UNIVERSITY OF OXFORD

Mathematical Institute

MSc in Mathematical & Computational Finance

Handbook 2023-24

This handbook applies to students starting the MSc in Mathematics and Computational Finance in Michaelmas term 2023. The information in this handbook may be different for students starting in other years.

The Examination Regulations relating to this course are available at:
https://examregs.admin.ox.ac.uk/Regulation?code=mosbcimandcompfina&srchYear=2021&srchTerm=1&year=2021&term=1

If there is a conflict between the information in this handbook and the Examination Regulations then you should follow the Examinations Regulations. If you have any concerns please contact mathcompfin@maths.ox.ac.uk.

The information in this handbook is accurate as at 31 August 2023, however it may be necessary for changes to be made in certain circumstances, as explained at www.ox.ac.uk/coursechanges. If such changes are made the department will publish a new version of this handbook together with a list of the changes and students will be informed.

This Handbook, along with much other information about the MSc, can be found on the Course Website at: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf

Welcome message from the Course Director

I would like to welcome you to the Mathematical Institute as a student on the M.Sc. in Mathematical and Computational Finance (MCF). Congratulations on securing a place on the course, which is very competitive.

The course will comprise an intense year of taught courses covering mathematical, computational and data-oriented finance, assessed by written and practical examinations, and culminating in a dissertation. In addition, we hope to stage a few practitioner events where prospective employers will be able to introduce you to opportunities in the finance industry following your degree.

The M.Sc. is run in the Mathematical and Computational Finance Group (MCFG), one of the strongest Mathematical Finance research groups in the world, and you will have the opportunity to be taught by and work with internationally renowned mathematicians. You will be part of a cohort of highly motivated and enthusiastic students, and I hope that you will enjoy the course and make the most of the opportunities it offers. Good luck!

Prof. Justin Sirignano

Table of Contents

1. Introduction

This handbook contains important information about the MSc in Mathematics and Computational Finance. It is intended as a guide and reference for you throughout the course. There are a number of other sources of information that you will need to refer to during your course and links to these are given below, together with a list of key contact.

1.1 Key Sources of Information

Course website: Mathematical Institute website: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf. This handbook can be found on the course website along with other useful information such as, course timetables and the annual course calendar.

Examination Regulations: https://examregs.admin.ox.ac.uk/
The University's examination regulations govern all academic matters within the University and contain the general regulations for the conduct of University examinations, as well as specific regulations for each degree programme offered by the University.

Examination Conventions: Examination Conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how your examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of your award. They include information on: marking scales, marking classification and criteria, scaling of marks, resits, penalties for late submission and penalties for over-length of work. The examination conventions can be found in Section 5.3 of this handbook and may be revised prior to examination. Students will be informed of any revisions to the Conventions via email.

Oxford Student website: http://www.ox.ac.uk/students. This website provides access to information, services and resources.

Oxford Student Handbook: https://www.ox.ac.uk/students/academic/student-handbook
This contains general information and guidance about studying at the University of Oxford, and gives you formal notification and explanation of the University's codes, regulations, policies and procedures.

College Handbook: The handbook for your college will be available on the college website.

1.2 Key Contacts

Course Director: Prof. Justin Sirignano, Email: justin.sirignano@maths.ox.ac.uk
Chair of the Supervisory Committee: Prof. Jan Obloj, Email: jan.obloj@maths.ox.ac.uk
Head of Academic Administration: Charlotte Turner-Smith, Email: charlotte.turner-smith@maths.ox.ac.uk
Deputy Head of Academic Administration: Dave Borthwick, Email: Dave.Borthwick@maths.ox.ac.uk

Course Administrator: Helena Gardner: Email: mathcompfin@maths.ox.ac.uk
Student Representative: You will be informed of the student representative during induction week.
Mathematical Institute Reception: (tel: (2)73525)

1.3 The Academic Year

The course lasts almost 10 months, from the beginning of October to the middle of the following July. Some work is carried out in the vacations.

For the academic year 2023-2024, the course begins with an induction week starting on Monday 25 September 2023. The dates of the University Full Terms for the Academic Year 2022/2023 are:

MT = Michaelmas Term 2023: 8 October - 2 December
HT = Hilary Term 2024: 14 January - 9 March
TT = Trinity Term 2024: 21 April - 15 June

A calendar of important dates can be found at:
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/course-calendar

1.4 Finding Your Way Round

A searchable, interactive map of all college, department and libraries can be found at https://www.ox.ac.uk/visitors/map

1.5 The Mathematical Institute

Teaching for the course will take place in the Mathematical Institute (https://www.maths.ox.ac.uk/about-us/travel-maps). An entry card system controls access to the building. Your University card, which you collect from your college at the beginning of term will gain you access to the building, and will operate internal doors where they have security control. Instructions on how to activate your card will be made available to you at the Graduate Induction. If your card fails to allow you access, please contact door-entry@maths.ox.ac.uk giving your name, card number and expiry date.

Rules governing access to the Mathematical Institute are as follows:

1. Cards are issued on a personal basis and must not be loaned or passed on to another person.
2. No-one should allow access to another person.
3. When a card is used to gain access to the building, the system keeps a record of that use for a period of approximately six months.

The Mathematical Institute houses lecture theatres and class rooms in which most of the university lectures in Mathematics take place. There are also a number of offices, most of which are occupied by academic staff, support staff and research students.

Opening Hours

The Andrew Wiles Building is open from 8am to 6pm Monday to Friday, except closed periods such as Bank Holidays out of term time. Reception is manned from 8am to 5.30pm. Outside these hours, access to the building is by University card and a personal pin code. Instructions on how to set your personal pin code will be made available to you at the Graduate Induction or can be found via the following link: https://www.maths.ox.ac.uk/members/building-information.

Social area

The department has a Common Room which is located on the first floor. There are tea/coffee making facilities on all floors. A cafeteria serving food and drinks can be found in the mezzanine.

2. The MSc Course

2.1 Aims of the Programme

The programme aims:

1. to provide you with a strong mathematical background with the necessary to apply your expertise to the solution of real finance problems.
2. to provide you with a systematic understanding of core areas in mathematical models, techniques, numerical methods and data analysis in finance as well as source advanced topics in one or more of these areas.
3. to develop your skills so that you are able to formulate a well posed problem from a description in financial language, carry out relevant mathematical and/or statistical analysis, develop an appropriate numerical scheme and/or statistical algorithm, present and interpret these results.
4. to lay the foundation for further research or for a career as a quantitative analyst into a financial or other institution.

More information about the programme, its outcomes, governance and regulation, is detailed in the Programme Specification, which can be found on the Course Website.

2.2 Programme Outcomes

A.

Students will gain a knowledge of:	*Related teaching/learning methods and assessment*
1. Core Courses.	Lectures and classes in terms 1 & 2, written examinations in January and April. Two take home projects
2. Courses.	Lectures and Classes in term 2. Students to choose 4 elective courses out of 6. Assessed by written examination in April.
3. Practical Computational Finance	An intensive 8-hour non-examinable lecture course on Python will also be run in Introductory week. Two C++ lecture courses are supported by practicals which are built around computational finance, and these courses are assessed by practical online examinations taking place in January and March.
4. Dissertation on a specific problem	Students write a report of between 25 and 40 pages in some depth on a specific problem.

B. Students have the opportunity to develop the following skills during the course

I. Intellectual skills
The ability to demonstrate knowledge of key mathematical and financial concepts and topics, both explicitly and by applying them to the solution of problems.
The ability to comprehend problems, abstract the essentials of problems and formulate them mathematically and in symbolic form so as to facilitate their analysis and solution.
The ability to grasp how mathematical processes may be applied to problems, including where appropriate, an understanding that this might give only a partial solution.
The ability to select and apply appropriate mathematical processes.
The ability to construct and develop logical mathematical arguments with clear identification of assumptions and conclusions.
The ability to use computational and more general IT facilities as an aid to mathematical processes and for acquiring any further information that is needed and available.
The ability to present mathematical arguments and conclusions from them with clarity and accuracy, in forms suitable for the audiences being addressed
The ability to formulate a financial problem in mathematical terms, solve the resulting equations analytically or numerically, and give interpretations of the solutions.

