislation. When you registered with the University, you gave it permission to process your personal data for a variety of legitimate purposes. This includes allowing the University to disclose such data to third parties for purposes relating to your studies. The University, at its sole discretion, may submit the work of any student to the Plagiarism Detection Service (in accordance with Regulation 15.3e) and may make, or authorise third parties to make, copies of any such work for the purposes of:

1) assessment of the work
2) comparison with databases of earlier work or previously available works to confirm the work is original
3) addition to databases of works used to ensure that future works submitted at this institution and others do not contain content from the work submitted.

The University will not make any more copies of your work than are necessary, and will only retain these for so long as remains necessary, for these purposes.

Please note that, if at any time the University submits any of your work to the Plagiarism Detection Service, the service will be provided with, and will retain, certain personal data relating to you – for example, your name, email address, programme details and the work submitted. Such data may be transferred by the Plagiarism Detection Service to countries worldwide (some of which may not be governed by EU data legislation) in order for the work to be checked and an originality report generated in accordance with the proper workings of the Plagiarism Detection Service. Personal data is retained indefinitely by the Plagiarism Detection Service upon submission of work. You may ask for your personal data to be removed by contacting the University's Data Protection Officer.

Assessment offences – penalties

Any student who is found to have used unfair means in an assessment procedure will be penalised. 'Unfair means' here include cheating, fabrication, falsification, plagiarism, unfair collaboration or collusion. Penalties for use of unfair means may include failure of the assessment unit or part of a degree, with no provision for reassessment or retrieval of that failure. Proven cases of plagiarism or cheating can also lead to an Inquiry Hearing or

disciplinary proceedings. Claims of inadvertence or ignorance will not be accepted as a basis for mitigation of a penalty.

If you are accused of an offence, the Students' Union's welfare services are available to support you. You have the right to appeal against the outcome of the investigation.

Important information on academic integrity, the Plagiarism Detection Service, assessment offences and penalties, and support, as well as the Academic Integrity Test itself, is available online. Please refer to **Important Links and Information** in this Handbook.

IF CIRCUMSTANCES IMPACT ON YOUR ASSESSMENT ATTEMPT

Individual Mitigating Circumstances (IMCs) are the conditions which temporarily prevent you from undertaking assessment or significantly impair your performance in assessment. As such, the measure of their severity is not about impact on you, but the impact on your affected assessment. Full information about IMCs is available online. Please refer to **Important Links and Information** in this Handbook. **It is strongly advised that you become familiar with the available guidance and related regulations.**

ASSESSMENT PROCESSES

Assessment and marking processes at the University are designed to ensure that assessment of your work is fair and consistent, and that academic standards are appropriate and comparable between the University and other higher education institutions. This is achieved in a number of ways.

Marking: Assessments you will complete during your programme are marked according to:

- *marking criteria (or assessment criteria)* - these are the knowledge, understanding and skills which it has been identified that students should demonstrate in the assessment and which are taken into account during marking. They are based on the learning outcomes being assessed
- *marking schemes* - these are detailed descriptions of how specific numbers of marks should be assigned against individual components of an answer within the assessment task
- *grade descriptors* - these are descriptions of the levels of achievement required in order to get a result within a given band of marks (e.g. 70% or more).

Anonymous marking: The University has adopted a principle of anonymous marking in order to protect students and staff from bias, and the perception of bias, in the marking process. It applies to all assessment where practicable. It is not possible to mark all coursework anonymously as in some types of assessment the student can be easily identified by the marker (e.g. presentations, group work, laboratory work) or it might not be practical, or in the student interest, to do so. You will be informed when your coursework is to be marked anonymously.

Moderation: Both the setting and the marking of assessments are independently checked through a process known as moderation to ensure that questions test the learning

outcomes and are set at the right standard, and that marking is consistent and fair. Moderation is conducted by internal examiners and also by your External Examiner (see below).

Boards of Examiners: Assessment decision-making at the University is the responsibility of Boards of Examiners established at three levels: assessment outcomes go first to *Boards of Examiners for Units*, then *Boards of Examiners for Programmes*, then finally to *Boards of Studies*. Boards of Studies confirm decisions relating to student progression from one stage of the programme to the next and the final award. **The assessment marks you are given initially by markers are therefore provisional up until the point when they have been confirmed by the Board of Studies for your programme.** An official release date is set when your confirmed results will be made available to you via SAMIS (the University's student records system). An academic appeal can only be made in relation to a confirmed result (see the section in this Handbook on **Academic Appeals**).

