

EXTERNAL EXAMINER REPORT FORM 2019

External examiner name:	Jonathan Woolf	
External examiner home institution:	University of Liverpool	
Course(s) examined:	Part C Mathematics Part C Mathematics and Philosophy MSc in Mathematical Sciences (OMMS)	
Level: (please delete as appropriate)	Undergraduate Part C Mathematics Part C Mathematics and Philosophy	Postgraduate MSc in Mathematical Sciences (OMMS)

Please complete both Parts A and B.

Part A					
		<i>Please (✓) as applicable*</i>	Yes	No	N/A / Other
A1.	Are the academic standards and the achievements of students comparable with those in other UK higher education institutions of which you have experience?		Yes		
A2.	Do the threshold standards for the programme appropriately reflect the frameworks for higher education qualifications and any applicable subject benchmark statement? <i>[Please refer to paragraph 6 of the Guidelines for External Examiner Reports].</i>		Yes		
A3.	Does the assessment process measure student achievement rigorously and fairly against the intended outcomes of the programme(s)?		Yes		
A4.	Is the assessment process conducted in line with the University's policies and regulations?		Yes		
A5.	Did you receive sufficient information and evidence in a timely manner to be able to carry out the role of External Examiner effectively?		Yes		
A6.	Did you receive a written response to your previous report?		Yes		
A7.	Are you satisfied that comments in your previous report have been properly considered, and where applicable, acted upon?		Yes		
<p>* If you answer "No" to any question, you should provide further comments when you complete Part B. Further comments may also be given in Part B, if desired, if you answer "Yes" or "N/A / Other".</p>					

Part B

B1. Academic standards

- a. How do academic standards achieved by the students compare with those achieved by students at other higher education institutions of which you have experience?*

The standard of the exam papers set and the scripts and dissertations I reviewed were excellent. They are at least comparable to, and in many cases higher than, those of other UK HEIs of which I have experience.

- b. Please comment on student performance and achievement across the relevant programmes or parts of programmes and with reference to academic standards and student performance of other higher education institutions of which you have experience (those examining in joint schools are particularly asked to comment on their subject in relation to the whole award).*

As one would expect, there was a range of student performance in both the Part C and MSc programmes. However, the overall standard was high and the best undergraduate students are achieving at the level of very strong MSc students or even first year graduate students. In particular, some of the dissertations are very ambitious, tackling technically challenging recent research material and making a good job of doing so. There was a small number of students who performed poorly (on each of the three programmes) but this is unavoidable, and is often down to unfortunate personal circumstances rather than a reflection on the programmes or their entrance standards.

B2. Rigour and conduct of the assessment process

Please comment on the rigour and conduct of the assessment process, including whether it ensures equity of treatment for students, and whether it has been conducted fairly and within the University's regulations and guidance.

The assessment process is carried out with a great deal of rigour and care. I was provided with detailed statistics on all papers taken, and given access to all scripts, mini-projects and dissertations. I would like to thank the administrators and the Chairs of the Boards of Examiners for their help.

The provision of information on how marks for mini-projects and dissertations have been reconciled was much improved this year. I also noted that many dissertations included a detailed log of meetings between student and supervisor which seemed to me very good practice, and very useful for markers.

The exam boards were very well-conducted, with due regard to the relevant conventions and procedures and attention given to each unit and, where necessary, each individual student. Where extra information was required to make an appropriate decision it was always available and was consulted. I would also like to commend the examiners for their willingness to explain their procedures and the rationale for them, and their openness in discussing them.

The scaling process for converting raw marks to USMs is quite involved (see B3) but was carried out very carefully, and always with the aim of ensuring the most equitable result.

B3. Issues

Are there any issues which you feel should be brought to the attention of supervising committees in the faculty/department, division or wider University?

I would like to raise three points for the consideration of the department, and one for the wider University. First those for the department.

1. I was informed that with the advent of the new MSc in Mathematical Sciences (OMMS) the organisation of dissertations for Part C mathematics students has changed. Whereas before they could freely choose a topic and begin work on it over the summer between Parts B and C, now they must choose from a designated list and only begin work in the Michaelmas term. I understand that this is to ensure equity between them and Part C students (who only arrive in the Michaelmas term), but it does seem a shame that the opportunity for highly motivated students to do a more substantial piece of work has been removed. Since Part C and OMMS are different programmes there does seem to be scope to organise the dissertations differently, and account for this with minor differences in the mark schemes / descriptors.
2. As I noted in my 2017-18 report the scaling procedure for converting raw marks to USMs is quite complex, and its reliance on Part B averages has some potential difficulties. In practice the initial automatic scalings are adjusted by hand in the exam meetings using extra information provided by the assessors. Where this information is available, and justified, this seems to work well, but where the assessor does not suggest appropriate borderlines based on their reading of the scripts it is difficult for the meeting to be absolutely confident that it has applied the correct scaling. Therefore I strongly recommend that assessors are required (rather than requested, as at present) to provide this information. I also think it would be worth considering whether an alternative process (for instance comparing Part C units with each other using scatter plots to identify and rescale to ensure parity at Part C, and then comparing averages with Part B to correct for any overall bias in Part C) might be more reliable and require less subsequent adjustment by exam boards. My impression is that in-year comparison is the more common initial approach at other UK HEIs, and I understand is also in use by some cognate disciplines, such as physics, in Oxford. Therefore, whilst there is no perfect system, it certainly seems to merit careful consideration.
3. Whilst each dissertation is double blind marked, and these marks are reconciled where necessary, there is no overall process for moderating dissertation marks. The range of topics and styles of dissertation is wide; some give expositions of 'classical' topics, whilst others attempt to prove new results, some deal with 'elementary' topics which are accessible with little background, whereas others require considerable background reading beyond Part C material for the topic to even be understood. The marking guidelines allow for all of these different kinds of dissertation to be graded, but in order to ensure equity some member of staff, or small group, should have oversight to ensure they are being appropriately applied. This is difficult for individual markers since they are unaware of the content of other dissertations.

For the consideration of the wider University, I would like to comment on the mitigating circumstances procedure. The requirement to band each case (as having minor, moderate or severe impact) seems to place a heavy, possibly even unrealistic, burden on examiners who are being asked to assess often quite detailed medical or psychological evidence which is far outside their professional expertise. In addition, there seem to be a number of cases relating to chronic conditions in which there is no appropriate redress open to the examiners (particularly when all units of assessment have been severely affected so there is no information on which to base any decision as to whether to award a higher classification).

At my home institution, and I think others too, examiners are asked simply to make a binary choice as to whether to accept a mitigating circumstances claim or not. For accepted cases they then make a recommendation as to what should be done, and the student concerned can choose whether to accept that recommendation or whether to retake the assessments. This system seems to allow for better outcomes where there is too little information for examiners to be sure they have made the appropriate decision.

B4. Good practice and enhancement opportunities

*Please comment/provide recommendations on any **good practice and innovation relating to learning, teaching and assessment**, and any **opportunities to enhance the quality of the***

learning opportunities provided to students that should be noted and disseminated more widely as appropriate.

No specific comments. The variety of courses available at Part C covering the breadth of modern mathematics, including ones assessed by mini-projects and dissertations, provides an excellent learning opportunity for students.

B5. Any other comments

Please provide any other comments you may have about any aspect of the examination process. Please also use this space to address any issues specifically required by any applicable professional body. If your term of office is now concluded, please provide an overview here.

No further comments.

Signed:	Jon Woolf
Date:	08/07/2019

Please ensure you have completed parts A & B, and email your completed form to: external-examiners@admin.ox.ac.uk and copy it to the applicable divisional contact set out in the guidelines.