

# FHS Mathematics and Statistics Part B 2011

## 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 use of candidate 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](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](http://www.stats.ox.ac.uk/current_students/bammath/examinations)).

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Chairman of Examiners  
Department of Statistics  
3 March 2011

## 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 Examiners in Part B will assign university standardised marks (USMs) for whole unit and half unit papers taken in Part B and they may recalibrate the raw marks to arrive at the USMs. The papers are designed so that the raw marks on a whole unit sum to 100 and the raw marks on a half unit sum to 50. The USMs on both whole units and half units will be in the range 0-100. However, the Examiners will take into account the relative difficulty of papers when assigning USMs; in order to achieve this, the 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 for the 3-year degree and for the 4-year degree will receive a classification at the end of the third year based on aggregated USMs from Parts A and B as follows.

A Strong Paper rule is used for classification.

### Strong Paper rule

A candidate will have satisfied the First Class, respectively Upper Second Class, respectively Lower Second Class, strong paper rule if at least 3 papers from Parts A and B lie in that class (or better) and include at least one such paper from Part B. In operating the rule, two half units in Part B (not making up a whole unit paper) are deemed to count as one paper lying in a particular class if each of the half units is awarded a mark at the level corresponding to that class (or better).

The Part A USMs are given a weighting of 2, and the Part B USMs are given a weighting of 3 for a whole unit and 1.5 for a half unit. The weighted average of these USMs,  $AvUSM$ , is calculated and rounded symmetrically. Classifications are determined as follows:

- First Class:  $AvUSM \geq 70$  and the First Class strong paper rule is satisfied.
- Upper Second Class: EITHER  $AvUSM \geq 70$  and the First Class strong paper rule is not satisfied  
OR  $60 \leq AvUSM < 70$  and the Upper Second Class strong paper rule is satisfied.

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

The Examiners will take particular care in assigning classes to those candidates whose marks fall near each class boundary.

### **BA in Mathematics and Statistics**

Any candidate who satisfies the Examiners for Parts A and B (and who does not subsequently enter for and achieve Honours for Part C) may supplicate for the Honours degree of BA in Mathematics and Statistics with the classification as described above, provided they have fulfilled all the conditions for admission a degree of the university.

### **MMath in Mathematics and Statistics**

In order to proceed to Part C, a candidate must achieve a Lower Second Class standard or better in Parts A and B together.

Candidates successfully completing Part C will receive a separate classification based on their USMs in Part C papers.

Note that successful candidates may only supplicate for one degree – either a BA or an MMath. The MMath has two classifications associated with it, but a candidate will not be awarded both a BA degree and an MMath degree.

### **Format of examination papers**

#### **Statistics papers**

##### **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 separate compulsory assessed practical component is marked out of 34.

##### **BS2a Foundations of Statistical Inference** (half unit)

This is a 1½ hour paper and has 3 questions. 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 1½ 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**

#### **Mathematics papers B1-B10, B21**

These are whole unit papers, and each contains 2 sections. The first section contains 3 questions on the course given in Michaelmas Term and the second section contains 3 questions on the course given in Hilary Term. In most cases half unit papers are available, in which 1 of the 2 courses comprising a whole unit is examined; each such paper contains 3 questions. Each question is marked out of 25. A whole unit paper lasts for 3 hours, and the rubric states "You may submit answers to as many questions as you wish: the best two from each section will count for the total mark". A half unit paper lasts for 1 1/2 hours, and the rubric states "You may submit answers to as many questions as you wish: the best two will count for the total mark".

#### **Mathematics papers B3.1a, B5.1a, B7.2a, B11a and B12a**

These are half unit papers, containing 3 questions. Each question is marked out of 25. Each paper lasts for 1 1/2 hours, and the rubric is as described above for Mathematics half unit papers.

#### **Mathematics paper B7.1a/C7.1b**

This comprises a whole unit paper, lasting 3 hours, and containing 3 questions for each of the 2 half units. The rubric is as described above for other whole unit papers. Note that C7.1b cannot be taken as a half unit at Part B. Marks for C7.1b are assigned by the Part C examiners.

### **Late submission or Failure to submit coursework**

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

[https://www.maths.ox.ac.uk/system/files/attachments/Notice\\_to\\_Candidates\\_Offering\\_Coursework.pdf](https://www.maths.ox.ac.uk/system/files/attachments/Notice_to_Candidates_Offering_Coursework.pdf)

### **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 25%, 50% and 25%, respectively.

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 essays. 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.

### **BSP Structured Projects (whole unit)**

Candidates will be assessed on their written project, oral presentation and peer review. The weightings for these three components are 70%, 20% and 10% respectively. For the written

projects the weighting will be further divided between general explanation and discussion of the problem (35%) and mathematical calculations and commentary (35%).

### **N1a Mathematics Education**

Candidates are assessed on two written assignments and a presentation. The weighting of the written assignments is 35% each and the weighting of the presentation is 30%.

### **N1 Mathematics Education and the Undergraduate Ambassadors' Scheme (whole unit)**

Candidates are assessed for N1a Mathematics Education as described above. For N1b the Undergraduate Ambassadors' Scheme, 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.

### **Calculators and Statistical tables**

For papers **BS1, BS2a, BS3, BS3a and BS4 only**, 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 fx350TL, fx-82, fx-83 (with any suffix, such as ES, MS), fx-85 (with any suffix, such as ES, MS), FX-991(with any suffix such as ES, MS), fx-992 S, fx-570 ES,  
Hewlett Packard hp 9s, hp 10s, hp 30s,  
Sharp EL-530 LB, EL-520, EL-531 (with any suffix),  
Texas Instruments TI 30X (and any suffix), TI 36X (and any suffix).

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

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