



EXTERNAL EXAMINER REPORT FORM 2024

External examiner name:	Prof Alan Champneys		
External examiner home institution:	University of Bristol		
Course(s) examined:	Mathematics Part C, OMMS, Maths and Computer Science Part C		
Level: (please delete as appropriate)	Undergraduate &	Postgraduate	
Year of term of office: (please delete as appropriate)		Last year	

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? <i>[Please refer to paragraph 6 of the Guidelines for External Examiner Reports].</i>		Y		
A2.	Do the threshold standards for the programme appropriately reflect: (i) the frameworks for higher education qualifications, and (ii) any applicable subject benchmark statement? <i>[Please refer to paragraph 7 of the Guidelines for External Examiner Reports].</i>		Y		
A3.	Does the assessment process measure student achievement rigorously and fairly against the intended outcomes of the programme(s)?		Y		
A4.	Is the assessment process conducted in line with the University's policies and regulations?		Y		
A5.	Did you receive sufficient information and evidence in a timely manner to be able to carry out the role of External Examiner effectively?		Y		
A6.	Did you receive a written response to your previous report?**		Y		
A7.	Are you satisfied that comments in your previous report have been properly considered, and where applicable, acted upon?**		Y		
* If you answer "No" to any question, you should provide further comments when you complete Part B.					

**** A6. and A7. If you are in your first year of term of office you should enter select N/A / Other.**

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?*

These are a highly qualified and highly motivated group of students. They achieve high marks, and the proportion of first class degrees is on the high side of what I have seen at other institutions. However, it is notable that the Oxford Part C students represent the upper portion of those students taking parts A and B. It is also notable how the Oxford part C students as a cohort perform significantly better than the OMMS students. The distribution of grades for the OMMS students are in line with what I would expect for an advanced MSc course at any UK University. Finally, I can say that having looked at the difficulty of the assessments and the standard of the students' work, the high grades are completely justified.

- 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).*

I also examined the Maths with Computer Science Part C where I noted the same issue with high grades, but I am similarly confident that this is due to the high calibre of students.

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.

I am heartened by the care and attention that is taken to exam setting and to deciding grade boundaries for each paper. I note that the method of deciding grade boundaries is necessary in the mathematical sciences because of the nature of the discipline in which it is possible to get 100% raw marks on a paper if there are no mistakes. The method involves a combination of: algorithm that suggests grade boundaries based on the performance in Part B of those Part C students sitting the paper; and, judgement of the setter and the exam board. This process is in line with, and a particularly good example of, what I have seen as external examiner of other top-rated mathematics degree programmes in the UK.

I also like the fact that each paper is checked twice, by an examiner and a checker.

Mark handling is also conducted in an open and exemplary manner, and the discussion of borderlines in the board was consistent and fair.

I should particularly like to thank the Maths and Computer Science Exam Board for improvements in transparency of their processes in the three years that I have been an external examiner. Their board was run in a most professional manner with ample time for me to ask questions or make suggestions as the external examiners.

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?

There were no major issues of concern. As with all degree programmes, however there are always a few issues that require constant monitoring and improvement, which I shall list below, in no particular order.

1. The first concerns the grading of extenuating circumstances. Those looking at a request are asked to rate them on a scale of 1-3, with 3 being the most severe. This is inline with what we do in our institution, but, we have an additional grade of "0" namely, we do not view this as having any material effect. The addition of this way of reporting extenuating circumstances to the exam board would be most helpful as it would avoid the case we had last year where a candidate was judged to have had level 1 extenuating circumstances, and was just below a borderline. It really mattered to us whether we should interpret 1 as meaning "minor effect" or "no effect".
2. In a similar vein, for each of the three years I have been on the board, additional extenuating circumstances have trickled in, after we have met, which has required decision by email. This is not acceptable in my view. I recommend that there is a strict deadline that is widely communicated to all students **and their colleges** and that any extenuating circumstances that are passed to the board after this deadline will not be considered. This is what happens in my University; any 'late' extenuating circumstances are dealt with as an Appeal, with the requirement for a justified reason why the circumstances were not made available on time
3. I remain mildly disappointed that many project assessors do not seem to seem to approach the paperwork part of their role with the seriousness it deserves. I recommend it is made clear to all assessors, strictly backed up by one of the examiners that **each** assessor needs to be write a paragraph of text, explaining their rationale for the mark awarded. Where marks reconciliation has taken place, this also requires a paragraph of text. I would recommend that this latter step is via different form (at present is part of the 'primary' assessor's form) to make it this process clearer. This would make the job of external examiners far easier in deciding whether the mark is justified, and it would also help with the awarding of the prize for the best project. (See also below under best practice, for the process adopted by Computer Science, which I learned about from the Maths and Computer Science Board). I also recommend that the examiners take a keener oversight of this whole process and that marks are rejected unless accompanied by sufficient paperwork (as they would be for an exam).
4. As with all examination processes, particularly in large departments such as Mathematics at Oxford, with so many exam papers, it seems that a large amount of chasing is necessary by examiners and the superb administrative staff in order to get all paper setters, checkers and markers to do their jobs on time. I believe that not all academics will be aware of the traditions of the British University examination system and the modern requirement, in the fee-paying era, that processes are not only fair but are seen to be fair. I believe the only way to establish this is if the communication comes from the Head of Department, with a name and shame policy. The ultimate sanction (hopefully never used) is that failure to meet these deadlines becomes an HR issue.

