

The University of Leeds
EXTERNAL EXAMINER'S REPORT
ACADEMIC YEAR: 2014– 2015

Part A: General Information**Subject area and awards being examined**

Faculty / School of:	Physics and Astronomy
Subject(s):	<i>Physics</i>
Programme(s) / Module(s):	Physics, Physics with Astrophysics, Physics with Nanotechnology, Theoretical Physics. Medical Physics
Awards (e.g. BA/BSc/MSc etc):	BSc, MPhys

Name and home Institution / affiliation of Examiner**Completed report**

The completed report should be attached to an e-mail and sent as soon as possible, and no later than six weeks after the relevant meeting of the Board of Examiners, to exexadmin@leeds.ac.uk.

Alternatively you can post your report to: **Head of Quality Assurance**
Room 12:81, EC Stoner Building
The University of Leeds, Leeds LS2 9JT

Part B: Comments for the Institution on the Examination Process and Standards**Matters for Urgent Attention**

If there are any areas which you think require urgent attention before the programme is offered again please note them in this box

None.

Only applicable in first year of appointment

Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?

N/A

For Examiners completing their term of appointment

Please comment on your experience of the programme(s) over the period of your appointment, remarking in particular on changes from year to year and the progressive development and enhancement of the learning and teaching provision, on standards achieved, on marking and assessment and the procedures of the School

N/A

Standards

1. Please indicate the extent to which the programme Aims and Intended Learning Outcomes (ILOs) were commensurate with the level of the award

- *The appropriateness of the Intended Learning Outcomes for the programme(s)/modules and of the structure and content of the programme(s);*
- *The extent to which standards are appropriate for the award or award element under consideration.*

The degree schemes available at Leeds cover a broad range of undergraduate physics, with a range of available options. The aims and ILOs are appropriate and commensurate with the programmes offered.

2. Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?

- *The comparability of the programme(s) with similar programme(s) at other institutions and against national benchmarks and the Framework for Higher Education Qualifications.*

The aims and ILOs are suitable and comparable with other Russell Group universities. Both the examination papers and the general performance of students are similar to those experienced at other comparable institutions. The courses are accredited by the Institute of Physics.

3. Please comment on the assessment methods and the appropriateness of these to the ILOs

- *The design and structure of the assessment methods, and the arrangements for the marking of modules and the classification of awards;*
- *The quality of teaching, learning and assessment methods that may be indicated by student performance.*

The examination papers and continuous assessment elements I looked at were appropriate. The balance between exam and continuous assessment contributions were acceptable. Classification of awards and the exam board was handled correctly. Students generally performed well, in line with my experience at <>.

4. Were students given adequate opportunity to demonstrate their achievement of the Aims and ILOs?

- *The academic standards demonstrated by the students and, where possible, their performance in relation to students on comparable courses;*
- *The strengths and weaknesses of the students as a cohort.*

The examination papers were appropriate and generally effective at probing the students' understanding and ILOs. I would recommend having more 'unseen' parts to questions, awarded 4-5 marks at the end of questions to test overall understanding of physics. A small number of papers seemed rather predictable based on previous years' papers. The section A and B structure is a helpful one in this regard.

5. For Examiners responsible for programmes that include clinical practice components, please comment on the learning and assessment of practice components of the curriculum

N/A

6. Please comment on the nature and effectiveness of enhancements to the programme(s) and modules since the previous year

It would be particularly helpful if you could also identify areas of good practice which are worthy of wider dissemination.

There were few changes from last year. The balance of marks awarded for BSc and MPhys projects between Supervisors and Assessors was adjusted following recommendations from examiners last year.

7. Please comment on the influence of research on the curriculum and learning and teaching

This may include examples of curriculum design informed by current research in the subject; practice informed by research; students undertaking research.

There are strong connections between research strengths and some of the taught modules. In my area of expertise relating to <> and <>, there is a strong synergy between teaching and research, which is welcomed.

