



EXTERNAL EXAMINER ANNUAL REPORT FORM

Guidance notes are available to support the completion of this Report and are available at <http://learning.cf.ac.uk/quality/review/external-examiners/reports/>.

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|--|--------------------------------------|-----------------|----------------------------|
| | For completion by External Examiner: | | |
| Name of External Examiner: | Caroline Clewley | | |
| Home Institution / Employer of External Examiner: | Imperial College London (Physics) | | |
| Programme and / or Subjects Covered by this Report | MSc Physics | | |
| Academic Year / Period Covered by this Report: | 2015-2016 | Date of Report: | 21 st June 2016 |

For completion by External Examiner in the spaces provided. Please extend spaces where necessary. **Please note this Form will be published online and should not make any reference to any individual students or members of staff.**

1. Programme Structure

The MSc programme is similar to last year in that it comprises two core taught modules of 20 credits each: one in the Autumn semester and one in the Spring semester. These modules are designed specifically for the MSc students. The core courses are supplemented by 8 elective modules of 10 credits each, which are shared with the MPhys students and spread over the two semesters. Students who have passed their taught modules undertake a 60-credit research project over the summer.

It is clear that many students on the Physics MSc are driven and work very hard. In the first semester the combination of weekly assignments on the core module and further coursework on their electives leads to an overload at times when deadlines clash. This is due to the fact that the electives are not designed with the MSc students in mind, but rather for the Physics undergraduates. The core module in the first semester is rated very highly by the students, but clearly is a lot of work (according to students' own estimates they spend 4 – 5 times as much time on the 20-credit core module than on 10-credit electives). However, the content of the core module is highly relevant as judged both by me and the students themselves, and I do not recommend significantly cutting the content. Instead I would advise considering increasing the allocated credits to 30 and only requiring another 30 credits in electives in the autumn semester. This would likely alleviate some of the time pressure and deadline clashes in this first semester.

2. Academic Standards

The elective exams have previously been seen by other external examiners and judged to be of appropriate academic standard. Having looked through the students' work I am satisfied that this is clearly the case. The number of credits of the electives seems to represent the workload well.

The coursework submissions in the core modules are of a good standard and appropriate for an MSc programme. The student projects often contain an element of novel research and go beyond a repetition of work done by previous students. This is good practice and a source of satisfaction to the students – they are in this way inducted in the community of scientific practice rather than being treated as novice learners.

3. The Assessment Process

The assessment process of the core modules is very well designed and applied. The assignments are well aligned with the learning objectives and very clear assessment criteria and grade descriptors are available for students and staff alike. Together with timely and constructive feedback, this remains a strength of the programme that is highly valued by the students.

The core course in the autumn semester has many assignment hand-ins per week; this leads to a high work load. Each of the assignments serves a useful purpose, but as mentioned before this module could benefit from reweighting.

The core assignments in the spring term are of a different nature and mostly build up towards the students' summer project. This structure clearly signposts the value of the skills gained to the students, which makes the assessment highly relevant. However, the grant application is somewhat of an exception to this. Although upon reflection the students do see the value in this, at the time of assessment the assignment seemed less relevant, although weighted relatively highly. Rebalancing the weighting for the assignments, or making the grant proposal more directly related to the students' current academic career stage (e.g. could they write a grant proposal based on their project?) is desirable.

Looking ahead, the summer projects' assessment has changed somewhat this year by removing the risk assessment and creating a scientific merit assessment category. This appears an improvement, provided that the scientific merit marks are awarded by a member of staff who is an expert in the field, as they will be able to judge this category much more accurately than someone with a deviating research interest.

4. Year-on-Year Comments

Last year a number of students chose the programme specifically with the idea of undertaking an industry project; these were disappointed because there were no such projects available. This year there still were no industry projects available, but the students seemed to have chosen the programme for different reasons (mainly as a stepping stone to a PhD) and it therefore was not a problem. This

may be the result of advertising the programme differently for this year's cohort, which has led to the students' expectations being better aligned with what the programme has on offer.

5. Preparation / Induction Activity (for new External Examiners only)

N/A

6. Noteworthy Practice and Enhancement

Overall the MSc programme is rated very highly by the students. Particular plaudits go to the quality of the feedback and the well thought-out assessment criteria for the assignments in the core modules. The main difficulties for students arise with respect to the electives. Some electives have a fairly high load of coursework, which at times clashes with the deadlines for the core modules. Others require a good working knowledge of Python. Both these issues arise because the electives are principally designed for the Cardiff Physics undergraduates, rather than with the MSc students in mind (which form a much smaller cohort). The choices students make with regards to their electives can affect the degree of difficulty of their overall programme significantly, partly because the electives are not scaled to account for differences in difficulty. This latter point was particularly painful for the MSc students in the case of one elective that had a very low average: it was not scaled because the average was above the 40% pass mark for the undergraduates, but it was below the 50% pass mark for the MSc students. It would be fairer overall if electives were designed to be of similar difficulty, and if this were enforced in some way (not necessarily through scaling: 2nd-markers can help adjust for overly easy or hard examinations for example).

My second recommendation is to provide students with Python resources as preparation for their course over the summer, and managing students expectations by explicitly telling them they need to be familiar with basic Python when they start their MSc course. The MSc students come in with a wide range of programming backgrounds (e.g. C, Fortran, Matlab) and therefore often run into trouble in coursework where Python is expected. Additional resources will avoid problems in the electives that require Python knowledge (and probably help students in their projects later).