Teaching/learning methods and strategies
These are acquired through lectures, classes, practical classes, studying recommended textbooks and through work done for mini-projects and dissertations.

II. Mathematical related practical skills	
1. Calculating fluently and accurately in abstract notation.	1. Practiced throughout the course in problem work for classes.
2. Use of mathematics computer packages especially C++ and Python.	2. Practiced throughout course especially in practical numerical analysis classes.

III. General skills	**Teaching/Learning methods and strategies**
1. To analyse and solve problems, and to reason logically and creatively.	1. Mathematical problem sheets with class support often requiring significant development of ideas beyond material found in lectures and books.
2. Effective communication and presentation orally.	2. Presentation of solutions in classes.
3. The ability to learn independently.	3. The dissertation and mini-projects require students to put together material from a number of sources including lectures, textbooks, and electronic sources, in their own time.
4. Independent time management.	Requirement to produce substantial amounts of written work against class deadlines; necessity to balance academic and non-academic activities without continuous oversight.
5. To think critically about solutions and to defend an intellectual position.	5. Discussion and criticism in classes and with supervisor.
6. Collaboration.	6. Modelling classes involve group work so that students share ideas and develop the practice of crediting others for their contributions.
7. Use of information and technology.	7. Compulsory practical work; extensive use of computing techniques and data analysis.

2.3 Course Structure

Below is a short outline of the course structure. For the list of courses go to Section 3.

2.3.1 Introductory Courses

You take four introductory courses in the induction (introductory) week (Week -1 of Michaelmas Term). These are the foundation courses necessary for the rest of the course.

2.3.2 Core Courses Michaelmas Term

The first term focuses on core material that is compulsory for all students; the term offers 64 hours or lectures and 24 hours of classes/practicals.

2.3.3 Core and Elective Courses Hilary Term

The second term focuses on core material that is compulsory for all students as well as elective courses. The term offers 40 hours of lectures and 32 hours of classes/practicals for the core courses. Students are to choose 4 out of 6 elective courses. Each elective course comprises 8 hours of lectures and 2 classes.

2.3.4 Financial Computing Courses

The first component of the Financial Computing course, Financial Computing with C++1 (16 lectures and 8 two-hour classes) is held in Michaelmas Term.
The second component of the Financial Computing course, Financial Computing with C++2 (24 hours of lectures and practicals in total) is held in Hilary Term.

2.3.5 Dissertation

The third term is dedicated to a dissertation project which is to be written on a topic chosen in consultation with a supervisor. There will be the option of an internship alongside your dissertation. We will circulate further information in due course.

3. Courses offered in 2023/2024

Detailed synopses for the courses can be found on the course web pages.

3.1 Introductory Courses

Partial Differential Equations	Intro week	5 hrs lectures, 1 hr classes
Probability	Intro week	5 hrs lectures, 1 hr classes
Statistics	Intro week	6 hrs lectures, 1 hr classes
Python	Intro week	8 hrs lectures
Financial Markets and Instruments	Intro week	7 hr lectures
Markdown reports	Intro week	2 hrs lectures

These courses are all held in the Introductory week and are not assessed. The classes take place in Week 1 of Michaelmas Term.

3.2 Core Lecture Courses

Stochastic Calculus	MT	16 hrs lectures + 4 classes, 1.5 hrs each
Statistics and Financial Data Analysis	MT	16 hrs lectures + 4 classes, 1.5 hrs each
Financial Derivatives	MT	16 hrs lectures + 4 classes, 1.5 hrs each
Numerical Methods	MT	16 hrs lectures + 4 classes, 1.5 hrs each
Fixed Income and Credit	HT	16 hrs lectures + 4 classes, 1.5 hrs each
Stochastic Control	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Quantitative Risk Management	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Deep Learning	HT	16 hrs lectures + 4 classes, 1.5 hrs each

These lecture courses are all supported by classes. The core courses are compulsory. For further information, see Section 5.3

3.3 Elective Courses

Students are to register for 4 elective courses, out of 6.

Advanced Monte Carlo Methods	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Advanced Numerical Methods	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Advanced Volatility Modelling	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Asset Pricing	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Market Microstructure & Algorithmic Trading	HT	8 hrs lectures + 2 classes, 1.5 hrs each
Decentralised Finance	HT	8 hrs lectures + 2 classes, 1.5 hrs each

3.4 Programming Courses

Financial computing with C++ Part I	MT	16 hrs lectures + 4 classes, 2 hrs each
Financial computing with C++ Part II	HT	24 hrs lectures and classes

The two Financial Computing with C++ courses are compulsory and each assessed by a three-hour practical examination. For further information see Section 5.3.

Examination and assessment dates can be found on the course calendar at
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/course-calendar

3.5 Practitioner Lectures and Career events

In addition, practitioner lectures and careers events will be arranged throughout the year. Typically, lecturers are senior practitioners in investment banks or hedge funds, and their presentations cover current market trends or 'live' quantitative modelling challenges. These lectures and events are not assessed, but enable you to gain insight into the industrial applications of the course material.

4. Teaching and Learning

4.1 Organisation of Teaching

Teaching for the course will be provided by the Mathematical Institute through lectures and classes. In addition, you will have regular supervision meetings with your supervisor.

4.2 Supervisors

General Supervisors are appointed at the start of the MSc and will be available for consultation for the first two terms of the MSc. Your supervisor can act as a point of contact for advice on any academic matter and can also provide feedback on an initial draft of your first project (provided that you submit it to them in good time - at least a week before the deadline). On a day-to-day basis you will receive academic guidance from Class Tutors and the Course Director.

During Hilary Term you will be sent a list of possible Dissertation projects suggested by potential Supervisors. This list may include a few 'external' projects - which will be based in external financial institutions. You are also encouraged to suggest your own ideas for a project, and are encouraged to discuss this with your General Supervisor or the Course Director. For any project you suggest, it will be necessary to find a faculty member able to supervise it. Please be aware that individual supervisors have limited capacity, so you may have to be flexible. You will indicate your preference for dissertation projects and the Course Director will assign students to project supervisors. Project and supervisor allocation will be finalised by the end of Hilary Term.

Once projects and supervisors are determined it is important that you work to make good progress on your Dissertation in order to submit it by the deadline at the end of Trinity Term. You can expect to have up to 1-hour contact time per week with your supervisor to discuss your Dissertation. We strongly recommend discussing the draft of your dissertation with your supervisor, a reasonable time in advance of submission.

Students doing their dissertations as part of an industrial internship will have a dissertation supervisor in the internship company. An internal supervisor will oversee progress, receiving any progress reports from the dissertation supervisor.

4.3 Lectures

The lecture timetable will be available on the course website
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/information-current-students

4.4 Course Materials

Course material, such as lecture notes and problem sheets, will be published on the Mathematical Institute's Moodle pages, https://courses.maths.ox.ac.uk/.

4.5 Classes

Lecture courses will normally be accompanied by problem sets and fortnightly problem classes. For core courses, 2 sets of classes are run, so the cohort is split into 2 smaller groups. For elective courses, 1 or 2 sets of classes may be run depending on group size.

Before each class you will need to submit your problem sheet to the class teaching assistant for marking. A subset of key questions (approximately two) on each sheet will be marked. The class will cover all questions.

You should always submit your problem sheet before the stated deadline.

4.6 Advice on Teaching and Learning Matters

There are a number of people you can consult for advice on teaching and learning matters. Supervisors will be appointed for MSc students at the start of the course and will be available for consultation on any academic matter. All students will receive academic guidance from the Course Director.

If you have any issues with teaching or supervision please raise these as soon as possible so that they can be addressed promptly. Details of who to contact are provided in Section 11.