8. Where the programme forms part of an Integrated PhD, please comment on the appropriateness of the programme as training for a PhD

N/A

For Examiners involved in mentoring arrangements

9. If you have acted as a mentor to a new External Examiner or have received mentor support please comment here on the arrangements

The arrangements with <> have been fine. We consulted at a few points during the year by email. The practice of having the two external examiners attend on different dates is slightly unfortunate in that there is no opportunity to meet and discuss face to face.

The Examination/Assessment Process

10. The University and its Schools provide guidance for External Examiners as to their roles, powers and responsibilities. Please indicate whether this material was sufficient for you to act effectively as an External Examiner.

Whether External Examiners have sufficient access to the material needed to make the required judgements and whether they are encouraged to request additional information.

The guidance was fine.

11. Did you receive appropriate documentation relating to the programmes and/or parts of programmes for which you have responsibility, e.g. programme specifications or module handbooks, marking criteria?

The coherence of the policies and procedures relating to External Examiners and whether they match the explicit roles they are asked to perform.

Yes. <> and colleagues were very helpful in providing information efficiently on request.

Graphical representation of the mark distribution for each module, requested last year, was very helpful in assessing overall performance.

12. Were you provided with all draft examination papers/assessments? Was the nature and level of the questions appropriate? If not, were suitable arrangements made to consider your comments?

Yes, these were provided. The level of questions was appropriate in papers generally – some requiring revision.

There were fewer minor typographical errors than last year.

Generally, the few issues that arose involved papers where several staff contributed questions. I have recommended to the department that there is greater clarity regarding the individual responsible for the correctness of each examination paper and the second person responsible for checking the paper.

13. Was sufficient assessed / examined work made available to enable you to have confidence in your evaluation of the standard of student work? Were the scripts clearly marked/annotated?

Yes, all papers were made available. Scripts were clearly annotated and checking procedures were satisfactory.

14. Was the choice of subjects for dissertations appropriate? Was the method and standard of assessment appropriate?

There was a comprehensive range of final year projects. Assessment was good. The school might want to consider whether there is more scope for employing the full dynamic range at the higher end.

15. Were the administrative arrangements satisfactory for the whole process, including the operation of the Board of Examiners? Were you able to attend the meeting? Were you satisfied with the recommendations of the Board?

The arrangements were good and well-administered by well-motivated staff. The Board of Examiners was conducted well with the overall classifications as well as individual cases handled appropriately.

16. Were appropriate procedures in place to give due consideration to mitigating circumstances and medical evidence?

Yes, the procedures used by the department are fine, in line with practice elsewhere.

Other comments

Please use this box if you wish to make any further comments not covered elsewhere on the form

None.

20 November 2015

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Dear <<>>,

Thank you very much for your examiner's report, which was discussed at a recent School Taught Student Education Committee meeting. We are very pleased that you consider that our assessment methods and standards are appropriate.

We note that you have recommended (under point 4 – Were students given adequate opportunity to demonstrate their achievements of the Aims and ILOs?) that we increase the proportion of “unseen” parts to the B-questions to make these less predictable. To this end we have instituted a revised procedure for checking exam papers, whereby academic staff will meet and go through the questions together. They will look at this aspect of the exam questions, and the meetings should also help to ensure that your second recommendation (point 12 – Was the nature and level of the questions appropriate?) is followed. The open forum will ensure that all staff who contribute questions to joint exam papers are involved in the checking.

University requirements that an external examiner sign off both module mark sheets and classification sheets unfortunately make it difficult to have both examiners present at the same time (your point 9) – unless one would like to visit twice in the space of a week!

We would like to thank you for your efforts to maintain and improve the standards of our assessment process, and look forward to your continuing assistance.

