

Guidance notes are available to support the completion of this Report via the Cardiff University Intranet [here](#) and from [ExternalExaminers@cardiff.ac.uk](mailto:ExternalExaminers@cardiff.ac.uk).

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	For completion by External Examiner:		
Name of External Examiner:	Ben Maughan		
Home Institution / Employer of External Examiner:	University of Bristol		
Programme and / or Modules Covered by this Report	Physics undergraduate programmes		
Academic Year / Period Covered by this Report:	2018-19	Date of Report:	24/6/2019

Please complete all information in the spaces provided and submit within **six weeks** of the Examining Board (the dissertation stage Examining Board in the case of postgraduate Master's programmes).

**Please note this form will be published online and should not make any reference to any individual students or members of staff in accordance with the General Data Protection Regulation (2018).**

Please extend spaces where necessary.

**1. Programme Structure** (curriculum design, programme structure and level, methods of teaching and learning)

The Physics degrees at Cardiff University are well designed and structured with a broad range of interesting units, in addition to all of the required core material. The units have a good mixture of assessment, with a balance between exams and continuous assessment. The students receive detailed formative feedback on their coursework. There are some good examples of innovations in teaching, including well-designed multiple choice sections in exams (unusual in Physics) and some creative coursework assignments. The lecture recording technology is also clearly very popular with the students.

**2. Academic Standards** (comparability with other UK HEIs, achievement of students, any PSRB requirements)

The overall academic standard is high across all aspects of teaching and learning, and is comparable with other similar Universities. I would certainly recommend these degrees to potential students.

**3. The Assessment Process** (enabling achievement of aims and learning outcomes; stretch of assessment; comparability of standards between modules of the same level)

The assessment of the coursework and exams was done fairly and carefully and was well-designed to support and measure the achievements of the aims and learning outcomes of modules. Overall, I was really impressed with the quality of the teaching and assessment and feedback that was apparent from the exams, coursework assignments, projects and lab work that I saw - the staff clearly put huge effort into this. That said, I do have some observations and recommendations of areas where improvements can be made.

There was some variation in the apparent difficulty of some of the 3rd and 4th year exam papers, with several appearing to be rather straightforward given the level of assessment. Some exams seemed to be entirely based on the recall of material from notes without presenting students with unseen problems. This makes it difficult to discriminate between students at the top end, where the University assessment criteria require them to demonstrate ability in tackling unseen problems.

For some units this was addressed (to a greater or lesser extent) by including more demanding material in coursework. The concern I have then is that students could collaborate on (or even copy) the solutions to coursework problems. This makes it hard to confidently assess the ability of a particular student to tackle unseen material if it is only found in the coursework.

For a number of modules it was difficult to assess the suitability of the level of assessment of the exam, because there was little or no information provided in the model answers on the nature and difficulty of the questions. This has been requested by previous external examiners more than once, but it is still missing for a number of papers.

I suggest that the exam logs (which are good practice and very helpful) should have checkboxes where the MO or DMO confirm that (i) sufficient guidance on the nature and difficulty of questions is provided in the model answers; and (ii) that the paper contains an appropriate mix of difficulty given the other assessment for that unit.

Exam setters should also be given guidance on the type of commentary to include with the model answers. For example, one-word comments like "calculation" or "application" are not helpful. Comments like "Very similar to a calculation seen in an examples class" or "Application of methods to a new situation" or "Unseen problem that the strongest students should be able to complete" are more helpful.

There were a few examples of coursework where the similarity with other sources as flagged by TurnItIn was higher than I would have deemed acceptable. In some cases I would not classify it as serious plagiarism, but felt it was certainly poor academic practice that should have been flagged and reflected in the mark and feedback. In other cases there was clear plagiarism that had either been missed or not dealt with in a formal and consistent way.

I viewed a range of 3<sup>rd</sup> and 4<sup>th</sup> year projects and was impressed with the range of projects available and the quality of the work done by the students. The project assessment procedure is detailed, and the marks assigned to project work reflected the quality of the projects.

Overall, the assessment criteria, marking schemes and award classifications are all set at the appropriate level.

4. **Examination of Master's Dissertations (if applicable)** (sample of dissertations received, appropriateness of marking schemes, standard of internal marking, classification of awards)

N/A

**5. Year-on-Year Comments**

[Previous External Examiner Reports are available from the Cardiff University Website [here](#).]

As noted above, previous external examiners have requested that guidance on the difficulty of questions is included in the model answers, but this has not been fully addressed. I can only emphasise again how important that is, if the external examiners are to fulfil their roles properly.

6. **Preparation for the role of External Examiner (for new External Examiners only)** (appropriateness of briefing provided by the programme team and supporting information, visits to School, ability to meet with students, arrangements for accessing work to review)

I was provided with all the information I needed when I took up the role and had good support from the School. I very much enjoyed visiting the School and meeting the staff. I did not have the opportunity to meet with any students, but I understand that this is difficult to arrange once the students have completed their exams.

7. **Noteworthy Practice and Enhancement** (good and innovative practice in learning, teaching and assessment; opportunities for enhancement of learning opportunities)

I was impressed with the quality of the multiple choice questions used in several of the exam papers. There were some excellent, innovative coursework assignments, and the use of electronic notebooks for practical work is a very positive development. The opportunity for Astrophysics students to plan and make observations with robotic telescopes is commendable.

8. **Appointment Overview (for retiring External Examiners only)** (significant changes in standards, programme/discipline developments, implementation of recommendations, further areas of work)

N/A

## 9. Annual Report Checklist

Please include appropriate comments within Sections 1-7 above for any answer of 'No'.

		Yes (Y)	No (N)	N/A (N/A)
<b>Programme/Course information</b>				
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		
<b>Commenting on draft examination question papers</b>				
9.3	Were you asked to approve all examination papers contributing to the final award?	Y		
9.4	Were the nature, spread and level of the questions appropriate?	Y (most)	N (a few)	
9.5	Were suitable arrangements made to consider your comments?	Y		
<b>Examination scripts</b>				
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		
<b>Coursework and practical assessments</b>				
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		
<b>Clinical examinations (if applicable)</b>				
9.15	Were satisfactory arrangements made for the conduct of clinical assessments?			N/A
<b>Sampling of work</b>				
9.16	Were you afforded sufficient time to consider samples of assessed work?	Y		
<b>Examining board meeting</b>				

9.17	Were you able to attend the Examining Board meeting?	Y		
9.18	Was the Examining Board conducted properly, in accordance with established procedures and to your satisfaction?	Y		
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		
<b>Joint examining board meeting (if applicable)</b>				
9.20	Did you attend a Composite Examining Board, i.e. one convened to consider the award of Joint Honours degrees?			<b>N/A</b>
9.21	If so, were you made aware of the procedures and conventions for the award of Joint Honours degrees?			<b>N/A</b>
9.22	Was the Composite Examining Board conducted according to its rules?			<b>N/A</b>

Please return this Report, **in a Microsoft Word format**, by email to:  
[externalexaminers@cardiff.ac.uk](mailto:externalexaminers@cardiff.ac.uk)

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

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