MSC IN MATHEMATICS AND FOUNDATIONS OF COMPUTER SCIENCE EXAMINATION CONVENTIONS 2024-25

1. Introduction

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 document sets out the examination conventions for the M.Sc. in Mathematics and Foundations of Computer Science for the academic year 2024-25. These examination conventions are approved annually by the Supervisory Committee for the M.Sc. in Mathematics and Foundations of Computer Science 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 University Examinations.

2. Examiners

The Board of Examiners consists of at least three (currently four) members, with at least one (currently two) being external to the University. The examiners will appoint assessors to help with the assessment of the course. The current Board of Examiners consists of Prof Oliver Riordan (Internal examiner and Chair – Maths), Prof Stefan Kiefer (Internal examiner - CS), Dr Miriam Backens (External examiner - University of Birmingham) and Dr Mark Walters (External Examiner - Queen Mary University of London).

Candidates should not, under any circumstances, seek to make contact with individual internal or external examiners for matters related to the conduct of the examination.

3. Requirements of the Course

The Examiners translate the raw marks on each paper into University Standardised Marks (USMs) out of 100. Agreed final marks for individual papers will be expressed using the following scale:

70 - 100	Distinction
65 – 69	Merit
50 - 64	Pass
49 - 0	Fail

To pass the course, passes must be obtained on at least five mini projects that include two at the Schedule II level and for the dissertation. Candidates must offer at least four courses from among those available in Michaelmas and Hilary Terms. No candidate may enter for more than four courses in one term.

An overall award of distinction may be made to candidates who have shown excellence over the whole examination. An overall award of merit may be made to candidates who have produced work of particularly high quality in the whole examination.

3.1 Marking Conventions

The following sets out the conventions for the level of USMs awarded, and the mechanism by which a final USM is determined.

3.2 Verification and reconciliation of marks

Mini projects are set by those giving the course and are double-blind marked by that person and one other assessor (these two mark the work independently of each other). Each proposes a USM for the work. If the assessors' marks do not differ by more than 10, and do not cross the pass/fail boundary, the final mark will usually be the average of the two marks, rounded to the nearest whole number (.5 is rounded up). However, if the marks differ by more than 10 marks, or cross the pass/fail boundary, the assessors will be required to have a further discussion about the assessment in order to agree on a final USM.

The exception is mini projects which have a model solution and marking scheme approved by the examiners. In such cases each script is marked by an assessor and this marking is checked independently to ensure that all parts have been marked and the part-marks have been correctly totalled and recorded.

The mini projects which are set are submitted to the Examiners for prior vetting, and the Examiners may moderate the marks given by assessors, in particular to achieve parity across subjects. The results will usually be published soon after the next meeting of the examiners and candidates will be advised of the USMs awarded. (Meetings take place in Hilary and Trinity terms, and in September after the dissertation vivas.)

The dissertation is marked independently by the dissertation supervisor and by a second assessor. These two marks are averaged to produce a provisional USM following the same procedures given for mini projects which are double-blind marked. Reconciliation is required if the two assessors' marks differ by 10 points, or if the range crosses the pass/fail boundary. Each Dissertation will also be seen by at least one Examiner. The second assessor of the dissertation will normally be present at the oral examination, and the Examiners will determine the USM only after the oral examination has been held, taking into account all the evidence from the double-marking, the supervisor's additional input, and from the oral examination.

3.3 Penalties for Late or Non-Submission of Work

Late Submission of Coursework for the M.Sc. in Mathematics and Foundations of Computer Science

(this includes mini-projects and the dissertation) is a serious matter and will usually result in academic penalties unless prior permission for late submission has been given by the Proctors. In the absence of such Proctorial permission, academic penalties will be as set out in Table 1 below. (Note that if the late submission penalty is higher than the mark for the submission, a candidate will be awarded a mark of zero.)

Lateness of submission	Penalty (USMs)
Up to 4 hours	1
4–24 hours	10
24–48 hours	20
48–72 hours	30
72 hours - 14 days	35
More than 14 days late	Fail

Table 1: Penalties for late submission.

