

**Oxford University Final Honours Schools
Trinity Term 2007**

**Mathematics and Statistics Part C
Second Notice to Candidates**

This circular contains information about:

1. standardized marks (USMs) and classification;
2. the format of papers in Part C;
3. the use of calculators and tables.

The full Regulations for the Part C examination are contained in the Examination Decrees and Regulations (the Grey Book; note that the 2003 edition also contains obsolete regulations about Part I and Part II).

The timetable for the examination will be set by the Examination Schools and they will send it to you. Timetabling is an extremely complicated process and once the timetable is published it cannot be changed. If you are unable to take a paper at the stipulated time for a religious or other compelling reason, you should ask your college to make the appropriate application on your behalf. Please do not ask the Examiners who are powerless in such matters.

A Third Notice will be sent out later with information about practical arrangements in the Examination Schools, including examination numbers, handing in of scripts and so on.

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Chairman of Examiners
Department of Statistics
March 2007

FHS 2007 Mathematics and Statistics Part C

Standardized Marks

The University instructs all examiners to adopt a uniform system of reporting marks. This means that each candidate will receive a numerical mark (USM) on each paper in the range 0-100, such that

- First Class performance (on that paper) is indicated by a mark of 70 or over;
- an Upper Second Class performance (on that paper) is indicated by a mark of 60 to 69;
- a Lower Second Class performance (on that paper) is indicated by a mark of 50 to 59;
- a Third Class performance (on that paper) is indicated by a mark of 40 to 49;
- a Pass performance (on that paper) is indicated by a mark of 30 to 39;
- a performance at the level of a Fail (on that paper) is indicated by a mark below 30.

In order to arrive at such standardized marks for each paper, the examiners will mark and assess papers in the way described below.

The Board of Examiners in Part C will assign USMs for full unit and half unit papers taken in Part C and they may recalibrate the raw marks to arrive at university standardized marks reported to candidates. The papers are designed so that the raw marks on a full unit sum to 100 and the raw marks on a half unit sum to 50. The USMs on both full units and half unit will be out of 100. However, Examiners will take into account the relative difficulty of papers when assigning USMs; in order to achieve this, Examiners may use information on candidates' performances on the Part A and B examinations when recalibrating the raw marks. They may also use other statistics to check that the USMs assigned fairly reflect the students' performances on a paper.

In order to ensure fair treatment, Examiners may exercise individual consideration in assigning USMs for candidates whose marks lie outside the standard pattern, or when assigning USMs to papers where the number of candidates involved is small or untypical. The Examiners may also adjust USMs to take account of any special circumstances affecting individual candidates.

The examiners aim to ensure that all papers are fairly and equally rewarded, but if in any case a paper appears to have been problematical, then the examiners, in their classification, will give special consideration to candidates taking that paper. The examiners will take particular care in assigning classes to those candidates whose marks fall near each Class boundary.

Classification

Candidates for the 4-year degree will receive a classification for an MMath degree based on aggregated USMs from Parts A, B and C as follows.

The classification conventions for part C are:

- First class $70 \leq Av\ USM$ and $60 \leq AvUSM-PartC$
- Upper Second Class $60 \leq Av\ USM < 70$ and $50 \leq AvUSM-Part\ C$
or $70 \leq Av\ USM$ and $40 \leq AvUSM-Part\ C < 60$
- Lower Second Class $50 \leq Av\ USM < 60$ and $40 \leq AvUSM-Part\ C$
- Third class $40 \leq Av\ USM < 50$ and $40 \leq AvUSM-Part\ C$

Half unit papers count as a half a paper when determining the average USM.

The AvUSM is the weighted USM mark average of Part A, Part B and Part C papers, with full Part A papers weighted by 2, full Part B papers weighted by 3, and full Part C papers weighted by 4. Half unit papers are weighted as half a full paper. Candidates should have completed the equivalent of 4 full papers in Part A, 4 full papers in Part B, and 3 full papers in Part C (2 full papers plus the dissertation, which counts as a full paper). The AvUSM-PartC is an average of the Part C USM marks only, including the dissertation as one paper, and half unit papers weighted by half.

A Pass will not be awarded in Part C. Candidates achieving: $AvUSM < 40$, or $AvUSM-PartC < 40$ may at the discretion of the examiners be awarded a BA.