Scaling: All marks for a unit are reviewed at a meeting of a Board of Examiners for Units which will verify that the assessment process has been conducted appropriately and that the marks are an accurate reflection of the standards achieved. A Board of Examiners can decide to recommend a change to the provisional marks, based on evidence that there was a problem with the assessment which means the initial marks do not reflect the standards achieved by students. This adjustment is known as scaling and under these circumstances the marks of all affected students will be changed.

External Examiner: An External Examiner is someone from another University or professional organisation who is qualified and experienced in the field of study. At least one External Examiner is appointed for each programme or group of programmes. The role of External Examiner is an important one in assuring that assessment processes are fair, academic standards are appropriate, and supporting the development of your programme. External Examiners review draft assessment and samples of assessed work, and attend Boards of Examiners. They are members of Boards of Examiners.

Once a year, the External Examiners will provide a written report. University staff, including the Head of Department and Director of Studies, will look at these reports and a response will be made to the External Examiner's comments. External Examiner reports and responses are made available to students. Staff/Student Liaison Committees (SSLCs) also discuss External Examiner reports as part of routine monitoring activity.

The External Examiner(s) for your programme is (are):
Professor Mile Giles, University of Oxford

It is not appropriate for students to make direct contact with External Examiners. If you are dissatisfied with the process or outcome of an assessment, and are considering whether to raise this either informally or formally, the sections of this Handbook on **Academic Appeals** and **Dissatisfaction with a University Service or Facility** (**Complaints)** give some more information about the University's procedures for student complaints and academic appeals. The University's mechanisms for student representation are designed to enable students to engage with the quality management process through which the University considers and responds to External Examiners' comments and suggestions.

Full information is available online. Please refer to **Important Links and Information** in this Handbook.

ASSESSMENT REGULATIONS

The University's New Framework for Assessment: Assessment Regulations: Phases 2 & 3 for postgraduate taught programmes ('NFAAR-PGT') specifies the rules governing students' progression from one stage of their programme to the next as well as for the award of degrees. The rules cover all areas of assessment, including supplementary assessment and the extent to which failure may be condoned.

If at any time you are in doubt about how NFAAR-PGT provisions apply to your work, please consult your Director of Studies.

This section highlights areas of the University's assessment framework for the type of programme you are undertaking. It explains the regulations that govern your assessment and outlines how the University makes decisions concerning your progression through your programme and award. Complete information is available in the NFAAR-PGT document.

The full NFAAR-PGT, and definitions of terms used in it, are available online. Please refer to **Important Links and Information** in this Handbook.

YOUR PROGRAMME AND HOW YOU ARE ASSESSED

Within a programme of study, there are *compulsory units* (i.e. those units in a programme which must be taken by every student registered on the programme), and there may also be *optional units* (i.e. those units students may choose from a range of options).

In the Programme and Unit Catalogues, there are links to the relevant appendices of the NFAAR-PGT which state exactly how the assessment rules operate for each stage of your programme.

The following points will help you to understand how the assessment rules relate to your specific programme, such as pass marks, averaging of marks and dealing with any failures:

Firstly, there are several references below to the persistent generic rules on the extent of any failures of units permitted overall. The rules are that you can only (1) fail and retrieve units, or (2) marginally fail units and have them condoned, **within set limits.** Breaking these rules results in failure of the programme.

- There are several references below to the persistent generic rules on the extent of any failures of units permitted overall. The rules are that you can only (1) fail and retrieve units, or (2) marginally fail units and have them condoned, within set limits. Breaking these rules results in failure of the programme.
- Your programme does not have any Designated Essential Units (DEUs). However, all taught units must be passed or condoned to qualify for the award of MRes, MSc or PG Diploma.
- Your programme is divided into stages and follows the general principle that all stage assessments must be successfully completed before progression to the next stage is

permitted. This means that, if you are required to undertake supplementary assessment, you will have to do so before you can progress further.

- Your programme has a taught phase and a project phase. The Programme Progression Requirement to get from the taught phase of the MSc programmes to the project phase is that all units are passed or condoned and the taught stage average is at least 50%. The Programme Progression Requirement to get from the taught phase of the MRes Statistical Applied Mathematics to the Thesis Formation Report phase is that all units are passed or condoned and the taught stage average is at least 60%.
- If you fail to qualify for the award of the degree of MRes or MSc, you may be considered for the award of a Postgraduate Diploma or Postgraduate Certificate, subject to you having met the requirements for that award.