Where no work is submitted, a mark of zero will be awarded for that particular piece of work. The mark for any resit of the assessment will be capped at 50. Such a resit is only available once to candidates who initially fail the whole M.Sc. course.

3.4 Penalties for poor academic practice in submitted work

The Examination Board shall deal wholly with cases of poor academic practice in submitted work and open-book online examinations 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% and 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 should also always be referred to the Proctors.]

3.5 Qualitative Marking Criteria

Mini-Projects Qualitative Descriptors

Mini-projects will be assessed with reference to the following qualitative descriptors.

70–100 The candidate has demonstrated an excellent understanding of almost all of the material covered with a commensurate quality of presentation and has completed almost all of the assignment satisfactorily, further subdivided by:

90–100 The candidate has shown considerable originality and insight going well beyond the straightforward completion of the task set.

- 80–89 The work submitted shows a near-perfect completion of the task at hand, but does not meet the additional requirements above, or does but has some defects in presentation.
- 70–79 The work submitted is of a generally high order, but may have minor errors in content and/or deficiencies in presentation.
- 60–69 The candidate has demonstrated a good or very good understanding of much of the material, and has completed most of the assignment satisfactorily, without showing the level of excellence expected of the above USM range.
- 50–59 The candidate has demonstrated an adequate understanding of the material and an adequate ability to apply their understanding, without showing the level of understanding expected of the above USM range.
- 40–49 The work submitted, while sufficient in quantity, suffers from sufficient defects to show a lack of adequate understanding or ability to apply results.
- 30–39 The candidate, while attempting a significant part of the mini-project, has displayed a very limited knowledge or understanding at the level required.
- 0–29 The candidate has either attempted only a fragment of the mini-project or has shown an inadequate grasp of basic material.

Dissertations Qualitative Descriptors

Dissertations will be assessed with reference to the following qualitative descriptors.

- 90–100 Work of potentially publishable standard, as evidenced by originality or insight. The work should show depth and accuracy, and should have a clear focus. It is likely to go beyond the normal MSc level. The standard one sees in winners of one of the examination prizes.
- 80–89 Work in this range will be at the level of a strong candidate for a DPhil applicant. The project will be an easy choice as a winner of a college essay prize. It will have depth, accuracy and a clear focus. It will show a strong command of material at least at the MSc level. It is likely to contain original material, which may take the form of new mathematical propositions, new examples, or new calculations, for example.
- 70–79 The work submitted is of a generally high order, with depth, clarity and accuracy, but may have minor errors in content and/or deficiencies in presentation. It may contain original material, at least in the sense of new examples or calculations.
- 60–69 The candidate shows a good grasp of their subject, but without the command and clarity required for first class marks. Presentation, referencing and bibliography should be good, and the mathematics should have no more than minor errors.
- 50–59 The work shows an adequate grasp of the subject, but is likely to be marred by having material at too low a level, by serious or frequent errors, a high proportion of indiscriminate information, or poor presentation and references.

- 40–49 The candidate shows reasonable understanding of parts of the basic material, but reveals an inadequate competence with others. The material may be at too low a level. There are likely to be high levels of error or irrelevance, muddled or superficial ideas, or very poor writing style.
- 30–39 The candidate shows some limited grasp of at least part of the material.
- 0–29 Little evidence of understanding of the topic. The work is likely to show major misunderstanding and confusion.

3.6 Treatment of Practicals

Practicals are offered as part of the Graph Representation Learning and Geometric Deep Learning courses in 2024-25, instead of class teaching. Practicals play no part in the overall classification, but do appear on the student transcript. Where a student takes two courses using practicals, the overall result will be a combination of the marks for both courses. Reports on practicals are marked by the demonstrating staff as each practical has been completed, and the Examiners receive these marks, together with the practical reports themselves. The demonstrating staff are not appointed as Assessors for the purpose of marking practicals, and it is therefore Examiners' responsibility to determine what credit is given for each piece of practical work. The marks given by the demonstrating staff will serve as a guide, using the table below.