4.7 Skills and Learning Development Expectations of Study

You are responsible for your own academic progress. Therefore, in addition to the formal teaching you receive through lectures, classes and dissertation tutorials, you will be expected to undertake a significant amount of self-directed, independent study both during term time and in the vacations. You are advised to read the University's guidance on undertaking paid work at https://www.ox.ac.uk/students/life/experience.

4.7.1 Termly Reporting

Students are required to submit a reflective report on their progress each term. This should follow on from a supervision meeting where you have discussed your progress and next steps with your supervisor. Your supervisor is also expected to submit a termly report on your academic progress. Your reflective report should be submitted through the online Graduate Supervision Reporting (GSR) https://academic.admin.ox.ac.uk/graduate-supervision-reporting-gsr.
This captures information reported by both student and supervisor(s), with details relevant to each student being available to his or her supervisory team and the Director of Graduate Studies. Your college advisor

and University and college graduate studies administrators with designated access will also be able to view the report. It is recognised that students in different situations will have differing needs and concerns.

If you are concerned about your academic progress please contact your college tutor, supervisor or the Director of Graduate Studies. For MSc students, it is also mandatory to complete a self-assessment report via GSR for every reporting period.
You can access GSR via the following link: https://www.ox.ac.uk/students/selfservice. Students will be sent a GSR automated email notification with details of how to log in at the start of each reporting window, and who to contact with queries.
Completing the self-assessment will provide the opportunity to:

- Review and comment on your academic progress during the current reporting period
- Measure your progress against the timetable and requirements of your programme of study
- Identify skills developed and training undertaken or required
- List your engagement with the academic community
- Raise concerns or issues regarding your academic progress to your Academic Advisor
- Outline your plans for the next term (where applicable).

If you have any difficulty completing this you must speak to your supervisor or Director of Graduate Studies. Your self-assessment report will be used by your supervisor as a basis to complete a report on your performance this reporting period, for identifying areas where further work may be required, and for reviewing your progress against agreed timetables and plans for the term ahead. GSR will alert you by email when your supervisor has completed your report and it is available for you to view.

4.8 University Lectures and Departmental Seminars

University lectures in all subjects are open to all students. A consolidated lecture list is available on the University website at: https://www.ox.ac.uk/students/academic/guidance/lectures.

Seminars and colloquia given in the Mathematical Institute, often by mathematicians of international repute, are announced on the departmental notice boards you are encouraged to attend any which interest you - https://www.maths.ox.ac.uk/events/list.

4.9 Study Skills

Much of the advice and training in study skills will come in the regular class teaching you receive. A wide range of information and training materials are available to help you develop your academic skills - including time management, research and library skills, referencing, revision skill and academic writing - through the Oxford Student website: https://www.ox.ac.uk/students/academic/guidance/skills

4.10 Key Teaching Links

Lecture and Class Timetable:
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/information-current-students

Course materials (Moodle): https://courses.maths.ox.ac.uk/course/

5. Examinations and Assessments

5.1 Guidance on Examination Regulations

The course is overseen by a Supervisory Committee, which consists of Prof Christoph Reisinger (Director of Graduate Studies), Prof Jan Obloj (Chair), Prof Justin Sirignano (MCF Course Director), Prof Michael Monoyios (Chair of admissions), Prof Rama Cont (Faculty member), Dr Katia Babbar (External member of industry) and a student representative (assigned at the beginning of the academic year).

5.2 Extract from University Examination Regulations

The Examination Regulations govern the course and are taken from the overall University Examination Regulations, which govern all academic matters within the University.
Information on University regulations can be found here: https://examregs.admin.ox.ac.uk/

5.3 Examination Conventions

Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of an award. This section sets out the examination conventions for the M.Sc. in Mathematical and Computational Finance for the academic year 2023-24. These examination conventions are approved annually by the Supervisory Committee for the MSc. in Mathematical and Computational Finance and by the Graduate Studies Committee in the Mathematical Institute. The Board of Examiners may only make minor deviations from these conventions in exceptional circumstances and only after the consent of the Proctors. This document is in all ways subsidiary to the current

- Examination Regulations;
- Policy and Guidance for Examiners and others involved in the University Examinations

5.3.1 Examiners

A Board of Examiners is appointed, consisting of four members of the Mathematics Faculty (one of whom serves as Chair of Examiners), and one External Examiner. For 2023-24 the Board of Examiners is as follows: Prof Michael Monoyios (Chairman), Prof Sam Cohen, Prof Christoph Reisinger, Prof Ben Hambly, Dr Leandro Sánchez-Betancourt and Prof Luitgard Veraart (External Examiner - LSE). Assessors are

appointed to assist the Examiners with marking. These Assessors are usually members of the Mathematics Faculty.
Candidates should not, under any circumstances, seek to contact individual internal or external examiners. If you are unhappy with an aspect of your assessment you may make a complaint or appeal (see section 11).

5.3.2 Assessment Criteria

The assessment of coursework and examinations in the programme, using the mark scheme indicated below, is based upon recognition of the following qualities:

Knowledge and Understanding

- Range and depth in knowledge of mathematical techniques of analysis of use in finance covered in the course
- Appropriate selection of techniques for the analysis of finance problems and a knowledge of the limitations and strengths of models and techniques deployed

Argument and Reasoning

- Command of analytical skills appropriate for the study of finance
- Logical exposition and reasoning
- Clarity, completeness and concise expression in mathematical analysis

Presentation and Deployment

- Clear demonstration of the benefit of mathematical analysis of finance in argument
- Clarity in written (non-mathematical) exposition
- Appropriate deployment of literature

5.3.3 Examination Assessment Units

The examination for the MSc in Mathematical and Computational Finance is comprised of three main assessment units. The numbers of exam questions set for each course are as follows:

- 16-hour courses: 3 questions set, 2 to be attempted.
- 8-hour core courses: 2 questions set, 1 to be attempted.
- 8-hour elective courses: 1 question set for each course with a choice between courses in the examination

Assessment Unit One comprises of examination Papers A, B, C, and D.

- Paper A (Stochastic Calculus and Financial Derivatives): 3-hour paper-based examination which is sat in Week 0 of Hilary Term. Will be sat as a closed-book in person examination.

- Paper B (Numerical Methods): 1.5-hour paper-based examination which is sat in Week 0 of Hilary Term. Will be sat as a closed-book in person examination.

- Paper C (Fixed Income and Credit, Stochastic Control, and Quantitative Risk Management): 3-hour paper-based examination which is sat in Week -1 of Trinity Term. Will be sat as a closed-book, in person examination.

- Paper D (Elective Papers): 2-hour paper-based examination which is sat in Week -1 of Trinity Term. Will be sat as a closed-book, in person examination.

Assessment Unit Two comprises of two computing assessments and two take-home projects.
Candidates are expected to complete all the following assessments

- Financial Computing with C++ Part I: will be assessed by a 3-hour computer-based practical exam, sat on Friday of Week 0 of Hilary Term. Online examination.

- Financial Computing with C++ Part II: will be assessed by a 3-hour computer-based practical exam, sat on Friday of Week 8 of Hilary Term. Online examination.

- Statistics and Financial Data Analysis will be assessed as a take-home project in Week 9 of Michaelmas Term

- Deep Learning will be assessed as a take-home project in Week 10 of Hilary Term

Assessment Unit Three comprises the dissertation.

- Dissertation: The dissertation will be written during Trinity Term on a topic chosen in consultation with a departmental supervisor or an industry partner. It should be no more than 40 pages long and should contain material which, although not necessarily original research, cannot be found elsewhere. Credit will be given for the mathematical and financial content, as well as the clarity of the writing. Please note that examiners and assessors will be under no obligation to assess any work that exceeds the 40-page limit of the dissertation. More details will be provided in the dissertation guidance.

5.3.4 Marking Conventions

In Oxford, the word 'examination' often refers to the ensemble of assessments (written examinations, dissertations etc.) which, taken together, determine the final result in the MSc. The examination for the MSc in Mathematical and Computational Finance comprises of the following assessment units:

- written paper-based examinations,
- financial computing practical examinations,
- take-home projects,
- dissertation.