Finally, it remains for me to note that even with the increased cohort size this year, the students expressed a very good sense of community on the course. They all work together in their dedicated space, and benefit greatly from the ever-present support of the course director. It is beyond doubt that the students are in very good hands.

7. Comments on the Examination of Master's Dissertations (External Examiners for postgraduate Master's Programmes only, see also 9.23-9.29 below)

The students have only just started their research project and have not yet written their dissertation.

8. Appointment Overview (for retiring External Examiners only)

N/A

9. Annual Report Checklist

Please include appropriate comments within Sections 1-8 above for any answer of 'No'.

Additional notes:

9.17: I take this to mean any examination board meetings in this academic year to date.

9.23 onwards: I have answered these questions in relation to the dissertation stage for 2015-2016, as my previous report was written before that time.

| | | Yes (Y) | No (N) | N/A (N/A) |
|--|---|------------|-----------|--------------|
| Programme/Course Information | | | | |
| 9.1 | Did you receive sufficient information about the Programme and its contents, learning outcomes and assessments? | Y | | |
| 9.2 | Were you asked to comment on any changes to the assessment of the Programme? | Y | | |
| Draft Examination Question Papers | | | | |
| 9.3 | Were you asked to approve all examination papers contributing to the final award? | | N | |
| 9.4 | Were the nature, spread and level of the questions appropriate? | Y | | |
| 9.5 | Were suitable arrangements made to consider your comments? | Y | | |
| Marking Examination Scripts | | | | |
| 9.6 | Did you receive a sufficient number of scripts to be able to assess whether the internal marking and classifications were appropriate and consistent? | Y | | |
| 9.7 | Was the general standard and consistency of marking appropriate? | Y | | |
| 9.8 | Were the scripts marked in such a way as to enable you to see the reasons for the award of given marks? | Y | | |
| 9.9 | Were you satisfied with the standard and consistency of marking applied by the internal examiners? | Y | | |
| 9.10 | In your judgement, did you have the opportunity to examine a sufficient cross-section of candidates' work contributing to the final assessment? | Y | | |
| Coursework and Practical Assessments | | | | |
| 9.11 | Was the choice of subjects for coursework and / or practical assessments appropriate? | Y | | |
| 9.12 | Were you afforded access to an appropriate sample of coursework and / or practical assessments? | Y | | |
| 9.13 | Was the method and general standard of assessment appropriate? | Y | | |
| 9.14 | Is sufficient feedback provided to students on their assessed work? | Y | | |
| Clinical Examinations (if applicable) | | | | |
| 9.15 | Were satisfactory arrangements made for the conduct of clinical assessments? | | | N/A |

| | | Yes (Y) | No (N) | N/A (N/A) |
|--|---|------------|-----------|--------------|
| Sampling of Work | | | | |
| 9.16 | Were you afforded sufficient time to consider samples of assessed work? | Y | | |
| Examining Board Meeting | | | | |
| 9.17 | Were you able to attend the Examining Board meeting? | | N | |
| 9.18 | Was the Examining Board conducted properly, in accordance with established procedures and to your satisfaction? | | | N/A |
| 9.19 | Cardiff University recognises the productive contribution of External Examiners to the assessment process and, in particular, to the work of the Examining Board. Have you had adequate opportunities to discuss the Programme and any outstanding concerns with the Examining Board or its officers? | Y | | |
| Joint Examining Board Meeting (if applicable) | | | | |
| 9.20 | Did you attend a Composite Examining Board, i.e. one convened to consider the award of Joint Honours degrees? | | N | |
| 9.21 | If so, were you made aware of the procedures and conventions for the award of Joint Honours degrees? | | | N/A |
| 9.22 | Was the Composite Examining Board conducted according to its rules? | | | N/A |
| Examination of Master's Dissertations (if applicable) | | | | |
| 9.23 | Did you receive a sufficient number of Dissertations to be able to assess whether the internal marking and classifications were appropriate and consistent? | Y | | |
| 9.24 | Was the sample in accordance with the University's sampling guidelines (guidelines provided below)? | Y | | |
| 9.25 | Were you satisfied with the standard and consistency of marking applied by the Internal Examiners? | Y | | |
| 9.26 | Were you able to attend the Master's Degree (Dissertation) Stage Examining Board? | Y | | |
| 9.27 | If so, was the Examining Board conducted properly and in accordance with established procedures? | Y | | |
| 9.28 | Were the schemes for marking and classification correctly applied? | Y | | |
| 9.29 | Were the standards of the awards recommended appropriate? | Y | | |

Please return this Report, preferably in a Microsoft Word format, by email to:

ExternalExaminers@cf.ac.uk

Your fee and expenses claim form and receipts, should be sent electronically to the above email address or in hard copy to:

External Examiners, Registry, Cardiff University, McKenzie House, 30-36 Newport Road, Cardiff, CF24 0DE

SAMPLING OF TAUGHT MASTER'S DISSERTATIONS BY EXTERNAL EXAMINERS

External Examiners shall be expected to see prescribed numbers and ranges of Dissertations, but not to mark them, on the following basis:

At least 10% of Dissertations for a postgraduate taught Master's Programme, or a minimum of 10 (whichever is the higher figure) must be seen by the External Examiner(s). Where the total number is less than 10, all Dissertations must be seen by the External Examiner(s) #.

Dissertations seen by External Examiners should include examples from across the whole range of achievement (i.e. Pass with Distinction, Pass, Fail).

External Examiners will retain the right to see other Dissertations at random.

Where more than one External Examiner is appointed on a Programme, at least 10% of Dissertations, or a minimum of 10 (whichever is the higher figure), should be seen collectively by the External Examiners.