The normal pass mark for a unit is 40%. In some units, you might need to achieve a threshold mark in one or more component assessments in order to pass the unit overall. Particular rules apply to failure of taught units. They are as follows:

- If you fail any units badly (achieve less than 35%), you will have to undertake supplementary assessment unless you have failed so many units that you fail outright or the attempted retrieval would break the rule on how much failure can be retrieved.
- If you only fail units marginally (achieve 35%-39%), you might be able to progress without supplementary assessment. Whether you do progress will depend on the total credit value of the failed units.

For dissertation units only cases of marginal failure (35%-39%) are given permission for attempted retrieval through supplementary assessment, and any resubmission that is permitted for marginal failure must be made within a specified period.
Your unit results are combined as follows to make overall assessment/award decisions:

- The Taught Stage Average (TSA) will be calculated by taking the credit-weighted average of marks for all units required to contribute to the taught stage of the programme.
- The Dissertation/Project Average (DPA) will be calculated by taking the credit-weighted mark for the dissertation/project stage of the programme.
- The Overall Programme Average (OPA) will be calculated by taking the credit-weighted average of marks for all units required to contribute to the programme.

A Board of Examiners will decide at appropriate points whether you are continuing to meet the requirements for the programme (including not breaking persistent generic rules whereby you can only fail and retrieve, or marginally fail and have condoned, units within set limits), and/or whether you have met all the requirements for your target award or any alternative that might be available. The outcomes will depend on both your performance in individual units and your overall performance. Generally, if you pass each of your units, you will progress and, in due course, be recommended for an award.

If you fail units beyond certain credit values, or you fail some too badly, you might break one of the persistent generic rules whereby you can only fail and retrieve, or marginally fail and have condoned, units within set limits, and this will result in failure of the programme -

without any opportunity for supplementary assessment. (Further information on supplementary assessment is provided below.)

The criteria for making awards with distinction or with merit are described in the relevant NFAAR-PGT rules (paras. 78-80).

Supplementary assessment

'Supplementary assessment' is the term normally used for an opportunity given to a student to retrieve failure before starting the next stage of a programme, or by the end of the programme if it is a single-stage programme or the failed units are not Stage Required Units (SRUs).

Academic year dates, including the supplementary assessment period, can be found online. See **Important Links and Information** in this Handbook.

Each unit's method of supplementary assessment is shown in the online Unit Catalogue.

More information on arrangements for the 2020/21 academic year will be provided via the University webpages and updated as necessary.

At supplementary assessment, students will normally have the opportunity to gain credit for units then successfully passed and to have the mark gained reported to them for feedback purposes, but a maximum mark of 40% will be awarded and used in the Overall Stage Average, the Overall Programme Average, the Taught Stage(s) Average, and any award calculation.

If you pass all your supplementary assessments, you will be able to progress onto the next stage of your programme and/or, as appropriate, be considered for an award. If you do not pass them all, the outcome will depend on your overall performance including consideration of the rules about passing particular types of units and the persistent generic rules (as set out above).

ACADEMIC APPEALS

If you wish to submit a request for an academic appeal you should refer to Regulation 17 (Conduct of Student Academic Reviews and Appeals), which outlines the process and grounds for an appeal against formal Board of Studies decisions.

You are also strongly advised to read the online guidance on Appeals provided by the Academic Registry.

Independent advice about academic appeals is offered by the Students' Union Advice and Support Centre.

Full information is available online. Please refer to **Important Links and Information** in this Handbook.

CORE UNIVERSITY INFORMATION

UNIVERSITY REGULATIONS FOR STUDENTS

All registered students of the University are subject to the University's Regulations for Students. The Regulations contain rules and other important information about being a student at the University of Bath, including regulations governing the payment of fees due to the University, student discipline, fitness to study and those governing attendance, conduct and progress in studies. They also form part of the formal contract between you and the University. **You are strongly advised to read them carefully as they contain a lot of important information.**

For a link to the full Regulations for Students, see **Important Links and Information** in this Handbook.

ACCESSING UNIVERSITY EMAIL

You will need to use your University username and password to access your University email account. Your username also forms your email address (**username@bath.ac.uk**).