Performance on assessed parts of the course is reported as a University Standardised Mark (USM), a number between 0 and 100. For MSc courses, a USM of less than 50 is a failing mark, while one of 70 or more is a Distinction mark. Raw marks may be turned into USMs by scaling, sometimes necessary to ensure all papers are fairly and equally rewarded. In all cases, the examiners will use their academic judgement to check that appropriate USMs are awarded.

Students can access Examiners reports (including external examiners reports) on the course website at https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/examination-and-assessment-new

5.3.5 Criteria for USMs: written examinations

The USM for each written examination is determined by a scaling applied to the raw marks.

70-100: Marks in this range indicate excellent skills in reasoning, and problem-solving, together with an excellent knowledge of the material, and the ability to use it in unfamiliar contexts. There will be minor errors and omissions only. USMs at the top end of the range indicate that all answers were essentially perfect.

60-69: Marks in this range indicate good or very good skills in reasoning and problem-solving, with a good or very good knowledge of much of the material. Not all parts of every question will have been answered fully or correctly.

50-59: Marks in this range indicate adequate basic skills in reasoning and problem-solving, with a sound knowledge of a reasonable part of the material. Substantial parts of some questions may have been unanswered or answered incorrectly.

45-49: Marks in this range indicate understanding of only part of the basic material and only restricted problem-solving skills. Although there may be a few good answers, the great majority of answers will contain errors in calculations and/or show incomplete understanding of the topics.

40-44: Marks in this range indicate only very limited grasp of basic material over a very restricted range of topics, but with large gaps in understanding and insufficient coverage of the material as a whole.

0-39: Marks in this range indicate inadequate grasp of the basic material. The work is likely to show major misunderstanding and confusion, and/or inaccurate calculations; the answers to most of the questions attempted are likely to be fragmentary only.

5.3.6 Criteria for USMs: dissertations and take-home projects

90-100: Marks in this band indicate remarkable ability and extraordinary insights; the presentation and clarity of exposition of the work are exceptional. Dissertations in this band will be worthy of publication and will contain novel results, the project goes far beyond the material of the lecture course.

80-89: marks in this band are excellent, showing thorough knowledge and understanding of the topic and including the candidate's own original insights and interpretations. Presentation is very good. The project goes beyond the material of the lecture course.

70-79: Dissertations and projects in this band are very good, well thought-out pieces of work with no major deficiencies, and with no significant deficiencies in presentation or clarity of exposition. They will show a thorough understanding of the topic.

60-69: Dissertations and projects in this band may be good pieces of work with few deficiencies in content or presentation, but not significantly extending the material covered in the course; or they may have novel elements but also suffer from deficiencies in content, understanding, structure or presentation that prevent them from being of distinction level.

50-59: Dissertations and projects in this band are of acceptable quality but have weaknesses in content, understanding, structure or presentation.

40-49: Dissertations and projects in this band are not of acceptable quality and have significant weaknesses in content, understanding, structure or presentation. A major revision might raise the work to above a pass level.

0-39: This band indicates unacceptably poor work, showing extremely limited understanding of the topic covered and/or unacceptably poor presentation.

5.3.7 Overall Assessment

In order to make an overall assessment the individual assessments are grouped into three assessment units (as above). The **overall USM** is calculated as the weighted average of the three USMs obtained for the three individual assessment units based on the following weights:

- Assessment unit one (Examinations): 45%
- Assessment unit two (C++ and Take-Homes): 25%
- Assessment unit three (Dissertation): 30%
- The final result is one of Distinction, Merit, Pass or Fail. The criteria for each result are described below.

5.3.8 Criteria for a Distinction

Distinctions are awarded when a candidate shows excellent problem-solving skills and excellent knowledge of the material over a wide range of topics; is able to use that knowledge innovatively and/or in unfamiliar contexts; and is able to produce a substantial piece of work for the dissertation. A candidate will be eligible for a Distinction if they fulfil both of the following criteria:

- an overall USM of 70 or above;
- a USM of at least 68 on assessment unit one and three, and USMs no less than 50 on assessment unit two.

Please note that candidates taking the examinations for a second time may not be considered for a Distinction.

5.3.9 Criteria for a Merit

The Merit is awarded for very good quality work throughout the course. Very good problem-solving skills and knowledge over a wide range of topics, or excellent command of some material and good or very good command of the rest.

Candidates will receive a Merit if either of the following conditions are met:

- the overall USM is between 65-69, with USMs no less than 50 on each assessment unit;
- the overall USM is 70 or above, but the USM on either assessment unit one or three is below 68, with a USM no less than 50 on any assessment unit.

5.3.10 Criteria for a Pass

The pass covers a wide range of results from candidates who show adequate knowledge of most of the material, to candidates who show good knowledge of much of the material over a wide range of topics.

Candidates will receive a Pass if they do not meet the criteria for a Distinction, Merit or Fail; that is, if all of the following criteria are met:

- the overall USM is between 50-64 and the second and third criteria below for a fail are not met;
- the overall USM is 65 or above but the USM on one assessment unit is less than 50.

5.3.11 Criteria for a Fail

Candidates fail when they show inadequate grasp of the basic material. The work is likely to be inadequate in scope or coverage and/or to show major misunderstanding and confusion, and/or inaccurate calculations.

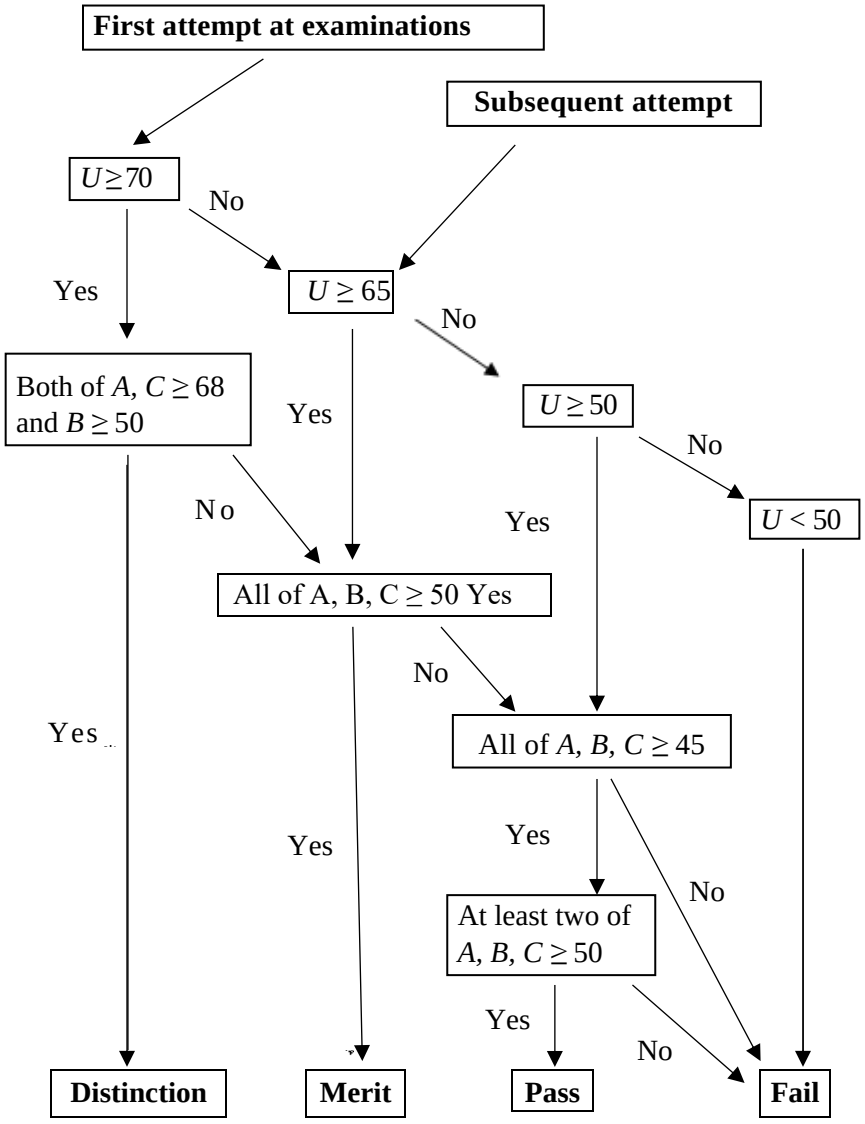
A candidate's work will be classified as a Fail if it meets one or more of the following criteria:

- the overall USM is less than 50;
- USMs on two or more individual assessment units are less than 50;
- USMs on one or more individual assessment units are less than 45.

