## Examiners' Report Oxford Masters in Mathematical Sciences (OMMS) Trinity Term 2021

## Part I

#### A. STATISTICS

- Numbers and percentages in each class. See Table 1, page 1.
- Numbers of vivas and effects of vivas on classes of result. Not applicable.
- Marking of scripts.

All Mathematics examination scripts were, as is the normal practice, single-marked according to carefully checked model solutions and a pre-defined marking scheme which is closely adhered to. The Mathematics dissertations and mini-projects were double-marked. A comprehensive independent checking procedure is also followed. (See the Part C Mathematics Examiner Report for details.)

	Number			Percentages %			
	2021	2020	2019	2021	2020	2019	
Distinction	21	27	16	40.38	65.85	50.0	
Merit	9	7	6	17.31	17.07	18.8	
Pass	21	5	9	40.38	12.2	28.1	
DDM	-	2	-	-	4.88	-	
Fail	1	0	1	1.92	0	3.1	
Total	52	41	32	100	100	100	

Table 1: Numbers in each class

#### B. New examining methods and procedure in the 2020 examinations

In light of the ongoing Covid 19 pandemic, the University changed the examinations to an open-book format and rolled out a new online examinations platform. An additional 30 minutes was added on to the exam duration to allow candidate the technical time to download and submit their examination papers via Inspera.

# C. Changes in examining methods and procedures currently under discussion or contemplated for the future

The department intends to hold in person exams in Trinity Term 2022.

#### D. Notice of examination conventions for candidates

The first notice to candidates was issued on 26th February 2021 and the second notice on 30th April 2021. These contain details of the examinations and assessments.

All notices and the examination conventions for 2021 are available online at:

https://www.maths.ox.ac.uk/members/students/undergraduate-courses/teaching-and-learning/part-c-students/examinations-and-assessments/part-c-and-omms

## Part II

#### A. General Comments on the Examination

The examiners would like to convey their grateful thanks for their help and cooperation to all those who assisted with this year's examination, either as assessors or in an administrative capacity. The chairman would like to thank Barbara Galinska, Charlotte Turner-Smith, Waldemar Schlackow and the rest of the academic administration team for their support of the Part C and OMMS examinations.

In addition the internal examiners would like to express their gratitude to Prof Richard Jozsa and Prof James Robinson for carrying out their duties as external examiners in a constructive and supportive way during the year, and for their valuable input at the final examiners' meetings.

#### B. Equality and Diversity issues and breakdown of the results by gender

Table 2, page 4 shows percentages of male and female candidates for each class of the degree.

Class	Number									
		2021			2020		2019			
	Female	Male	Total	Female	Male	Total	Female	Male	Total	
Distinction	0	21	21	5	22	27	4	12	16	
Merit	4	5	9	3	4	7	1	5	7	
Pass	4	17	21	1	4	5	3	6	9	
DDM	-	-	-	0	2	2	-	-	-	
Fail	1	0	1	0	0	0	0	1	1	
Total	9	43	52	9	32	41	8	24	32	
Class				Per	centag	je				
		2021		2020			2019			
	Female	Male	Total	Female	Male	Total	Female	Male	Total	
Distinction	0	48.84	48.84	55.56	68.75	62.16	50.0	50.0	50.0	
Merit	44.44	11.63	28.04	33.33	12.5	22.92	12.5	20.8	18.8	
Pass	44.44	39.53	41.99	11.11	12.5	11.81	37.5	25.0	28.1	
שתם			_	0	6.25	6.25	-	_		
	-	-	_		00	00				
Fail	- 11.11	0	11.11	0	0	0	0	4.2	3.1	

Table 2: Breakdown of results by gender

#### C. Detailed numbers on candidates' performance in each part of the exam

See Table 3, page 4 for the number of candidates taking each Mathematics paper, together with statistics for the raw marks (average and standard deviation), and USMs (average and standard deviation) attained on each paper by this cohort. All papers listed are units except the Mathematics Dissertation, which is a double unit. The total maximum raw marks for a unit is 50 whilst the USMs are scaled to a maximum of 100. In accordance with University guidelines, statistics are not given for papers where the number of candidates was five or fewer.