Qualitative Descriptors of Classes: MMath in Mathematics and Statistics

- Class I* The candidate shows excellent problem-solving skills and excellent knowledge of the material, and is able to use that knowledge in unfamiliar contexts.
- Class Iii* The candidate shows good problem-solving skills and good knowledge of much of the material.
- Class Iiii* The candidate shows adequate basic problem-solving skills and knowledge of much of the material.
- Class III* The candidate shows reasonable understanding of at least part of the basic material and some problem-solving skills. Threshold level.

Fail Little evidence of competence in the topics examined; the work is likely to show major misunderstanding and confusion, coupled with inaccurate calculations; the answers to the questions attempted are likely to be fragmentary only.

Format of Examination Papers

Statistical Units and Half Units

All papers will be subject papers. Half-unit papers are available in all cases. However, for some, the first half of a paper is a recommended prerequisite for the second (see the synopses for details).

Where a student is taking both halves they will sit a single three-hour examination. Where they are taking a half-unit only, it will be examined in an examination paper of 1 $\frac{3}{4}$ hours;

Mathematics & Statistics Papers are:

- MS1a: Graphical Models and Inference
- MS1b: Statistical Data Mining
- MS1: MS1a and MS1b combined
- MS2a: Bioinformatics and Computational Biology
- MS2b: Stochastic Models in Mathematical Genetics
- MS2: MS2a and MS2b combined
- MS3b Lévy Processes and Finance

Candidates may answer all questions with the two best questions on each half counting.

Each half paper MS1a, MS1b, MS2a and MS2b will contain four questions. Each question is marked out of 25.

Dissertations on Statistical Topic (whole unit)

The deadline for handing-in projects at the examinations schools is noon on the Friday of week 9 of Hilary Term, as in stated in the Guidance Notes for 4th year Dissertations.

The attention of candidates is drawn to the requirement to submit their own original work and to complete a certificate of originality when submitting their dissertation. Passages quoted or closely paraphrased from another person's work must be identified as quotations or paraphrases, and the source of the quoted or paraphrased material must be clearly acknowledged. Failure to set a high standard in this respect could lead to a charge of plagiarism, with serious disciplinary consequences. Equally, if a student summarises another person's ideas, judgements, figures, software or diagrams, a reference to that person or the source should be made in the text and the source included in the bibliography.

Mathematics papers C1.1- C12.2 (excluding C7.3)

These are whole unit papers, and each contains four questions on Michaelmas Term work and four questions on Hilary Term work. Most of these papers can also be taken as half unit papers either on Michaelmas Term work (four questions) or on Hilary Term work (four questions). Each question is marked out of 25.

The whole unit papers last for 3 hours, and the rubric states “You may submit answers to as many questions as you wish. The best two answers in each section will count”. The whole unit papers are C1.1, C2.1, ...C11.1; also C1.2, C6.2, C6.3, and C7.2.

The half unit papers last for 1 3/4 hours, and the rubric states “You may submit answers to as many questions as you wish. The best two answers will be counted”. The half unit papers are labeled C1.1a, C1.1b, ...C11.1a, C11.1b, etc.

Late submission or Failure to submit coursework

For units where coursework is a part of the assessment, candidates are asked to refer to the First Notice regarding the details governing late submission or failure to submit coursework.

Calculators and tables

For the papers **C6.2, C8.1, C9.1, MS1a, MS1b, MS2a, MS2b, MS3b**, basic scientific calculators which have features such as exp and log, but which are NON programmable, will be allowed. For these papers **any** of the following will be permitted:

- CASIO fx-82;
- CASIO fx-83 (with any suffix, such as ES, MS) ;
- CASIO fx-85 (with any suffix, such as ES, MS) or
- CASIO fx_992 S;
- SHARP EL-530 LB
- SHARP EL-520
- SHARP EL-531 (with any suffix).

Candidates should note that no calculators will be made available in the examination room.

Calculators will not be permitted on the Mathematics papers except for C6.2, C8.1 and C9.1. For the Physics paper C7.3 calculators are also permitted but candidates should check with the Physics Department regarding the models allowed.

New Cambridge Elementary Statistical Tables will be provided for use with papers MS1a, MS1b, MS2a, and MS2b, and MS3b. These tables may be inspected in the Seminar Room, Department of Statistics, between 9 am and 12 noon on any weekday in Week 5 of Trinity Term.