

Final Honour School of Mathematics and Statistics

Part B 2009

First Notice to Candidates

This notice contains information about:

1. Standardised marks (USMs) and classification
2. The format of papers in Part B
3. The use of calculators and statistical tables.

A Second 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.

The timetable for the examination will be set by the Examination Schools and they will send it to you.

The full regulations for the Part B examination are contained in the Examination Regulations (the Grey Book).

Full particulars about the syllabus and other information can be found in the Mathematics and Statistics Undergraduate Handbook and Supplements (available at http://www.stats.ox.ac.uk/current_students/bammath/course_handbooks).

The examining conventions for Mathematics and Statistics (which are summarised in this notice) are given in full in the Examination Conventions (available at http://www.stats.ox.ac.uk/current_students/bammath/examinations).

Geoff Nicholls
Chairman of Examiners
Department of Statistics
25 February 2009

cc: Senior Maths Tutors

FHS Mathematics and Statistics, Part B 2009: Standardised marks and classification

Standardised 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

- a 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 Fail performance (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 B will assign USMs for full unit and half unit papers taken in Part B 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 examination 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.

Classification

All candidates in the 3-year degree and the 4-year degree will receive a classification at the end of the third year, based on USMs from Parts A and B as follows.

The Part A University standardized marks (USMs) are given a weighting of 2, and the Part B USMs are given a weighting of 3 for a full-unit paper and 1.5 for a half-unit paper. The weighted average of these USMs, $AvUSM$, is calculated and rounded up to the nearest whole number. Classification depends on both $AvUSM$ and on a *Strong Paper Rule*.

To satisfy the n th class *Strong Paper Rule* a candidate must have:

- at least 3 papers (or their equivalent) from Parts A and B with a USM of the n th class standard or above,
- and at least one of these papers (or the equivalent) must be in Part B.

For example, to satisfy the First Class strong paper rule a candidate needs at least 3 papers with USMs of 70 or above with at least one of these papers being in Part B. Half units count as a half paper when determining whether a strong paper rule is satisfied.

Classifications are determined as follows:

- First Class: $\text{AvUSM} \geq 70$ and the first class strong paper rule is satisfied.
- Upper Second Class: EITHER $\text{AvUSM} \geq 70$ and the first class strong paper rule is not satisfied
OR $60 \leq \text{AvUSM} < 70$ and the upper second strong paper rule is satisfied.
- Lower Second Class: EITHER $60 \leq \text{AvUSM} < 70$ and the upper second strong paper rule is not satisfied
OR $50 \leq \text{AvUSM} < 60$ and the lower second strong paper rule is satisfied.
- Third Class: EITHER $40 \leq \text{AvUSM} < 50$
OR $50 \leq \text{AvUSM} < 60$ and the lower second strong paper rule is not satisfied.
- Pass: $30 \leq \text{AvUSM} < 40$.
- Fail: $\text{AvUSM} < 30$.

BA in Mathematics and Statistics

All candidates who wish to leave at the end of their third year and who satisfy the Examiners may supplicate for a classified BA in Mathematics and Statistics at the end of Part B based on the above classification.

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.

In order to proceed to Part C, a candidate must have achieved at least a Lower Second Class Honours result in the classification at the end of Part B.

A candidate who starts Part C, but who decides not to complete the Part C examinations, may supplicate for a BA with the classification as awarded at the end of Part B based on Parts A and B.

Candidates who proceed to Part C will be classified for a second time at the MMath level. Successful candidates at Part C will thus be able to supplicate for an MMath degree with a double classification : one for Parts A and B, and one for Part C.

FHS Mathematics and Statistics, Part B 2009:
Format of examination papers
(Note new rubrics for 2009)

BS1 Applied Statistics (whole unit)

This is a 2 hour paper, consisting of 3 questions on BS1a and 2 questions on BS1b. Candidates may hand in as many answers as they wish: the best 2 answers on BS1a plus the best answer on BS1b will count for a candidate's total mark. Each question is marked out of 22 and the compulsory assessed practical component is marked out of 34.

BS2 Statistical Inference (whole unit)

This is a 3 hour paper, consisting of 3 questions on BS2a and 3 questions on BS2b. Each question is marked out of 25. Candidates may hand in as many answers as they wish: the best 2 answers on BS2a plus the best 2 answers on BS2b will count for a candidate's total mark.

BS2a Foundations of Statistical Inference (half unit)

The Michaelmas Term half of BS2 is available as the half unit BS2a (3 questions). The half unit paper lasts for 1 1/2 hours. Each question is marked out of 25. Candidates may hand in as many answers as they wish: the best 2 answers will count for a candidate's total mark.

BS3 Stochastic Modelling (whole unit)

This is a 3 hour paper, consisting of 3 questions on BS3a and 3 questions on BS3b. Each question is marked out of 25. Candidates may hand in as many answers as they wish: the best 2 answers on BS3a plus the best 2 answers on BS3b will count for a candidate's total mark.