Best wishes,

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Head of School

The University of Leeds
EXTERNAL EXAMINER'S REPORT
 ACADEMIC YEAR: 2014– 2015

Part A: General Information**Subject area and awards being examined**

Faculty / School of:	Physics and Astronomy
Subject(s):	<i>Astrophysics, Physics, Maths</i>
Programme(s) / Module(s):	Physics, Physics with Mathematics, Physics with Astrophysics, Physics with Nanotechnology, Physics with Medical Physics, Theoretical Physics
Awards (e.g. BA/BSc/MSc etc):	BSc, MPhys

Name and home Institution / affiliation of Examiner**Completed report**

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Part B: Comments for the Institution on the Examination Process and Standards**Matters for Urgent Attention**

If there are any areas which you think require urgent attention before the programme is offered again please note them in this box

No.
 I have a number of recommendations (see below) that will hopefully be addresses before next year's examinations take place.

Only applicable in first year of appointment

Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?

I was provided with the External Examiners' reports for the last few years.

For Examiners completing their term of appointment

Please comment on your experience of the programme(s) over the period of your appointment, remarking in particular on changes from year to year and the progressive development and enhancement of the learning and teaching provision, on standards achieved, on marking and assessment and the procedures of the School

N/A

Standards

1. Please indicate the extent to which the programme Aims and Intended Learning Outcomes (ILOs) were commensurate with the level of the award

- *The appropriateness of the Intended Learning Outcomes for the programme(s)/modules and of the structure and content of the programme(s);*
- *The extent to which standards are appropriate for the award or award element under consideration.*

The intended learning outcomes are highly appropriate for the BSc and MPhys award levels, and contain a suitably comprehensive coverage of the subject areas. In addition, the structure and content of the modules is what I would expect for the awards.

2. Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?

- *The comparability of the programme(s) with similar programme(s) at other institutions and against national benchmarks and the Framework for Higher Education Qualifications.*

I can compare the aims and ILOs with those that are employed at my home institution, and also with other institutions where I have had involvements as an external examiner, and I can confirm that there are strong similarities in content and academic level. I therefore believe that they fully meet the expectations of national benchmarks.

3. Please comment on the assessment methods and the appropriateness of these to the ILOs

- *The design and structure of the assessment methods, and the arrangements for the marking of modules and the classification of awards;*
- *The quality of teaching, learning and assessment methods that may be indicated by student performance.*

The assessment methods (examinations, coursework, projects etc.) seem very appropriate and suitably testing, and the procedures for marking thorough and fair. However, I have some concerns about the application of progression rules and the impact that this may have on the classification of awards.

Firstly, as this caused some concern at the Board of Examiners' meeting, I recommend that adequate checks and double marking should be in place for those students whose marks fall just short of the pass mark boundary (i.e. 38-39%) and applied *before* the Examiners' meetings(s).

Secondly, as students are normally registered jointly for the integrated BSc/MPhys degrees, the rules for progression are different to many other institutions in that the main discriminator for progression into the MPhys stream comes at the end of the second year, rather than at the end of the third year. This takes the form of a 60% bar, with a 55-59% discretionary margin. I found the number of third class awards and failures in the final years rather disturbing. To tackle this issue I recommend, at the very least, that very careful policing is employed in the application of the progression criteria. To get to the root of this I would like to know, for example, how those students who obtained 55-59% at the end of year 2 (but who are granted permission to progress) subsequently fare.

Directly relating to the above, it would be very helpful to have some statistics of (e.g.) the correlations between the coursework and examined components of the modules, progression rates, and the historical performance trajectories for those students who are on the borderline for consideration for progression etc.

4. Were students given adequate opportunity to demonstrate their achievement of the Aims and ILOs?

- *The academic standards demonstrated by the students and, where possible, their performance in relation to students on comparable courses;*
- *The strengths and weaknesses of the students as a cohort.*

Whilst I was happy with the average overall performance of the student cohort, which indicated the overall success of the teaching programme, I found the distribution of marks in the various modules to be rather strange, with most being described either by a monotonic tail off from a dominant classification of first class, or a relatively flat distribution (again, with a large number of firsts, but also a large number of thirds and fails – as commented on above). Overall there were remarkably few 'normal' distributions. Taken at face value the large proportion of firsts (especially in Year 1) could imply that the examinations are perhaps not sufficiently testing. I ask that this issue be investigated.

