

## **M.Sc. in Mathematical Modelling and Scientific Computing Special Topic Guidelines for Assessment**

A special topic is one unit in weight, and should therefore be equivalent to one sixteen-hour lecture course. A special topic usually takes the form of a short essay on a topic relevant to one of the listed lecture courses. Students are expected to read beyond the lectures and to write approximately 15 pages (up to 20 pages excluding references and appendices without penalty). Assessors are not required to read appendices. Students have been informed that USM marks will be assigned to special topics with the same meaning as regards class boundaries as in the rest of the course, namely

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

Students have also been told that, in arriving at these marks, the relative weights attached to content, mathematics and presentation will be  $1/4$ ,  $1/2$  and  $1/4$ , respectively. In reaching the overall mark, please follow the guidelines below and assign individual marks for content, mathematics and presentation, weighted as indicated above. Thus a mark in the range 0-25 should be given for each of the content and the presentation and a mark in the range 0-50 for the mathematics.

**Content:** Does the essay cover enough suitably chosen material to deal adequately with the topic; is the total amount of material covered, and the range of works consulted, sufficient (bearing in mind what may reasonably be expected in the time available)? Has the candidate added something of his or her own? The candidate should have done more than just copy out sections from existing textbooks and there should be use of original sources (such as research publications) or some effort to unify diverse treatments, to earn the highest marks. However, note that we are *not* looking for original pieces of mathematical research.

**Mathematics:** The mathematics should be correct, and the candidate should display a proper level of understanding of proofs, derivations and models. Since the range of essay topics is wide and the style of essays correspondingly varied, the Examiners do not wish to be too prescriptive about how the mark assigned to mathematics is reached, and ask Assessors to use their academic judgement on how best to assess any given essay. However, the report should indicate clearly the basis on which the mark has been arrived at. You may find it helpful to subdivide the available marks in a way appropriate to the topic, stating in your report how this has been done, and giving the submarks awarded. For example, marks in the range 0-25 might be assigned separately for the competence shown in the use of techniques from lectures and for the assimilation of non-syllabus material achieved. For an applied topic, separate marks might be allocated to the modelling and to the analysis and discussion, for example.

**Presentation:** This should cover all aspects of the layout, including (where appropriate) typography, graphics, prose style, including clarity of mathematical expression. We are also concerned with a clear use of English and in particular with a proper and scholarly approach to the bibliography and use of references.

You may also find the following class descriptors helpful.

**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.

- 80–89** Work in this range will be at the level of a strong candidate for a DPhil applicant. It will have depth, accuracy and a clear focus. It will show a strong command of material. It may contain original material, which may take the form of new examples, new calculations, or new mathematical propositions, 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.
- 60–69** The candidate shows a good grasp of their subject, but without the command and clarity required for distinction level 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.

### **Reconciliation of Project Marks**

There will be two assessors for each essay. They will independently propose marks and then the Examiners will consult the assessors in order to agree a mark, wherever possible. The procedure for the reconciliation of marks is described below.

- (1) The two assessors each read the project and independently write reports and produce preliminary marks.
- (2) If the reports are broadly in agreement and the two assessor marks do not differ by more than 10 and do not fall on opposite sides of the pass/fail borderline, the examiners can take the average mark as the final USM.
- (3) If there is disagreement with the two marks, then the assessors should confer on the standard of the work. The focus will be on identifying the reasons for the difference in marks. An extreme example might be "X noticed a catastrophic error in the proof of the main theorem, but Y did not spot it." It is envisaged that email discussions may be enough in simple cases, providing nothing is said that breaches exam security.
- (4) Informed by the discussion under (3), the two assessors attempt to agree a mark, which they report to the examiners via the reconciliation form which should be returned to the Course Administrator.

- (5) If the two assessors cannot agree, the preliminary marks will be reported to the examiners, along with a summary of the discussion in (3). The examiners will appoint a third assessor who will independently assess the project before receiving the marks from the other assessors. The third assessor will make a recommendation to the examiners who will then reach a final decision. The reasons for the decision will be recorded on the reconciliation form.

**Plagiarism:** Assessors should be alert to the possibility of plagiarism and should report any suspicion they may have that plagiarism has occurred, and the evidence for this. Such reports should be made to the Chair of Examiners via the Course Administrator. 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.

**Penalties:** Any special topic which is submitted late (without permission from the Proctors) or goes over the page limit will be subjected to penalties. These will be imposed by the examiners after the project has been marked in the usual way.

**Any comments made should appear on the report form. No comments should be made solely on the essay itself.**