BS3a Applied Probability (half unit)

The Michaelmas Term half of BS3 is available as the half unit BS3a (3 questions). The half unit paper lasts for 1 1/2 hours. Each question is marked out of 25. Candidates may hand in as many answers as they wish: the best 2 answers will count for a candidate's total mark.

BS4 Actuarial Science (whole unit)

This is a 3 hour paper, consisting of 3 questions on BS4a and 3 questions on BS4b. Each question is marked out of 25. Candidates may hand in as many answers as they wish: the best 2 answers on BS4a plus the best 2 answers on BS4b will count for a candidate's total mark.

Mathematics papers B1-B10

These are whole unit papers, and each contains three questions on Michaelmas Term work and three questions on Hilary Term work. Most of these papers can also be taken as half unit papers either on Michaelmas Term work (three questions) or on Hilary Term work (three questions). Each question is marked out of 25. A whole unit paper lasts for 3 hours, and the rubric states "Submit answers to as many questions as you wish: the best two from each section will count for the total mark for this paper". A half unit paper lasts for 1 1/2 hours, and the rubric states "Submit answers to as many questions as you wish: the best two will be count for the total mark for this paper".

Mathematics paper B11a

This is a half unit paper, containing three questions. Each question is marked out of 25. The paper lasts for 1 1/2 hours, and the rubric is as described above for Mathematics half unit papers.

Mathematics papers B7.1a/C7.1b and B7.2a/C7.2b

These are whole unit papers, each lasting three hours, and containing 3 questions for each of the two half units. The rubric is as described above for the whole unit papers. USMs on C7.1b and C7.2b are assigned by Part C Examiners. B7.1a and B7.2a can be taken as half unit papers, each

lasting 1 1/2 hours and containing three questions. The rubric is as described above for the half unit papers. Note that C7.1b or C7.2b cannot be taken as half units.

B21 Numerical Solutions of Differential Equations

For candidates taking both B21a and B21b, this is a 3 hour examination, with three questions on Michaelmas Term work and three questions on Hilary Term work. Candidates are required to answer at most 2 questions from each half. Individual questions are marked out of 25. For candidates taking one of the half-unit papers B21a and B21b, there will be a 1 1/2 hour examination, with three questions. Candidates are required to answer at most 2 questions. Individual questions are marked out of 25. Candidates are advised to consult the Computer Science Course Handbook for further details regarding the course B21. The USM for this unit is assigned by Computer Science Examiners.

Mathematics papers C3.1, C3.1a, C3.1b, C5.1a

C3.1 is a whole unit paper, lasting 3 hours and containing three questions for each of the two half units C3.1a and C.3.1b. You may attempt as many questions as you like but only your two best answers on each half unit will count towards your final mark for the paper. C3.1a, C3.1b, C5.1a, are half unit papers, each lasts 1 1/2 hours and contains three questions. You may attempt as many questions as you like but only your two best answers will count towards your final mark for the paper. USMs on these papers will be assigned by Part C Examiners.

Late submission or Failure to submit coursework

For the courses below, and BS1 Applied Statistics, where coursework is a part of the assessment, candidates are asked to refer to the separate Notice issued in February 2009 regarding the details governing late submission or failure to submit coursework.

The attention of candidates is drawn to the requirement to submit their own original work and to complete a **declaration of authorship** when submitting their assessed coursework. 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.

BE Extended Essay in Mathematics (whole unit)

USM marks will be assigned to Extended Essays with the same meaning as regards class boundaries as in the Mathematics and Statistics papers and are assessed independently by two assessors appointed by the Examiners. In arriving at these marks, the relative weights attached to content, mathematics and presentation will be 1/4, 1/2 and 1/4, respectively.

N1 Undergraduate Ambassadors' Scheme (half unit)

Candidates are assessed on their Journal of activities, Oral presentation, Course report and project, Teacher report. The weightings for these four components are 20%, 30%, 35%, 15% respectively.

FHS Mathematics and Statistics, Part B 2009: Calculators and Statistical tables

For the units and half units BS1, BS2, BS2a, BS3, BS3a, BS4 and B8, basic scientific calculators which have features such as exp and log, but which are NOT programmable, will be allowed. For these papers, any of the following will be permitted:

Casio fx-82, fx-83 (with any suffix, such as ES, MS), fx-85 (with any suffix, such as ES, MS), or fx_992 S,

Sharp EL-530 LB, EL-520 or EL-531 (with any suffix),

Hewlett Packard hp 9s, hp 10s or hp 30s,

Texas Instruments TI 30X (and any suffix) or TI 36X (and any suffix).

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

New Cambridge Elementary Statistical Tables will be provided for use with papers BS1, BS2, BS2a, BS3, BS3a and BS4. These tables will be available for inspection at the Department of Statistics, between 9 am and 12 noon on any weekday in Week 4 of Trinity Term.