Paper	Number of Candidates	AvgRaw	StdevRaw	AvgUSM	StdevUSM
C1.3	7	17.29	4.68	54.71	8.32
C2.4	7	26.14	7.71	64	8.12
C2.7	8	22.25	10.08	54.12	20.24
C3.1	8	26.38	14.38	67.62	19.64
C3.2	7	22.57	6.8	64.14	3.89
C3.3	15	18.27	7.59	56.4	15.71
C3.4	6	37	8.1	70.33	15.16
C3.5	7	23.29	8.18	58.14	13.69
C3.8	8	26.12	5.87	59.88	5.64
C3.11	6	23.5	3.83	67.67	5.28
C4.1	7	19.14	7.71	53.43	15.8
C4.3	6	24.67	8.87	59.83	10.83
C4.6	6	27.5	9.35	60	13.04
C6.1	11	26.18	13.2	64.73	18.4
C6.2	12	28.67	6.65	63.17	12.04
C6.3	7	31.57	8.92	68.71	12.27
C6.4	6	31.83	8.42	66	13.62
C8.1	8	36.38	8.18	66.5	14.32
C8.3	7	25	10.72	60.43	13.11
SC1	10	31.8	6.66	63.7	10.44
SC2	8	34.38	7.07	69.88	10.56
SC4	12	27.42	9.16	63.5	15.09
SC5	8	38.88	8.53	64.5	11.84
SC10	7	25.14	3.44	60.71	4.82
C5.4	19	-	-	73.11	11.15
C6.5	18	-	-	65.89	5.75
CCD	52	-	-	73.83	11.14

Table 3: Statistics by paper (Mathematics papers)

## D. Recommendations for Next Year's Examiners and OMMS Supervisory Committee

Most of the recommendations are shared with the Part C Mathematics Examiner Board including

- The scaling algorithm which used Part B exam data should be reviewed, and even more preferably changed.
- Length of dissertation should be checked by other means instead of or in addition to the 7500 word limit, which was hard to verify.
- Penalties for late submission of online exam should be graduated penalties rather than a harsh cut-off.
- The rule for distinction/merit/pass should be more nuanced. In addition, it should be better communicated to assessors. For example, it was felt that not all assessors understand what the borderlines for these classifications are in their assessor reports.
- The effect of the new degree classifications on the scaling practice should be reviewed.
- Scaling practice should be done locally before the final board meeting.
- It should be better communicated to external examiners how their comments were taken into account.

For further details regarding the above recommendations, see Part C Mathematics Examiner Report.

We turn to the recommendations or comments which are more applicable to the OMMS examiner board and mostly concern **discrepancies in the treatments for OMMS and Part C students**. The board recognised that efforts have been made in previous years to ensure more transparency, agreements and fairness in the treatment of OMMS and Part C students. The board however felt that a number of differences still exists which should be addressed.

- *Scaling algorithm.* The current scaling algorithm use solely the data from the previous year Part B exam results. It is arguably unclear whether or how this practice is fair to OMMS students who had entirely different education before coming to Oxford.
- *Exam prizes.* The board felt that there is a strong case to match OMMS exam prizes with Part C exam prizes, in terms of both number of prizes and amount for each prize.
- *Dissertation feedback.* Currently, feedback on dissertations are given to OMMS students but not Part C students. If this is to stay in the future, assessors should be made aware of this fact prior to their assessing students' work.

Finally

• The board observed an *anomalous high* percentage of OMMS students receiving *Pass* this year than in previous years. Though a small number of these are possibly due to the new degree classification rule, we felt that this was more likely due to that the pandemic had exacerbated OMMS students' integration into their new education at Oxford, or that we had admitted more students in this cohort, or both.

## E. Comments on sections and on individual questions

See reports from Mathematics examiners.

## F. Names of members of the Board of Examiners

Internal Examiners: Prof. Luc Nguyen (Chair) Prof. Dominic Joyce Prof. Damian Rössler Prof. Harald Oberhauser Prof. Qian Wang

Prof. Richard Jozsa (External) Prof. James Robinson (External)