Candidates who fail may retake the examinations on one further occasion, normally within one year. In such cases, the examiners specify which parts of the examination need to be retaken. Candidates retaking the examinations may not be considered for a distinction.

5.3.12 Criteria for Classification: Flowchart

Let *U* be the overall USM, *A, B, C* the USMs on assessment units one, two and three respectively. Classification of the overall degree can be determined by following the flow chart below.



5.3.13 Verification and Reconciliation of Marks

For papers without a model solution, each script/item of work will be marked independently by two examiners or assessors (sometimes referred to as 'double-blind marking'). Each assessor will propose a mark; if the two marks do not differ by more than 10, the final mark will usually be the average of the two marks (rounded up to the nearest whole mark if necessary). However, if the marks are on opposite sides of the pass/fail borderline or differ by more than 10 marks reconciliation will take place where the assessors will try to reach a decision on a final mark. If reconciliation is difficult, a third marker will act as an arbiter in agreeing the appropriate mark.

For papers for which there is a model solution and marking scheme approved by the examiners, each script is marked by an examiner or assessor, and then checked independently to ensure that all parts have been marked and the marks and part-marks have been correctly totalled and recorded.

5.3.14 Scaling

If scaling is used, scaling will not be used as a mechanistic process, but as one in which the examiners will use their academic judgement to ensure that appropriate classifications are awarded.

5.3.15 Usage of Formative Feedback

Assessors who mark the dissertation and projects are encouraged to give comments providing constructive feedback on the work they marked. After being approved by the Chair of Examiners on behalf of the Examination Board, this feedback is passed on to the candidates after the results have been released.

5.3.16 Examination Conduct

Students will receive advice from the examiners before their first examination in the form of a Notice to Candidates. This notice provides information on the conduct of the examinations including practical arrangements and procedures in the case of illegible or incomplete scripts and illness.

5.3.17 Penalties for Non-Attendance

Rules governing non-attendance at examinations and any consequent penalties are set out in full in the Examination Regulations (Regulations for the Conduct of University Examinations, Part 14). If a student will be prevented by illness or other urgent cause from attending one of their examinations they should contact their college office or college advisor as soon as possible. Any case of non-attendance at an examination involving illness or other medical condition will require written medical evidence and will usually be referred by the college to the Proctors.

If the Proctors do not believe there are satisfactory reasons for non-attendance, or an application to the Proctors has not been submitted, a candidate will be awarded a mark of zero for that examination. The mark for any resit of the examination will be capped at pass. Such a resit is only available once to candidates who initially fail the whole M.Sc. course.

5.3.18 Penalties for Late Submission of Open Book Examination Solutions

For any open book examinations, Candidates should upload their submission within the time allowed for their open-book examination. Candidates who access the paper later than the published start time (and who do not have an agreed alternative start time) will still need to finish and submit their work within the originally published timeframe or be considered to have submitted late. Candidates who access the paper on time but who submit their work after the published timeframe will also be considered to have submitted late.

Where candidates submit their examination after the end of the specified timeframe and believe they have a good reason for doing so, they may submit a self-assessment mitigating circumstances form to explain their reasons for the late submission. The Exam Board will consider whether to waive the penalties (outlined below) for late submission.

Penalties will only be applied after the work has been marked and the Exam Board has checked whether there are any valid reasons for late submission.

Table 5: Late Open-Book Submission Tariff

Lateness	Cumulative Penalty
Any time after the deadline	Fail Mark

5.3.19 Penalties for Late or Non-Submission of Coursework

The Examination Regulations stipulate specific dates for submission of dissertations and mini-projects. Rules governing late submission and any consequent penalties are set out in full in the Part 14 Late Submission, Non-submission, Non-appearance and Withdrawal from Examinations subsection of the Regulations for the Conduct of University Examinations section of the Examination Regulations 2023/24.

If you will be prevented by illness or other urgent cause from submitting your coursework on time you should contact your college office or college tutor as soon as possible. Your college is able to submit an application for an extension of time to the Proctors on your behalf.

The scale of penalties agreed by the board of examiners in relation to late submissions of assessed coursework is set out below.

Table 6: Late Submission Tariff

Lateness	Cumulative Penalty
Up to 4 hours, i.e. up to Monday 4pm	1 %
4–24 hours, i.e. up to Tuesday 12 noon	10%
24–48 hours, i.e. up to Weds 12 noon	20%
48–72 hours, i.e. up to Thurs 12 noon	30%
72–96 hours, i.e. up to Fri 12 noon	35%
96 hours - 14 days	35%
More than 14 days late	Fail

Note: The penalty will be a percentage reduction of the maximum total mark available for the work. For example, if a 10% penalty is applied to an assessment given a USM out of 100 then 10 marks would be deducted. The final mark awarded after application of the penalty cannot be below 0.

Failure to submit a required element of assessment will result in the failure of the whole of the assessment. The mark for any resit of the assessment will be capped at a pass.

Such a resit is only available once to candidates who initially fail the whole M.Sc. course.

5.3.20 Alternative Examination Arrangements and Mitigating Circumstances Notices to Examiners

A candidate in any University Examination with specific learning difficulties or disability/illness may apply through the Senior Tutor of their college for alternative examination arrangements relating to their condition. For further information on the process please see
https://www.ox.ac.uk/students/academic/exams/arrangements

Candidates who would like the examiners to be aware of any factors that may have affected their performance before or during an examination are advised to discuss their circumstances with their college and consult the Examination Regulations (Part 13). Candidates should complete the form entitled mitigating circumstances notices to examiners and send this to their college with appropriate supporting material. The candidate's college will submit the application for forwarding to the relevant Chair of Examiners. A candidate's final outcome will first be considered using the classification rules as described above in Section 5.3.8. The exam board will then consider any further information they have on individual circumstances. The board of examiners will use the following procedure for the consideration of medical and other special circumstances transmitted to them via the Examinations and Assessments Section:

a) A subset of the board will meet to discuss the individual applications and band the seriousness of each application on a scale of 1–3 with 1 indicating minor impact, 2 indicating moderate impact, and 3 indicating very serious impact. When reaching this decision, examiners will take into consideration the severity and relevance of the circumstances, and the strength of the evidence.

Examiners will also note whether all or a subset of papers were affected, being aware that it is possible for circumstances to have different levels of impact on different papers.

b) The banding information will be used at the final board of examiners meeting to adjudicate on the merits of candidates;

c) A brief, formal record will be kept confirming (i) the fact that information about special circumstances has been considered by the examiners, (ii) how that information has been considered, and (iii) the outcome of the consideration with the reasons for the decisions reached.

Further information on how to submit Mitigating Circumstances Notices to Examiners is available at https://www.ox.ac.uk/students/academic/exams/in-person-exams.
Some examples of mitigating circumstances that may have impacted on a student's performance in an examination or during the preparation of coursework include acute illness or unforeseen circumstances such as a traffic accident or bereavement.

5.3.21 Penalties for Poor Academic Practice

The Examination Board shall deal wholly with cases of poor academic practice where the material under review is small and does not exceed 10% of the whole.

Assessors should mark work on its academic merit with the board responsible for deducting marks for derivative or poor referencing.

