

REPORT ON EXAMINATIONS

M.Sc. in Mathematical Modelling and Scientific Computing 2017-18

Part I

A. Statistics

(1) Numbers and percentages in each class

Class	Number				%			
	2017/18	2016/17	2015/16	2014/15	2017/18	2016/17	2015/26	2014/15
Distinction	8	10	6	4	27	36	26	14.3
Pass	20	18	17	22	70	64	74	78.6
Fail	2	0	0	1	7	0	0	3.6
Incomplete	0	0	0	1	0	0	0	3.6

(2) Vivas

All candidates were examined by *viva voce*. As in the previous academic year, the performances varied significantly from poor to excellent.

(3) Marking of scripts

Written examinations were sat in Weeks 0 of Hilary and Trinity Terms 2018. 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

New examining methods and procedures were not introduced in the academic year 2017-18.

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.

Part II

A. General comments on the examination

None.

B. Equal opportunities issues and gender breakdown

There were 30 students in total; 18 male and 12 female candidates; 12 male candidates and 9 female candidates passed; 6 male candidates and 2 female candidates were awarded distinctions; 2 candidates failed 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 27 topics listed this year, 10 failed to attract any students. The courses marked * were run by the Industrially Focused Mathematical Modelling (InFoMM) CDT. In addition the course marked † is a special option only available by request.

<i>Michaelmas Term</i>	<i>Passed</i>	<i>Failed</i>
Approximation of Functions	3	0
Further Mathematical Biology	9	0
Integer Programming	5	0
Mathematical Geoscience	3	0
Mathematical Physiology	3	0
Perturbation Methods	1	0
Solid Mechanics	0	0
Statistical Mechanics	0	0
Stochastic Differential Equations	1	0
Topics in Fluid Mechanics	2	0

Viscous Flow	0	0
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<i>Hilary Term</i>	<i>Passed</i>	<i>Failed</i>
Applied Complex Variables	0	0
Computational Algebraic Topology	0	0
*Continuum Models in Industry	0	0
Elasticity and Plasticity	1	0
Finite Element Methods for PDEs	2	0
*Mathematical Analytics	1	0
Mathematical Mechanical Biology	0	0
Mathematical Models of Financial Derivatives	8	0
*Mathematics for Energy	1	0
Networks	9	0
†Statistical Machine Learning	3	0
Stochastic Modelling of Biological Processes	2	0
Waves & Compressible Flow	0	0

<i>Trinity Term</i>	<i>Passed</i>	<i>Failed</i>
† Advanced Topics in Statistical Machine Learning	2	0
C++ for Scientific Computing	11	0
† Further Case Study in Scientific Computing	2	0
† Mathematical Models of Financial Derivative	3	0
† Networks	1	0
Numerical Solution of Differential Equations II	1	0
Python in Scientific Computing	5	1
Randomised Algorithms for Matrix Computations and Data Analysis	6	1
† Statistical Machine Learning	1	0
† Stochastic Modelling of Biological Processes	1	0

E. Names of members of the board of examiners

Prof P Grindrod (Chair)

Prof P Farrell

Prof C Cartis

Prof P Maini

Prof S Langdon (External Examiner)