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.*

1. The system of having a board of examiners, in addition to paper setters and checkers, who have oversight of the whole process is a very good one. Sometimes though I do not see an audit trail that each paper has been read and amended by both the checker and the setter. I recommend that this is rigorously policed.

2. I particularly like the way the Computer Science mark projects. First, they do not allow the supervisor to mark their own projects. This, I believe is best practice, and it is one that is adopted in my own Department. I recommend that Mathematics look too to having two independent markers for their projects, with the supervisor simply providing comments on the overall progress of the work and how independently the student worked. I also note that they involve the external examiner explicitly in deciding which is the best project. I do appreciate that Mathematics has such a wide array of topics and specialisms, but on the other hand there are a large team of academic staff. I recommend the Mathematics examiners look carefully into adopting such a process for their projects.
3. I was impressed with the more streamlined way in which the scalings of individual papers was discussed at the Mathematics Board. Rather than a whole morning's activity of the full board with the external examiners present, this process was largely carried out by a previous board, with a brief oversight happening at the final board. Nevertheless I felt it was good that what we looked over all the scalings and discussed ones that seemed overly generous or harsh.

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.

I should like to congratulate the Department on the quality of the students and the overall rigour of the processes. Generally speaking, I am most impressed. Nevertheless, when reflecting on my three years in the role, I have some more general, philosophical recommendations, most of which I have made before, that I would urge the Department, Faculty and University to consider again.

First, in terms of the effort required to be an external examiner, the requirements of a part C external examiner are much greater than at similar Universities. For example, I have been an external examiner at two Universities that the Department would, I believe, regard as their peers. There I was one of five or six examiners looking at final-year papers, and only one external was required to comment on any one given paper. Thus, typically I was asked to read and comment on about 10-15 papers, whereas at Oxford I am asked to comment on about 50. Most of the papers that I am asked to comment on at Oxford are so far from my area of expertise, that my checking is mostly about grammar, typos and length of questions. This does not seem to be optimal use of my time.

Second, is it really necessary to offer 50 papers in part C? I get the impression of a certain machismo; that the quality of the degree, when compared with other top international mathematics degrees, is judged by the sheer breadth of deep, advanced material that is offered. Would it not be better to offer about half this number and/or to have some papers that cover breadth of understanding and demonstration of skills rather than ability to grasp and reproduce deep theory?. I do appreciate that there are traditions that need to be maintained, but all traditions should be allowed to evolve. For example, do we really need so many papers in geometry, logic and topology? Surely the point of each paper is to test the candidates appreciation of a higher level topic and to show their ability to reason. For those that wish to go on to research, I believe many of the *particular* deep specialisms could be offered as graduate reading courses, or as Part C dissertation/project topics.

Finally, I am surprised that OMMS students, who are taking the equivalent of 1-year MSc, take exactly the same set of assessments as those on Part C of the MMath. My understanding is in just about any other University in the UK, the final-year of a MMath would be worth 60 ECTs, (and take place over two semesters), whereas a 1-year MSc would be 90 ECTs (and take place over two semesters, plus the Summer). I worry that Oxford may be offering a slimmed down degree, which is in direct competition with other programmes (including other MSc programmes run by Oxford's Mathematics Department) that require a student to study for longer.

Signed:	
Date:	1 st July 2024

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.