Determined by the extent of poor academic practice, the board shall deduct between 1% up to 10% of the marks available for cases of poor referencing where material is widely available factual information or a technical description that could not be paraphrased easily; where passage(s) draw on a variety of sources, either verbatim or derivative, in patchwork fashion (and examiners consider that this represents poor academic practice rather than an attempt to deceive); where some attempt has been made to provide references, however incomplete (e.g. footnotes but no quotation marks, Harvard-style references at the end of a paragraph, inclusion in bibliography); or where passage(s) are 'grey literature' i.e. a web source with no clear owner.

If a student has previously had marks deducted for poor academic practice or has been referred to the Proctors for suspected plagiarism the case must always be referred to the Proctors. In addition, any more serious cases of poor academic practice than described above will be referred to the Proctors.

5.3.22 Plagiarism

All the assessors for the course will be alert to the possibility of plagiarism in written reports. If an assessor, or a Turnitin report generated in the course of examination procedures, raises concerns about the proper attribution of a passage or piece of submitted work, the matter will be reported to the Chair of Examiners. If the extent of the material affected is a small proportion of the whole (usually under 10%), this will be dealt with by the board of examiners. More serious cases will be referred to the Proctors. Where the Chair

finds that the matter can be dealt with by the Board, assessors will mark the work on its academic merits. The Board will then deduct marks for derivative or poorly referenced work. Boards are free to operate marks deductions of between 1 and 10% (maximum) of the marks available for that particular piece of work.

When students take an open book exam, they will be required to sign up to an 'honour code'. This will confirm that they have understood and abided by the University's rules on plagiarism and collusion (see https://www.ox.ac.uk/students/academic/exams/open-book/honour-code)

5.3.23 Role of the Proctors

The Proctors are responsible overall for the conduct of examinations within the University. Specifically, they are responsible for:

- Investigating cases of suspected intentional plagiarism
- Making decisions about non-acute and acute illness for MSc students
- Investigating appeals from candidates
- Decisions to deduct marks or disallow work in some cases of plagiarism or in cases of unauthorised late submission
- As far as the remit of Proctors permits, investigating allegations of inadvertent plagiarism and appeals from candidates.

5.3.24 Resits

A student who fails the MSc in Mathematical and Computational Finance course may resit on one, but no more than one, subsequent occasion. This resit attempt shall normally be taken at the next opportunity, but may be deferred once, i.e. it must be taken at one of the next two opportunities. In such a case, a student will not be eligible for a merit or distinction on the whole course. The candidate will only be allowed to resit the failed exams within the specific assessment units they have failed.

A candidate who resits a unit for which a technical fail mark was originally awarded (a unit for which no work was submitted or a written examination was missed) will have the mark for that unit capped at a pass.

No student who has satisfied the examiners in the examination may enter again for the same examination. If a student fails one particular unit, there is no provision for the candidate to resit that unit during the same academic year.

Where a course is no longer being offered in the year of the resit, the Examiners will be responsible for arranging provisions. For more information, please see Part 14 of the Examination Regulations.

5.4 CATS and ECTS Points

The MSc in Mathematical and Computational Finance is worth 180 CATS points (UK credits) according to the Higher Education Credit Framework for England.

180 CATS points equates to 60-90 credits in the European Credit Transfer Scheme (ECTS points).

5.4.1 Student prizes

Each year, at the Final Examination Board meeting, the Examiners will consider all students, who have completed the MSc in that particular year, for the Best Overall Student Prize. The winning student will be awarded £250.

The MUFG Securities prize to the amount of £500 for the best dissertation will also be awarded annually.

A central list of all prizes can be found at: https://www.ox.ac.uk/students/fees-funding/prizes-and-awards

5.5 Graduation Ceremony

Upon successfully completing the MSc you should receive an automated email inviting you to select a date for your graduation ceremony or to opt for graduation in absentia. If you do not receive such an email, please email degree.ceremonies@admin.ox.ac.uk and copy in your college, which is responsible for the arranging of graduation ceremonies. If you elect to attend a graduation ceremony, you will receive your degree certificate at that ceremony. If you decide to graduate in absentia, you will receive your degree certificate via mail. In either case, please ensure, within a month of submitting your dissertation, that you check (via the Student Self Service website) the spelling of your name that the University has on record, as that is what will appear on your degree certificate, and, particularly if you will be graduating in absentia, the address that the university has on record for you, as that is where mailed degree certificate and any other hard copies of correspondence will be sent. It is your responsibility to check these details and if you have not done so, you may be charged for an amended or duplicate degree certificate to be sent.

5.6 Examination Entries

Students will be entered automatically for all assessments. However, you will be asked which electives you choose to take before the start of Hilary Term, in order to assist the Course Administrator with the class and lecture arrangements.

5.7 Preparation and Submission of Coursework

5.7.1 General information for all submissions

- For information on deadlines for submitting work, please refer to the Course Calendar.
- All projects are to be submitted on-line using the online Inspera coursework submission system.

- You must submit one electronic file. Any subsidiary programming or other files must be included, as an appendix, within this single file. If you are unsure as to how to do this please contact for further advice. mathcompfin@maths.ox.ac.uk. (Occasionally these instructions may vary. In such cases full details will be given to students at the time.)

- Please ensure that you give your candidate number on your assignment and **no other identifying information** - i.e. do not add your name, college, etc.

- Please ensure the document is named as your candidate number (e.g. 245678.pdf)

- In the extremely unlikely event that there does seem to be some technical problem and you are concerned that your work has not been submitted please email it immediately to the administrator at mathcompfin@maths.ox.ac.uk, with a copy of the Declaration of Authorship to attest that it is your own work, except where indicated.

The Declaration of Authorship can be found in the 'Related Documents' panel here:
https://www.ox.ac.uk/students/academic/exams/submission
NB: You only fill in this form if you are submitting it via email.

It is vital that you submit your work by the deadline, as any late submission, even one minute late, must be reported to the Examiners. If you experience a medical emergency or other catastrophe which threatens to prevent you from submitting on time please contact mathcompfin@maths.ox.ac.uk and your College Office as soon as circumstances allow to explain the situation.

All submitted projects and dissertations will be screened by Turnitin software which will compare them to a wide range of material (both published and unpublished) and to the work of other candidates. The examiners will be notified of the extent of any textual matches discovered by Turnitin, and will consider, for instance, whether any text that a candidate has copied from elsewhere is properly identified and the source duly acknowledged. Any suspected cases of plagiarism will be forwarded to the Proctors and may result in a direct fail.

5.7.2 Dissertation

When preparing the dissertation candidates are strongly advised to use LATEX to typeset.

An electronic copy of your dissertation must be submitted to the online Inspera coursework submission system by noon on Friday of Week 10 of Trinity Term.

Submitted electronic dissertations will be screened by Turnitin software which will compare them to a wide range of material (both published and unpublished) and to the work of other candidates. The examiners will be notified of the extent of any textual matches discovered by Turnitin, and will consider, for instance, whether any text that a candidate has copied from elsewhere is properly identified and the source duly

acknowledged. Further information on referencing, using LATEX, and other practical matters associated with the submission can be found here:
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/examination-and-assessment-new

6. Key Assessment Links

Examination Regulations: https://examregs.admin.ox.ac.uk/

Examination Timetables: http://www.ox.ac.uk/students/academic/exams/timetables

Past examination papers: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/examination-and-assessment-new

Past examiners reports: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/examination-and-assessment-new

7. University's Policy on Plagiarism

The University and department employ a series of sophisticated software applications to detect plagiarism in submitted examination work, both in terms of copying and collusion. It regularly monitors online essay banks, essay-writing services, and other potential sources of material. It reserves the right to check samples of submitted essays for plagiarism. Although the University strongly encourages the use of electronic resources by students in their academic work, any attempt to draw on third-party material without proper attribution may well attract severe disciplinary sanctions. Students should be aware that if examiners are obliged to report any suspected cases of plagiarism to the Proctors Office. The Proctors Office will investigate the case and advise the examiners on appropriate action.