The Examiners will give no credit for practical work that was not submitted for marking by the deadline and signed by a demonstrator, unless there are extenuating circumstances. The following numerical procedure is suggested for processing the marks. Each practical is marked on a scale S+, S, S- that is explained in the Course Handbook. These marks will be converted to numbers using the following scale:

S+	100
S	70
S-	30

The borderlines for passing the practicals are 50 for a Pass and 70 for a Distinction.

3.7 Approved Subjects

Candidates may, with the permission of the Course Director, substitute no more than one of the five required written assignments with an appropriate course of study from outside the published list, which need not be examined by written assignment. Where approved, this will be given a Schedule listing (Schedule I or II) and used in place of a miniproject of the appropriate schedule in the classification criteria for the course. Where an approved subject is taken, examination for the course is the responsibility of the exam board responsible for the setting of the paper (eg. the Part C Examiners where a Mathematics Part C course is taken), and follows the rules set out in the conventions governing the course offering the assessment.

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.

4. Classification Criteria

To determine the final USM, F, the dissertation is given the weight of three mini projects; the final USM, F, is calculated as

$$F = [(X + Y + A + B + C + 3D)/8]$$

where X, Y are the best two marks on Schedule II courses, A, B, C are the three highest other marks on mini projects, and D is the dissertation mark.

Passes, merits and distinctions, are determined by the following rules:

(i) If any of X, Y, A, B, C, D is less than 50, the candidate is failed.

(ii) If either

- (a) D ≥ 70, and X, Y, A, B, C ≥ 70 or
- (b) $D \ge 80, X \ge 70, Y \ge 67$ and $(X + Y + A + B + C)/5 \ge 70$,

the candidate is awarded a distinction.

(iii) If either

- (a) $D \ge 65$, and X, Y, A, B, $C \ge 65$
 - or
- (b) $D \ge 75, X \ge 65, Y \ge 63$ and $(X + Y + A + B + C)/5 \ge 65$,

the candidate is awarded a merit.

(iv) In all other cases the candidate is awarded a pass.

[**Note**: Conditions (ii)(b) and (iii)(b) permit the examiners to interpret the requirement 'excellence throughout the examination' more broadly, to award a distinction or merit for particular excellence on the dissertation where the mini projects are not uniformly of distinction or merit standard.]

5. Resits

A candidate who fails the MSc may be admitted to and examined on the course as offered in one of the two subsequent years. This resit attempt shall normally be taken at the next opportunity, but may be deferred once.

In such a case the examiners will specify at the time of failure which of the assessed components of the course may or must be redone. In such a case a student will not be eligible for a merit or distinction on the whole course. Where a resit is required after technical failure of an option (ie. non-submission of the work), this module mark will be capped at 50.

No piece of written work shall be submitted for examination on more than one occasion. It is University policy that candidates who have initially failed an MSc are not normally eligible for the award of merit or distinction.

6. Consideration of Mitigating Circumstances

A candidate's final outcome will first be considered using the classification rules/final outcome rules as described above in section 4. The exam board will then consider any further information they have on individual circumstances.

Where a candidate or candidates have made a submission, under Part 13 of the Regulations for Conduct of University Examinations, that unforeseen circumstances may have had an impact on their performance in an examination, a subset of the board (the 'Mitigating Circumstances Panel') 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. The Panel will evaluate, on the basis of the information provided to it, the relevance of the circumstances to examinations and assessment, and the strength of the evidence provided in support. 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. The banding information will be used at the final board of examiners meeting to decide whether and how to adjust a candidate's results. Further information on the procedure is provided in the *Examination and Assessment Framework, Annex E* and information for students is provided at <u>www.ox.ac.uk/students/academic/exams/problems-completing-your-assessment</u>

Further information on how to make an application for consideration of mitigating circumstances in an examination is available at <u>http://www.ox.ac.uk/students/academic/exams/guidance</u>.