

# Final Honour School of Physics

## Examination Conventions in June 09

### Marking

Each paper will be marked numerically, with a maximum mark of 100 for all papers except Short Options, which will be out of 50. In general Examiners will mark the script only until the number of questions specified in the rubric has been marked, any other answers being treated as rough work. Consequently, if you do attempt more than the specified number of questions, you should decide which attempts are the weakest and turn them in amongst the "rough work" at the end of your script.

It is good practice to start each question (other than Section A questions on A papers) with a new booklet. Avoid interleaving fragments of different questions in one booklet, since then there is a real danger that part of a question goes unmarked - bear in mind that different questions on a paper may be marked by different Examiners.

The effects of a particular **A paper** proving excessively easy or difficult will be ameliorated by scaling the marks for the paper to a mean mark of 65 by a quadratic algorithm that leaves 0 and 100 invariant.

Scaling of marks on the **B papers** is complicated by the fact that few if any students will sit all four papers, and the mean calibre of the candidates who sit a particular paper might be significantly different from that of those who sit another paper. In these circumstances it would be unfair to scale marks such that the mean mark on every paper is 65. Therefore the marks on each paper will be scaled quadratically to a mean that is chosen for each paper such the total discrepancy  $D = \sum_{\text{candidates}} \sum_{\text{papers } i,j} (M_i - M_j)^2$  is minimized subject to the constraint that the mean mark over all scripts on all B papers is 65. Here  $M_i$  and  $M_j$  are the scaled marks of a given candidate in papers  $i$  and  $j$ . In last year's papers, the resulting mean marks were 65.04, 64.66, 63.06 and 74.14 for the four papers B1 to B4, respectively.

The marks of **C papers** will be scaled relative to the performance in the B papers: after scaling with the quadratic algorithm, the mean mark on a given paper will be the mean in the B papers of the students taking this option. BA project reports and BA essays will be marked out of 100 with no scaling. MPhys project reports will be marked out of 100 and the marks scaled to the target. In the event of there being evidence that some Examiners or Assessors are harder markers than others, quadratic scaling may be used to align their mark scales with those of more generous markers. When permission has been granted to replace a paper from the Physics FHS by an equivalent paper from another FHS, the mark used will be the one scaled to a mean of 65 by the Examiners of that FHS.

### Checking of Marks

Papers are not generally double-marked, but every paper is centrally checked that (a) every page has been scanned by the marker, that (b) the marks noted in the margin were summed up and entered correctly on the cover sheet, and that (c) these had been entered correctly on the spreadsheets. In addition, the papers of candidates near class boundaries are specially examined. The MPhys projects, as well as the BA projects/essays, are marked independently by two markers; in cases where there are

significant discrepancies between the markers (even after the MPhys viva), the sources of the discrepancies are identified and, if deemed appropriate, the marks are adjusted in consultation with the markers.

## Assessment of Practical Work

Practical marks are given through the following scheme. In each of Parts A and B, a total of **50** marks are available as follows:

	Part A	Part B
Completing Experiments <sup>1</sup>	15	15
Assessed Practical <sup>2</sup>	20	20
Oral Skills	15	-
Written Skills <sup>3</sup>	-	15

### Notes:

**1 15 marks** for completing all experiments (S). Failure to complete the practical quota will attract the following penalty: (a) A penalty of 5 marks will be deducted for each missed two-day experiment. (b) If more than 3 two-day experiments are missed, the Examiners may penalize the student by lowering the final degree by one class.

**2 20 marks** awarded by the Senior Demonstrator based on the content of the student's logbook and the quality of the account submitted of a practical that was chosen at random. The marks will be based on the content of the logbook and the understanding of the experiment demonstrated by the student.

**3** BA students and MPhys students have 1 practical write-up.

More detail about practical work is published in the *Practical Course Handbook*. S+ marks will not affect the assignment of Classes, but will affect the award of practical prizes and commendations by the Examiners.

It is important that students **consult their tutors early** in the event of difficulty with practical work.

## Assessment of Essays and Projects ([MPhys Project Assessment Procedure from HT 2008](#))

Project reports for either the BA or MPhys degrees will be independently graded by two readers: the BA projects/essays will generally be graded by a junior (expert) assessor and a senior assessor (examiner), while the MPhys projects will generally be graded by a Senior and a Junior Assessor, who are members of the department's Project Assessment Committee. The Senior Assessor will generally work in a different area of physics from the subject of the report, while the Junior Assessor will be chosen to have more specialist knowledge. Copies of the report form on which they will grade each report are available on the Examination Matters webpages. From these forms you can see what the criteria are and how much weight will attach to each. Before entering grades, the readers will read the Supervisor's report on the project to learn what special difficulties were encountered, the extent of the initiative shown by the candidates, and so on. In addition, MPhys students will meet the two assessors marking their reports to discuss these in the middle of Trinity term (presently

scheduled for early in week 5). The sole purpose of this meeting is to help the assessors with assessing the students' contribution to and understanding of the project and, most importantly, to help clarify any issues that the assessors have after having read the written report. The meeting will last about 20 min and will be rather informal. It will not require the preparation of a special presentation; indeed no visual aids, such as overhead slides or a data projector, will be allowed. The final assessment will be based entirely on the written report.

For MPhys projects the final project mark will be made up by adding

0.6 times the Senior Assessor's total

0.4 times the Junior Assessor's total.

For BA projects/essays, the Examiners' marks will be weighted equally.