The University definition of what constitutes Plagiarism can be found at the following link. Students are expected to familiarise themselves with the policy:
http://www.ox.ac.uk/students/academic/guidance/skills/plagiarism

7.1 What is plagiarism?

Plagiarism is the work or ideas from another source as your own, with or without consent of the original author, by incorporating it into your work without full acknowledgement. Intentional plagiarism may incur severe penalties, including failure of your degree.

7.2 Why does plagiarism matter?

All published and unpublished material, whether in manuscript, printed or electronic form, is covered under the term plagiarism. Collusion is another form of plagiarism involving the unauthorised collaboration of students (or others) in a piece of work. Plagiarism is a breach of academic integrity. It is a principle of intellectual honesty that all members of the academic community should acknowledge their debt to the originators of the ideas, words, and data which form the basis for their own work. Passing off another's

work as one's own is not only poor scholarship, but also means that a student has failed to complete the learning process. Deliberate plagiarism is unethical and can have serious consequences.

7.3 What to avoid?

The necessity to reference applies not only to text, but also to other media, such as computer code, illustrations, graphs etc. It applies equally to published text drawn from books and journals, and to unpublished text, whether from lecture notes, theses or other students' essays. Students must also attribute text or other resources downloaded from websites. Various forms of plagiarism include:

- Verbatim quotation without clear acknowledgement
- Paraphrasing
- Cutting and pasting from the Internet
- Collusion
- Inaccurate citation
- Failure to acknowledge
- Professional agencies
- Auto-plagiarism

Detailed descriptions for each of the forms of plagiarism can be found in the University's policy on plagiarism: http://www.ox.ac.uk/students/academic/guidance/skills/plagiarism

There is also information on unauthorised use of AI in exams and assessment:
https://academic.admin.ox.ac.uk/article/unauthorised-use-of-ai-in-exams-and-assessment

7.4 Further Information

Examples of referencing can be found here:
https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf/examination-and-assessment-new

If a student is unclear about anything related to the University's policy on plagiarism they should speak with their supervisor or email mathcompfin@maths.ox.ac.uk.

7.5 Turnitin

Submitted take-home projects/assignments and dissertations will be screened by Turnitin software which will compare them to a wide range of material (both published and unpublished) and to the work of other candidates. The Examiners will be notified of the extent of any textual matches discovered by Turnitin, and will consider, for instance, whether any text that a candidate has copied from elsewhere is properly identified and the source duly acknowledged.

8. Resources and Facilities

8.1 Departmental Work

You will have access to your **MSc study room** in the ground floor of the Mathematical Institute. The study room will be available on a rotational basis with the rotation to be discussed amongst the students. Computers, desks and white boards are available to work on. The study room has power sockets for students wishing to use their own laptops and there is wi-fi throughout the building.

8.2 Libraries

8.2.1 Whitehead Library, Mathematical Institute

Contact: Ms Cathy Hunt (Librarian)

Email: library@maths.ox.ac.uk

Website: https://www.maths.ox.ac.uk/members/library

The Whitehead Library holds material covering mathematical topics at postgraduate and research level, including mathematical finance. It is primarily for the use of current graduate students and academic staff of the Mathematical Institute.

Your University Card will have been activated to open the library door and you will have 24/7 access.

Books taken out of the Library must be checked-out on the SOLO computer loan system at the terminal in the library. Please note that books are not allowed to be taken away from Oxford and should be returned to the library before you leave for vacation, or any other length of time.

8.2.2 Other libraries

Other libraries holding some mathematical finance material include:

Radcliffe Science Library (RSL): https://www.bodleian.ox.ac.uk/libraries/vhl/rsl

Sainsbury Library in the Said Business School: https://www.bodleian.ox.ac.uk/libraries/business

The Bodleian Social Science Library (SSL): https://www.bodleian.ox.ac.uk/libraries/ssl

Information about all Bodleian libraries can be found at: https://www.bodleian.ox. ac.uk/libraries, and non-Bodleian libraries at: https://www.bodleian.ox.ac.uk/ other-libraries-at-oxford

8.2.3 College libraries

You will have access to the library in your own College.
Information about College libraries can be found here: https://libguides.bodleian.ox.ac.uk/colleges

8.3 Resources for mathematical finance

8.3.1 Bench Collection

A small collection of books is held in a locked cupboard in the Mathematical Finance study room. This is an informal collection, not part of the University libraries. Please notify your course administrator with advanced notice if you wish to inspect this collection/borrow a book. The books in this collection can be borrowed whilst you are in Oxford for a course module, but please note that books are not to be taken away from the department.

8.3.2 E-books

Some of the books recommended for the course are available as e-books. You can find individual titles by searching the SOLO library catalogue (https://solo.bodleian.ox. ac.uk), or you can go to the online reading lists for your course on ORLO (Oxford Reading Lists Online): https://oxford.rl.talis.com/index.html

You will need to log in to ORLO with your Single Sign-On username and password and in the search box enter: math mscmcf which will retrieve course sections for which e-books are available.

For further information about e-books, please see the E-Books LibGuides: https://libguides.bodleian.ox.ac.uk/e-books/

8.3.3 LibGuides

Oxford LibGuides are a series of online guides to resources: https://libguides.bodleian.ox.ac.uk/oxford

Mathematics LibGuide: https://libguides.bodleian.ox.ac.uk/maths (includes how to access e-books, e-journals, databases, conference proceedings, dissertations)

Key Business Resources: https://libguides.bodleian.ox.ac.uk/business (includes company information, market research, industry and market reports)

Economics LibGuide: https://libguides.bodleian.ox.ac.uk/economics

Managing your references LibGuide: https://libguides.bodleian.ox.ac.uk/reference-management (RefWorks, EndNote, etc.)

9. IT matters

9.1 Laptops

Students are expected to have a fully-functioning laptop for practical sessions, installed with relevant software such as Matlab (for which student licenses will be provided). The preferred platform for the programming courses is MS Windows.

9.2 Computing Facilities

Desktop computers are available in the MSc study room, and in public-access areas throughout the Mathematical Institute. Some moderately large computers are available for shared computation and remote access use, see: https://www.maths.ox.ac.uk/members/it/machines/compute-terminal-services

For further information about IT matters, including rules and regulations surrounding the use of IT facilities, please see: http://www.maths.ox.ac.uk/members/it

Students will have access to various licences for further details go to:
http://www.maths.ox.ac.uk/members/it/software-personal-machines

9.3 IT and Email accounts

At the departmental induction session, you will be given a Mathematical Institute IT account and email address. The email address will be of the format firstname.lastname@maths.ox.ac.uk

It is important that you either read this email regularly or set up a forward from it to an account which you do read regularly. It will be used to contact students about a variety of important matters.

You will also receive as soon as you have returned your University contract a University 'single-sign-on' IT account. This will have an email address associated with it which will be of the format firstname.lastname@college.ox.ac.uk

For the same reason, it is important that you either read this email regularly or set up a forward from it to an account which you do read regularly.

10. Careers

The Mathematical & Computational Finance Research Group organises some career events exclusive to the students on this MSc. The department also organises a large Careers Fair which usually takes place at the end of Michaelmas Term. You will be emailed details of any relevant careers' events.

In addition to this, the University Careers Service organises a range of events which are open to any member of the University. Please see: http://www.careers.ox.ac.uk/careers-fairs/ for further details.

The Research Group is also approached by representatives of industry seeking to employ graduates, and with the permission of the student, is able to pass their details on.

10.1 Paid Work Guidelines for Oxford Graduate Students

The University recognises that some graduate students will want to undertake a limited amount of paid work during their studies, whether as part of their academic development (e.g. teaching and demonstrating) or to help to support themselves financially.

Full-time graduate students should generally regard their studies as a full-time occupation of at least 40 hours per week, and should normally be available for academic commitments during core working hours (i.e. 9 am to 5 pm on weekdays). Graduate students on taught courses should regard this as applying to term-time study.

