

External examiner's report for  
M.Sc. Examination in Mathematics and  
Foundations of Computer Science  
2014-2015

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The examiners' meetings were superbly conducted by Profs. Victor Flynn and Jonathan Barret. The external examiners, Prof. John Talbot and myself, were made fully aware of the regulations and the particular circumstances of the examinations, and it was a pleasure to work together in order to both assure the quality of the procedure and resolve any problematic issues. The transition from previous examiners, Prof. Bob Coecke (internal) and Prof. Alex Wilkie (external), also worked rather smoothly.

The moderation of the marks worked impeccably in all cases, with no especially difficult cases this time. I was very pleased with the project presentations and the overall quality of the projects and the presentations was even higher than last year, with a more projects containing elements of novel work, suitable for publication. (But this year I only attended the computer science presentations, due to time constraints in the examination, given the large number of presentation, which is a sign of success of the degree.)

I repeat the statement of my previous report that this is an excellent M.Sc. degree, with many commendable aspects to it, not least its interdisciplinary character, combining Mathematics and Theoretical Computer Science in a meaningful way. The courses offered are deep, relevant, and at the cutting-edge of research. It is an excellent path to doctoral study, and, indeed, a good proportion of the students were offered PhD studentships at renowned institutions after completion.

I made a number of suggestions in my previous report, all of which were implemented. There is only one aspect that remains to be improved in my view:

*Uniform level of difficulty.* The level of difficulty of the different papers is not uniform, and this is confirmed by the final results gathered in the examiners' meetings.

Moreover, it seems that some subjects tend to produce mini-projects with significantly higher marks than the others. However, this remark has to be

taken with caution, because this is a small sample of only two years and not too many students. Additionally, there may be good reasons for this, for instance that some topics in theoretical computer science are relatively new, and hence with far more unexplored territory, giving ample opportunity for the students to conduct interesting explorations, potentially with novel, interesting findings. Hence I do not propose any procedural change, but only watching closely this phenomenon, to make sure the subjects are all equally difficult.

I also repeat from my previous report that this degree and its examination procedures are of international, top quality standards. It has been a pleasure to work with the internal and external examiners, and I am pleased by their commitment to excellence and smooth running of the examination procedures.

# EXTERNAL EXAMINER REPORT FORM 2015



<b>Title of Examination:</b>		MSc in Mathematics and the Foundations of Computer Science
<b>External Examiner Details</b>	<b>Title:</b>	Dr
	<b>Name:</b>	John Talbot
	<b>Position:</b>	Reader in Mathematics
	<b>Home Institution:</b>	UCL

**Please complete both Parts A and B.**

<b>Part A</b>				
		<i>Please (✓) as applicable*</i>		
		<b>Yes</b>	<b>No</b>	<b>N/A</b>
A1.	Did you receive sufficient information and evidence in a timely manner to be able to carry out the role of External Examiner effectively?	x		
A2.	Are the academic standards and the achievements of students comparable with those in other UK higher education institutions of which you have experience?	x		
A3.	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 3(c) of the Guidelines for External Examiner Reports].</i>	x		
A4.	Does the assessment process measure student achievement rigorously and fairly against the intended outcomes of the programme(s)?	x		
A5.	Is the assessment process conducted in line with the University's policies and regulations?	x		
A6.	Have issues raised in your previous reports been responded to and/or addressed to your satisfaction?			x
<p><b>* If you answer "No" to any question, please provide further comments in Part B. Further comments may also be given in Part B, if desired, if you answer "Yes" or "N/A".</b></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?*

Academic standards achieved by students on the MFoCS course generally compare very favourably to those achieved by students at other higher education institutions. The rather unique content and assessment structure (via mini-projects and dissertation with no final written exams) seems to attract some excellent students.

- 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).*

Marks achieved by students in the many different mini-projects offered on the course were quite varied, but among the Mathematics options (around half of the total), the students performance was generally very good. The mini-projects clearly offered the very best students the opportunity to shine while allowing slightly weaker (but still competent) candidates to gain satisfactory marks.

### 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 was very clear and rigorous. With a system of reconciliation in cases when the two internal examiners differed in opinion. We had plenty of opportunity to carefully assess many scripts and the marks awarded in all cases appeared to be very fair.

### 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?*

No.



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.*

There was a single instance of a dissertation where perhaps more care could have been taken by the student to carefully cite his or her sources. I realise that students are already told about the dangers of plagiarism, however this could perhaps be repeated to them at some point later in the academic year before they submit their dissertation.

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.*

None, other than to thank the internal examiners and course administrator for their extremely efficient and careful handling of all examination matters.

Signature:	
Date:	28/10/2015
<p><b>Please email your completed form (preferably as a word document attachment) to: <a href="mailto:external-examiners@admin.ox.ac.uk">external-examiners@admin.ox.ac.uk</a> and copied to the applicable divisional contact.</b></p> <p><b>Alternatively, please return a copy by post to: The Vice-Chancellor c/o Catherine Whalley, Head of Education Planning &amp; Quality Review, Education Policy Support, University Offices, Wellington Square, Oxford OX1 2JD.</b></p>	