5. For Examiners responsible for programmes that include clinical practice components, please comment on the learning and assessment of practice components of the curriculum

N/A

6. Please comment on the nature and effectiveness of enhancements to the programme(s) and modules since the previous year

It would be particularly helpful if you could also identify areas of good practice which are worthy of wider dissemination.

This is hard to assess as this is my first year as external examiner and I did not have access to examination papers from previous years.

I request that external examiners be given access to examination papers for the last few years, both so as to check on the originality of the exams and also to monitor any syllabus variations that have taken place.

7. Please comment on the influence of research on the curriculum and learning and teaching

This may include examples of curriculum design informed by current research in the subject; practice informed by research; students undertaking research.

There is clear evidence that aspects of the lecture programmes are kept abreast of recent research developments. These are, of course, essentially driven by the research interests and expertise of the lecturing staff – and are entirely healthy; especially in levels 3-5.

Obviously, the projects contain very significant elements of original research.

8. Where the programme forms part of an Integrated PhD, please comment on the appropriateness of the programme as training for a PhD

N/A

For Examiners involved in mentoring arrangements

9. If you have acted as a mentor to a new External Examiner or have received mentor support please comment here on the arrangements

N/A.

It is, perhaps, a little disappointing that the two external examiners do not get a chance to meet each other at any stage in the process.

The Examination/Assessment Process

10. The University and its Schools provide guidance for External Examiners as to their roles, powers and responsibilities. Please indicate whether this material was sufficient for you to act effectively as an External Examiner.

Whether External Examiners have sufficient access to the material needed to make the required judgements and whether they are encouraged to request additional information.

Yes, the information that was provided was thorough and comprehensive.

11. Did you receive appropriate documentation relating to the programmes and/or parts of programmes for which you have responsibility, e.g. programme specifications or module handbooks, marking criteria?

The coherence of the policies and procedures relating to External Examiners and whether they match the explicit roles they are asked to perform.

Yes, I was provided with all of the necessary background material, including descriptions of the programmes and modules, progression criteria, assessment procedures etc. If there was any perceived ambiguity or uncertainty in the information, the School provided additional information promptly, on request.

12. Were you provided with all draft examination papers/assessments? Was the nature and level of the questions appropriate? If not, were suitable arrangements made to consider your comments?

Yes, I was provided with draft papers and model solutions. I was generally very happy with these and, where appropriate, any suggestions and comments that I made were acted upon accordingly.

I am satisfied that examiners responded to my suggestions for corrections and amendments to their papers and model solutions, but I would have liked to have seen their responses (even just in summary form) *in advance* of my visit.

13. Was sufficient assessed / examined work made available to enable you to have confidence in your evaluation of the standard of student work? Were the scripts clearly marked/annotated?

Yes. Although it was not possible to examine *all* of the scripts – simply because it is not feasible to examine such a large amount of paperwork in a short time – I had access to all of the examined material and was able to assess the standards and quality of marking etc. I was generally very impressed in all respects, although I do have a few reservations concerning the assessment of the projects (see below).

14. Was the choice of subjects for dissertations appropriate? Was the method and standard of assessment appropriate?

The quality and range of subjects that are covered in the final year projects and dissertations is excellent and, in nearly all cases, the students put a lot of work into these studies.

I do, however, have some concerns about the assessment procedure: (i) Whilst the marking looked to be very thorough, evidence of the marking and feedback (via annotation of the scripts) is very variable; there was little sign of this in the project books, whilst some of lab scripts were fully annotated, others had a few comments, and most had none at all. Some degree of uniformity of practice should be adopted. (ii) Regarding the projects, some concern was expressed that individual students may lose out owing to small variations in the relative strictness of different markers. I therefore *strongly* recommend that, in addition to double marking, the marks for all students should be subject to some sort of overall moderation/normalisation.

15. Were the administrative arrangements satisfactory for the whole process, including the operation of the Board of Examiners? Were you able to attend the meeting? Were you satisfied with the recommendations of the Board?