## Late Submission of Work

Work that is submitted after the deadline for submission will only be considered if the candidate has obtained permission from the Proctors for it to be considered. In such cases the work will normally attract a penalty of 10% of the maximum mark attainable from the work for being late, and an additional 2% for each day of lateness. This penalty may be reduced or waived, in particular, when, in view of exceptional circumstances, the Proctors have given prior permission for late submission. Therefore if special factors make it likely that you will not make a deadline, you should ensure that well before the deadline you follow the procedure laid out in the Exam Decrees to seek Proctorial permission to submit late.

## Weightings of Papers and Assignment of Classes

After Part B of the BA or Part C of the MPhys, the scaled marks scored on papers, projects, practicals, etc., are added up after multiplication by the following weightings:

<b>BA Course</b>	
Each Part A paper (3)	0.75
Part A Short Option	0.375
Part A full practicals (or Part A half practicals 0.375 plus second short option 0.375)	0.75
Each Part B paper (2)	1.25
Part B Short Option	0.50
Part B practicals or second short option	0.50
BA Project/Essay	0.75

<b>MPhys Course</b>	

Each Part A paper (3)	0.70
Part A Short Option	0.35
Part A practicals (or Part A half practicals 0.35 plus second short option 0.35)	0.70
Each Part B paper (3 or 4)	1.00
Part B Short Option	0.50
Part B practicals (or Part B half practicals 0.5 plus second short option 0.5)	1.00
Each Part C Major Option paper (2)	1.50
MPhys Project	1.75

Thus, for example, full marks in A1 of the MPhys will yield 70 marks, while full marks in a Part B short option will yield  $0.5 \times 50 = 25$  marks.

Candidates offering 4 B papers can score more marks than those offering 3 B papers, a short option and practicals. Such variations in the maximum number of marks candidates could have scored during their course are handled by finally ranking candidates by the ratio of marks scored to the maximum that the candidate could have scored.

Preliminary class boundaries will be drawn on the ranked list of candidates at locations that are not predefined, but determined by looking for evident break points in the distribution of marks. However, this table (the USM scheme) gives approximate target relations between percentage marks and FHS class.

<b>Mark</b>	> 70	60-70	50-60	40-50	30-40	<30
<b>Class</b>	I	II.1	II.2	III	Pass	Fail

After preliminary class boundaries have been drawn, the Examiners will consider whether unusual circumstances, such as a relevant medical certificate, warrant moving particular candidates up or down the ranking and may make small adjustments to the maximum marks such candidates might have achieved to achieve this objective. However, candidates should note that the Proctors instruct (para 30.5 of Notes & Guidance) that

*"Medical certificates are not provided with the expectation that Examiners may infer how a candidate might have performed if unaffected. The Examiners have a duty to judge performance and not undemonstrated capability, of which they can form no opinion as Examiners. If a candidate has been working below his or her best ability or approaches the examination in this condition, it is for the candidate to choose between going ahead with the possibility of impaired performance or withdrawing until fully fit."*

**The proportions of candidates awarded the various classes are given below:**

BA degree						
Year	1	2.1	2.2	3	P	F
2008	15.7	51.4	25.7	7.1	0	0
2007	11.7	36.7	38.3	10.0	3.3	0
2006	23.7	23.7	26.3	18.4	7.9	0
2005	8.8	26.5	35.3	23.5	5.9	0
2004	20.5	46.2	25.6	7.7	0	0
2003	10	66.7	6.7	10	6.7	0
2002	12.5	40	30	12.5	5	0
2001	14.6	53.7	26.8	4.9	0	0

MPhys					
Year	1	2.1	2.2	3	P/F
2008	45.6	52.4	1.9	0	0
2007	37.6	38.5	19.7	4.3	0
2006	39.5	41.9	15.3	3.2	0
2005	35.7	47.6	11.9	4.8	0
2004	36.7	46.7	12.5	4.2	0
2003	34.9	53.2	6.3	5.6	0
2002	31.1	51.6	15.6	1.6	0
2001	35.8	53.3	8.3	2.5	0

In the assignment of the final class for a given Part A cohort, the examiners aim to ensure that there should be no in-built advantage in final class by choosing the MPhys course over the BA course, or vice versa.

## Interim Results

After each part of the examination, your tutor will be told the scaled marks that you obtained in each paper and your overall rank amongst candidates in that part. This information will not be published, but will be provided to enable your tutor to give you some confidential feedback and guidance.

## Final Classification Mark

As of 2009, students in their last year will be provided with a classification mark that strictly adheres to the USM scheme shown in the table above. This is achieved by a piecewise linear mapping of the percentage class boundaries onto the USM scheme.

## Eligibility for the MPhys Course

On the basis of the Part A marks, the Examiners will publish a list of those students eligible to proceed to the MPhys course. The standard required is the equivalent of a 2.1 class or better.

Should you be undecided as to which course you should be doing, then in the first

instance discuss it with your college tutor. It is not necessary to make up your mind until the start of your third year; however, to avoid having to apply for additional Local Education Authority (LEA ) funding at a later stage, it is generally advisable to register initially for the 4-year MPhys course.

## Prizes

A number of prizes are awarded annually for excellence in various aspects of the BA and MPhys final examinations:

- o Scott Prizes for overall best performances (separately for BA and MPhys)
- o Gibbs Prize for excellence in the MPhys examination
- o Gibbs Prize for the best use of experimental apparatus in the MPhys course
- o The Gibbs prize for practical work in Parts A and B
- o Various project prizes for MPhys Projects (some of these are sponsored by external bodies)
- o A BA prize for the best project or essay
- o A Gibbs Prize for the best performance in the Physics Department's Speaking Competition held in the 2<sup>nd</sup> year