More information can be found at: https://academic.admin.ox.ac.uk/policies/paid-work-guidelines-graduate-students

11. Complaints and Appeals within the Mathematical Institute

The University, the MPLS Division and the Mathematical Institute all hope that provision made for students at all stages of their course of study will result in no need for complaints (about that provision) or appeals (against the outcomes of any form of assessment).

Where such a need arises, an informal discussion with the person immediately responsible for the issue that you wish to complain about (and who may not be one of the individuals identified below) is often the simplest way to achieve a satisfactory resolution.

Many sources of advice are available from colleges, faculties/departments and bodies like the Counselling Service or the OUSU Student Advice Service, which have extensive experience in advising students. You may wish to take advice from one of those sources before pursuing your complaint.

General areas of concern about provision affecting students as a whole should be raised through Joint Consultative Committees (Joint Supervisory Committee) or via student representation on the faculty/department's committees.

Complaints

If your concern or complaint relates to teaching or other provision made by the faculty/department, then you should raise it with the Director of Graduate Studies (Prof. Christoph Reisinger) as appropriate.

If your concern relates to the course as a whole, rather than to teaching or other provision made by the department you should raise it with Chair of the Supervisory Committee (Prof. Jan Obloj).

Complaints about departmental facilities should be made to the departmental administrator. If you feel unable to approach one of those individuals, you may contact the Head of Department (Professor James Sparks). The officer concerned will attempt to resolve your concern/complaint informally.

If you are dissatisfied with the outcome, you may take your concern further by making a formal complaint to the Proctors under the University Student Complaints Procedure:
https://www.ox.ac.uk/students/academic/complaints?wssl=1

If your concern or complaint relates to teaching or other provision made by your college, you should raise it either with your tutor or with one of the college officers, Senior Tutor, Tutor for Graduates (as appropriate). Your college will also be able to explain how to take your complaint further if you are dissatisfied with the outcome of its consideration.

Academic Appeals

An academic appeal is an appeal against the decision of an academic body (e.g. Boards of Examiners, transfer and confirmation decisions etc.), on grounds such as procedural error or evidence of bias. There is no right of appeal against academic judgement.

If you have any concerns about your assessment process or outcome it is advisable to discuss these first informally with your subject or college tutor, Senior Tutor, Course Director, Director of Graduate Studies, supervisor or college or departmental administrator as appropriate. They will be able to explain the assessment process that was undertaken and may be able to address your concerns. Queries must not be raised directly with the examiners.

If you still have concerns you can make a formal appeal to the Proctors who will consider appeals under the University Academic Appeals Procedure: https://www.ox.ac.uk/students/academic/complaints?wssl=1

Please remember in connection with all the academic appeals that:

- The Proctors are not empowered to challenge the academic judgement of examiners or academic bodies

- The Proctors can consider whether the procedures for reaching an academic decision were properly followed; i.e. whether there was a significant procedural administrative error; whether there is evidence of bias or inadequate assessment; whether the examiners failed to consider special factors affecting a candidate's performance.
- On no account should you contact the examiners or assessors directly.

12. University Policies

The University has a wide range of policies and regulations that apply to students. These are easily accessible through the A-Z of University regulations, codes of conduct and policies available on the Oxford Students website at: https://www.ox.ac.uk/students/academic/regulations/a-z

Particular attention is drawn to the following University policies:

Equal Opportunities Statement: https://edu.admin.ox.ac.uk/equality-policy

Intellectual Property Rights: https://researchsupport.admin.ox.ac.uk/innovation/ip/policy

Code on Harassment: https://edu.admin.ox.ac.uk/university-policy-on-harassment

Policy on Plagiarism: https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism

Policy on recording lectures by students: https://www.ox.ac.uk/students/academic/regulations?wssl=1

12.1 Departmental Safety Polices

You are urged to act at all times responsibly, and with a proper care for your own safety and that of others. Departmental statements of safety policy are posted in all departments, and you must comply with them. Students should note that they (and others entering onto departmental premises or who are involved in departmental activities) are responsible for exercising care in relation to themselves and others who may be affected by their actions. In the Mathematical Institute accidents should be reported immediately to reception, telephone 73525, who keep the accident book. There is a first aid room located on the ground floor of the South Wing. If you require access to this room please report to reception. Each lecture theatre has its own proper escape route and you are urged to familiarise yourself with these.

Those for the Mathematical Institute lecture and seminar rooms, are set online at:
https://www.maths.ox.ac.uk/members/building-information/security-safety-and-reporting-building-issues

In the case of evacuation of the lecture theatre give heed to the instructions of the lecturer.

13. Student feedback and representation

You will be asked to complete questionnaires evaluating the teaching received for each course, and at the end of the year to complete a questionnaire evaluating the course as a whole. You are encouraged to take the time to complete these, as the feedback will be used to inform future course planning.

One student on the MSc will be nominated to become student representative; they will sit on the MSc Supervisory Committee panel and act as a voice for their cohort.

Students on the MSc are also invited to serve on the Departmental Consultative Committee with Graduates. For further details about this, and about who the student representatives are, please contact graduate.studies@maths.ox.ac.uk.

13.1 Student Barometer

Students on full-time and part-time matriculated courses are surveyed once per year on all aspects of the course (learning, living, pastoral support, college) through the Student Barometer. Previous results can be viewed by students, staff and the general public at:
https://www.ox.ac.uk/students/life/student-engagement?wwssl+1

13.2 Divisional and University Representatives

The MPLS Division also runs a divisional Undergraduate Joint Consultative Forum, a divisional Graduate Joint Consultative Forum, and is establishing a Joint Consultative Forum for Graduate Taught Courses. Each Forum is chaired by the senior MPLS Academic who is responsible for that area across the Division, an undergraduate or graduate representative from each department, the undergraduate or graduate representative on the Academic Committee and Divisional Board, and the Oxford Union Student Union (OUSU) Vice-President (Access and Academic Affairs) or Vice-President (Graduates).

Student representative sitting on the MPLS Divisional Board are selected through a process organised by OUSU. Details can be found on the OUSU website along with information about student representation at the University level.

13.3 Opportunities to Provide Feedback

MSc students, like all students on matriculated courses, will be surveyed on all aspects of their course (learning, living, pastoral support, college) through the annual Student Barometer. Previous results can be viewed by students, staff and the general public at:
https://www.ox.ac.uk/students/life/student-engagement?wssl=1.

Key Student Representation Links

CCG: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/doctor-philosophy

Minutes of meetings and list of student representatives.

OUSU: https://www.oxfordsu.org/

University Surveys: https://www.ox.ac.uk/students/life/student-engagement?wssl=1

14. Further student support and information

There are many sources of information and support available to students.
Information on services and support provided by the University for all students can most readily be accessed via "Student Self Service" at: https://www.ox.ac.uk/students/

Information on services and support provided specifically by the Mathematical Institute can be accessed via https://www.maths.ox.ac.uk/members/students/postgraduate-courses.

The college is a further source of support and information.

In the first instance students are encouraged to discuss any problems or issues with their supervisor or college advisor. Every college has their own systems of support for students, please refer to your College handbook or website for more information on who to contact and what support is available through your college.

Details of the wide range of sources of support available more widely in the University are available from the Oxford Students website https://www.ox.ac.uk/students/welfare, including in relation to mental and physical health and disability.

If you have a disability, please see information on provision for disability and on accessibility at the links below:

https://www.maths.ox.ac.uk/members/policies/disability
https://www.maths.ox.ac.uk/members/building-information/accessibility

UNIVERSITY OF OXFORD

Mathematical Institute

For further information please contact:

Email: mathcompfin@maths.ox.ac.uk

Phone: +44 1865 280102

Website: https://www.maths.ox.ac.uk/members/students/postgraduate-courses/msc-mcf

Facebook/LinkedIn: Please find us by searching for '*MSc in Mathematical and Computational Finance*'