Yes, the arrangements were very well-managed and transparent. The staff in charge of this were highly efficient and helpful. I found it very helpful and informative to attend (as an observer) the Internal Board of Examiners Meeting which helped pre-empt various questions that I had about the assessment procedures. As mentioned in item 9, above, I think it is unfortunate that the two external examiners do not get a chance to meet and confer in person.

16. Were appropriate procedures in place to give due consideration to mitigating circumstances and medical evidence?

It seems that due consideration was given to students with special circumstances. However, I found the procedure somewhat opaque. It is not clear, for example, how the situations are quantified for severity and how that translates to an appropriate level of compensation.

Other comments

Please use this box if you wish to make any further comments not covered elsewhere on the form

Some aspects of the moderation and classification system were quite new and strange to me; such as the fact that to obtain the overall degree classification a choice of *two* year-weighting ratios can be used, whilst the conversion to a '2.0-9.0 scale' seems quite obtuse! However, I can see that these are the accepted norms and am not suggesting that they be challenged.

I was really very surprised to discover that the School has not gone over to the system of fully-anonymous marking that is now pretty much universal practice – especially in the marking of scripts (although not necessarily so in the Board of Examiners' deliberations). I appreciate that – if this is not being dictated at Faculty or University level – then there is not much motivation for change. I think, however, that such directives must surely be on the horizon.

This year, several papers suffered from errors and in three cases these were of a substantial nature. Worse still, in the case of one paper, it seems that one student even sat the wrong exam!! The module conveners/markers dealt with these situations appropriately and no students were disadvantaged, but this is clearly unacceptable. Generally, there was some variation in the quality of the papers that perhaps should be addressed by the allowance of more time for the preparation and vetting of papers. In any case, a stronger system of *final* checks needs to be established before examination papers are published.

20 November 2015

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Dear <<>>

Thank you very much for your examiner's report, which was discussed at a recent School Taught Student Education Committee meeting. We are pleased that you believe that our Aims and Intended Learning Outcomes are highly appropriate and fully meet the expectations of national benchmarks. We also find it encouraging that you consider that our teaching is up-to-date with the latest research developments in physics.

However, we do note your comments and suggestions for changes, and in the light of your report we have established an "Exams Focus Group", which has already met and made recommendations which will lead to significant changes to our examination procedure as of the current academic session 2015-2016. We are confident that these changes will enable us to address your concerns.

1. The checking of exam papers will be carried out by groups consisting of all module team members, year convenors and any other appropriate staff members. Papers will be distributed in advance and read aloud in the meetings. We believe that this will preclude the recurrence of significant errors in exam papers (raised under "other comments").
2. The group checking will also ensure that there is an appropriate level of difficulty of the exam questions and progression of difficulty in the B questions. In this manner the skewed distribution with an inordinately large number of firsts should be avoided (point 4 – Were the students given adequate opportunity to demonstrate their achievement of the Aims and ILOs?).
3. Module leaders will subject papers of students with final module marks of 38% or 39% (48% or 49% for MPhys) to additional scrutiny before the Examiners' meeting (raised as first point under 3 - ...comment on assessment methods..).

You also expressed concern about the assessment of dissertations (point 14). To address this we will encourage more visible marking/annotation of lab books by staff, and conduct independent checking of project report marks before these are made final.

We will in future ensure that the setters' responses to your suggestions are forwarded to you before your visit (point 12), and provide you with examination papers from the previous years during your visit (point 6).

University requirements that an external examiner sign off both module mark sheets and classification sheets unfortunately make it difficult to have both examiners present at the same time (your point 9) – unless one would like to visit twice in the space of a week!

I would like to assure you that the School of Physics and Astronomy does practice anonymous marking in accordance with University of Leeds rules (mentioned under “Other comments”). We do however, permit the students’ names to be displayed in the Board of Examiners meetings.

On behalf of everyone in the School I would like to thank you for your efforts to maintain and improve our examinations procedures and standards.

I look forward to welcoming you to the School again next year.

Best wishes

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Head of School