

EXTERNAL EXAMINER REPORT FORM 2018

External examiner name:	Martyn Quick	
External examiner home institution:	University of St Andrews	
Course examined:	Mathematics, Part A	
Level: (please <i>delete as appropriate</i>)	Undergraduate	Postgraduate

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?	✓			
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>	✓			
A3.	Does the assessment process measure student achievement rigorously and fairly against the intended outcomes of the programme(s)?	✓			
A4.	Is the assessment process conducted in line with the University's policies and regulations?	✓			
A5.	Did you receive sufficient information and evidence in a timely manner to be able to carry out the role of External Examiner effectively?	✓			
A6.	Did you receive a written response to your previous report?	✓			
A7.	Are you satisfied that comments in your previous report have been properly considered, and where applicable, acted upon?	✓			
<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?*

From my experience, I conclude that the examination questions set by the Oxford examiners at this level are amongst the most demanding. These questions rigorously challenge the students taking these papers. Nevertheless, I observe that the students rise to this challenge, are able to make generally good progress on the problems set, and demonstrate their abilities. As a consequence, the academic standards achieved by students in Mathematics at Oxford is very high and consistently among the highest in the UK.

- b. Please comment on student performance and achievement across the relevant programmes or parts of programmes (those examining in joint schools are particularly asked to comment on their subject in relation to the whole award).*

The student performance at this stage of the Honours programme in Mathematics is very high. Those at the top end of the cohort are obtaining near perfect marks on many papers. During my visit to Oxford to attend the Examiners' Meeting, I spent considerable time looking at performances at the class borderlines between I/II.i, II.i/II.ii and II.ii/III on various papers. The borderline between a First class performance and an Upper Second is particularly relevant here: The students at this border typically demonstrate a generally solid understand and the ability to produce some very good mathematics. The majority of students at Part A Mathematics Honours are achieving, on average, such First or Upper Second Class grades. These good performances reflect well upon the students, their diligence during their studies, and their tutors' efforts.

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 overall assessment process is conducted extremely carefully. When I compare the final paper set with the drafts that I viewed, I observe that my comments have been taken seriously. Marking has been performed carefully and the checking process seems very thorough. In the Examiners' Meetings, each paper was carefully reviewed, the comments of External Examiners on the performances considered in detail, and the conversion from raw marks to USMs implemented so that student are rewarded appropriately for their achievements. I conclude that students are being treated fairly and, indeed, the whole process seems to be about as rigorous as would be possible.

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?

As has been the case in the two previous years, I have no significant issues to raise. I made the following comments at the Examiners' Meeting this year, but these are a long way from being significant issues that affect the examination procedures.

- Of the Pure Mathematics papers at Part A, I have observed that the papers set by the Examiners (Papers A0 and A2) are typically a little more challenging than those papers set by lecturers and reviewed by the Board of Examiners. This has most likely been observed by Examiners and the Department's Teaching Committee, but as I finish my tenure as External Examiner I thought I would note this. As these are core papers taken

by all Mathematics students at this stage of their programme, I don't perceive any issue relating to fairness.

- Similarly, it seems to be difficult to balance the level of relative challenge of the questions appearing on the Short Option (ASO) paper. This year, for example, the marks on the Number Theory question on this paper were somewhat higher than those for other questions on this paper. It is hard to determine what the cause was for this unusual distribution of marks. Potentially it occurred this year because the question was much easier than the others, though that was not what I anticipated when I reviewed the original draft. There are perhaps other explanations (maybe many more of the top students selected this question), but it is difficult to be certain. I see no easy answers to balancing the level of difficulty between the questions on this Option paper, nor a clear way to determine the factors at play here, nor even to establish whether there actually is any issue here. However, since this paper, and the Number Theory question in particular, was discussed at the Examiners' Meeting, I felt it should be mentioned. It would be a considerable shame, if students were to select from only a small collection of options based on anticipated ease of questions when they might gain from experiencing a wider choice of topics.
- As a final, very minor, administrative comment, I wondered whether it would be easier for future External Examiners if the batches of marked scripts were sorted by paper rather than bundled by candidate. I feel that this would speed up the process of inspecting borderline scripts when looking at each paper. Nevertheless, I appreciate that there may be other stages in the processing of exams, to which I have not been party, where collecting all a candidate's scripts together provides efficiency.

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.*


Overall, the material examined at Part A Mathematics Honours covers a broad range of mathematics. The core material is appropriate for this level (comparing with that at many institutions across the UK) and a good range of optional material is made available for students to choose from. I hope that students will continue to make good use of this range of options. In the context of my comments on the ASO Short Options paper above, I am concerned that students might choose options on this paper based on perception of mark distribution rather than interest in the topic. It would seem appropriate to monitor students' option choices, combined with overall performances in the questions selected on the paper, to encourage students to continue to select fully from the range of options available to them.

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.

This is my final (third) year as External Examiner for Part A Mathematics. Throughout this time, I have observed that the processes used are both robust and treat all students as fairly as possible. I appreciate the ways that my colleagues at Oxford have worked diligently in preparation of the exam papers and before the Examiners' Meetings. They have responded to my comments in a positive manner and I hope that my efforts have been useful to the Department of Mathematics. The papers set always indicate the high academic standards expected of the students and are probably more challenging than those set at any other institution of which I am aware. The setters for each paper clearly put careful thought into the questions set. I have observed some variation in the nature of solutions provided: some are more detailed, while others omit more steps in arguments and calculations. Overall, I have found those that include more details, so reproducing the solutions from a good student, to be more helpful as they enable me to conclude more clearly what is being expected of the

students. Overall, the whole educational process is providing a good framework for students to learn and demonstrate their progress at this particular stage of their programme.

Signed:	
Date:	26 th July 2018

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.