The University will often communicate with you about a range of important matters requiring action from you, including registration, assessment, degree ceremonies, and matters such as tuition fees, via your University email account. It is a University regulation that you access your University email account regularly, even if you are out on placement or study abroad.

You therefore have a responsibility to ensure that your University email account can receive incoming mail and that you read your email regularly.

Once you graduate or withdraw from your course, you will receive an email stating exactly when your account will be closed. The email will give at least 30 days' notice.

STUDENTS' UNION MEMBERSHIP

All students registered with the University are automatically given membership of the Students' Union; however you have the right not to be a member. Information on opting out of this membership, and the Code of Practice for the Students' Union, are available online. Please refer to **Important Links and Information** in this Handbook.

DATA PROTECTION

The University's Data Protection Policy and Guidelines on Data Protection may be accessed via the data protection website (see **Important Links and Information** in this Handbook).

REGISTRATION STATUS

Note that only registered students may use the University's facilities, such as email, Moodle and the Library. You will be asked to register online at the start of your programme of study and then to re-register at the start of every academic year thereafter until you have completed your programme. It is a requirement that you register when asked to do so. Tuition fees for each academic year are payable at registration in full or in instalments.

Regulation 1.1 explains the requirement to register. Regulations 2.4 and 2.10 explain the consequences of non-payment of tuition fees.

ACADEMIC ENGAGEMENT MONITORING FOR TIER 4 STUDENTS

Guidance and requirements on academic engagement for students who are Tier 4 visa holders, including the University's **Academic Engagement Monitoring Policy for Tier 4 visa holders**, and information on when and how to request an authorised absence, are available online. Please refer to **Important Links and Information** in this Handbook.

CHANGE IN YOUR CIRCUMSTANCES

It is important to ensure that the University holds your correct, up-to-date, personal and academic details within SAMIS, the University's student records database. If you change your address – either your semester-time or home address – please update your details online (see **Important Links and Information** in this Handbook).

If you change your name, you will need to provide valid proof of the change. Please speak to your Department or Faculty/School administration, or Student Services, for advice on how to do this.

If you are considering suspending your studies, transferring from one programme to another, or withdrawing from your programme, please discuss your situation with your Director of Studies. They will be able to advise you on an appropriate course of action.

The financial implications of withdrawing from the University or suspending your studies can be significant. See **Important Links and Information** in this Handbook.

The Student Money Advice Team in Student Services and the Student Finance Office will be able to advise you on the implications for fees in your situation and on how to suspend any student funding you are receiving.

If you are an international student holding a Tier 4 visa, you should consult the advisers in the Student Immigration Service about the implications of suspending or withdrawing from your programme. See **Important Links and Information** in this Handbook.

You will need to register any change of academic circumstance, including a change of optional units, with the University. Please speak to your Department or Faculty/School administration who will advise you on how to do this.

DISSATISFACTION WITH A UNIVERSITY SERVICE OR FACILITY (COMPLAINTS)

We want to ensure that, if you have a problem concerning the University, it is resolved as quickly as possible. The University is committed to continuing review and improvement, and seeks regular feedback from students. There are student representatives on the University's formal decision-making committees who can raise issues so that they can be dealt with promptly. The University is also committed to providing an environment within which students are encouraged to raise any matters of concern in an informal manner as soon as they arise. This often removes the need for formal complaints.

It is expected that most complaints can be resolved at an early stage by discussing the matter informally at a local level. If you have a problem concerning the University, you should bring the matter to the attention of an appropriate member of staff, who will aim to resolve it by informal discussion. If you have attempted to resolve matters informally but are not satisfied with the outcome, you may elect to proceed to the next stage by submitting a formal complaint. You may also submit a formal complaint if the issue involved is too complex or serious for informal resolution.

If you do need to make a complaint, there are procedures in place to deal with it, outlined in the University's **Student Complaints Procedure**. These procedures are designed to ensure that your complaint will be dealt with in good faith and that you will not be penalised for complaining.

There are separate procedures for requesting a review of progression or award classification decisions. See the section in this Handbook on **Academic Appeals**.

The University recognises that making a complaint can be stressful. Students are therefore advised to seek advice and support before making a complaint, from Student Services, or from the Students' Union Advice and Support Centre, whose advice is independent of the University.

Full information is available online. Please refer to **Important Links and Information** in this Handbook.