REPORT ON EXAMINATIONS

M.Sc. in Mathematical Modelling and Scientific Computing 2019/20

Part I

A. Statistics

(1) **Numbers and percentages in each class/category**

Class	Number				%			
	2019/20	2018/19	2017/18	2016/17		2018/19	2017/118	2016/17
Distinction	10	6	8	10		22	27	36
Merit	5	5	N/A	N/A		19	N/A	N/A
Pass	4	14	20	18		52	70	64
Fail	1	0	2	0		0	7	0
Incomplete	3	2	0	0		7	0	0

(2) **Vivas**

The 21 candidates who submitted dissertations were examined by *viva voce*.

(3) Marking of scripts

Written examinations were sat in Weeks 0 of Hilary and Trinity Terms 2020. Scripts were single-marked by assessors followed by a script check carried out by the Course Director. Finalisation of marks by the examiners took place during an examiners' meeting in week 2 of each term. Special topics and case studies were double-marked by assessors. In cases where marks varied over the pass/fail borderline, or the difference in marks was greater than ten, the assessors were asked to meet and reconcile their marks. All marks were approved by the examiners during the meetings held in week 7 of Hilary and Trinity terms, as well as at the final examiners' meeting, before being released to the candidates. All dissertations were read and marked by at least two examiners; marks were approved by all examiners at the final examiners' meeting.

B. New examining methods and procedures

Owing to Covid-19 the following action was taken:

1) Papers A2 and B2 were sat as open-book online examinations. Students were issued papers via Weblearn, the time of download was tracked and students were given 3.5 hours to complete and upload each script.
2) The number of assessed units was reduced from 13 to 12 whereby students were expected to complete one less special topic.
3) A safety-net policy was introduced as follows:

- USM1=(sum of all individual USMs)/12

- USM2=(sum of all individual USMs except those from exams A2 and B2)/10

- USM3=(sum of all individual USMs with A1 and B1 counted double)/14

Students were classified based on the highest USM achieved from the three calculations above.

C. Changes in examining methods etc. which the examiners would wish the faculty/department and the divisional board to consider

None.

D. How candidates are made aware of conventions

The conventions are posted on the course website and hard copies are circulated to the students. The Course Director discusses the conventions with the candidates and the candidates are reminded of them by email on several occasions during the year. This year candidates were notified via email on any changes to the examination conventions owing to Covid-19, amended conventions were uploaded to the course website.

Part II

A. General comments on the examination

The A2 and B2 examinations were offered as open-book online examinations. Overall candidates appear to have performed better on the A2 and B2 examinations than the sit-down closed book A1 and B1 examinations.

B. Equal opportunities issues and gender breakdown

There were 24 students in total; 18 male and 8 female candidates; 1 male candidate and 3 female candidates passed; 8 male candidates and 2 female candidates were awarded distinctions; 3 male candidates and 2 female candidates were awarded merits; 3 candidates have not yet completed the course.

C. Candidates' performance in each part of the examination

This course administers examinations internally in January and April, with each student sitting 4 papers. Each of the two sets of examinations is split into Paper A (Mathematical Methods) and Paper B (Numerical Analysis). Both sets of examinations went smoothly this year, with a good distribution of marks between failure and distinction ranges. Performances on the case studies, special topics and dissertations also ranged from fail to distinction level.

D. Distribution of special topics

Of the 21 topics offered this year, 8 failed to attract any students.

Michaelmas Term	Passed	Failed
Approximation of Functions	4	0
Further Mathematical Biology	9	0
Integer Programming	3	0
Mathematical Geoscience	1	0
Solid Mechanics	2	0
Viscous Flow	1	0

Hilary Term	Passed	Failed
Advanced Topics in Statistical Machine Learning	1	0
Applied Complex Variables	0	1
Computational Algebraic Topology	1	0
Finite Element Methods for Partial Differential Equations	2	0
Mathematical Models of Financial Derivatives	5	1
Networks	5	0
Stochastic Modelling of Biological Processes	3	0

Trinity Term	Passed	Failed
Advanced Topics in Statistical Machine Learning	1	0
Mathematical Models of Financial Derivatives	1	0
Stochastic Modelling of Biological Processes	1	0

E. Names of members of the board of examiners

Prof P Maini(Chair)
Prof P Grindrod
Prof P Farrell
Prof J Tanner
Prof S Langdon (External Examiner)

13 September 2019