

MSc and Diploma in Applied Statistics 2006: Examiners' Report

Part I

A STATISTICS

(1) Numbers and percentages in each category

MSc in Applied Statistics

Category	Number				Percentage			
	2005/06	2004/05	2003/04	2002/03	2005/06	2004/05	2003/04	2002/03
Distinction	5	3	3	7	16	11	11	25
Pass	22	22	23	21	71	81	85	75
Awarded Diploma	2	0	0	0	7	0	0	0
Fail	1	1	0	0	3	4	0	0
Did not complete	1	1	1	0	3	4	4	0

Five candidates were awarded a distinction in the MSc. There was one candidate who failed the MSc. Two candidates were found to have sufficient understanding to be awarded a Diploma.

Diploma in Applied Statistics

There was one candidate who passed with a distinction.

Resit Candidate

One candidate, who had failed the examinations in 2005, sat both written papers but again failed.

(2) Vivas

None

(3) Double marking of scripts

All scripts and dissertations were double marked.

B NEW EXAMINING METHODS AND PROCEDURES

Examining methods and procedures were generally similar to those in 2003/04 and 2004/05.

A marksheet (copy attached) was distributed to the assessors to guide the marking of the dissertations. This had been made in response to last year's examiners' report, with the purpose of reducing variability among assessors.

C CHANGES TO EXAMINING CONVENTIONS TO BE CONSIDERED

The MSc Supervisory Committee should consider whether it is possible to introduce examination regulations so that students are not permitted to take the dissertation if they have not qualified for a Diploma in the marks on the written papers and practical assessment.

The examiners recommend that only the 5 best questions attempted should count in Paper II (see remarks under Part II Section D).

D EXAMINATION CONVENTIONS – COMMUNICATION WITH CANDIDATES

Conventions set out in the course handbook were distributed to students in week 0 of Michaelmas Term 2005. Students were further informed about guidelines for marking the dissertation in Trinity Term 2006 (information in appendix).

Part II

A GENERAL COMMENTS ON THE EXAMINATIONS

The overall standard of the candidates was satisfactory. The standard of the dissertations was still somewhat variable but the mark scheme and the information given to the students seem to have prevented large differences in marks between assessors.

B EQUAL OPPORTUNITIES ISSUES AND BREAKDOWN OF THE RESULTS BY GENDER

Category	Male	Female
Distinction	5	0
Pass	10	12
Awarded Diploma	2	0
Fail	0	2
Did not complete	1	0

Figures include the resit candidate. There was one male candidate for the Diploma in Applied Statistics.

C DETAILED NUMBERS ON CANDIDATES' PERFORMANCE IN EACH PART OF THE EXAMINATION

Paper I Principles of Statistical Analysis

Candidates were asked to attempt all 6 questions. Two candidates answered 4 questions only. Three candidates attempted 5 questions. Summary statistics are given below.

Question	Topic	No of answers	Median	IQR
1	Statistical Methods	29	7	4
2	Statistical Methods	30	9.5	5.5
3	Statistical Theory	32	12	9.5
4	Statistical Theory	31	11	6.5
5	Time Series	32	16	5.25
6	Survival Analysis	31	16	5

Paper II Further Statistical Methodology

Candidates were asked to attempt a total of 6 questions including 2 core questions. One candidate attempted 7 questions although only credited for the best 6 answers, sixteen candidates answered 6 questions, ten candidates answered 5 questions, two candidates answered 4 questions and three candidates answered 3 questions.

Question	Topic	No of answers	Median	IQR
	<i>Core</i>			
1	Computer Intensive Statistics	30	10	6
2	Further Statistical Methods	13	6	3
3	Decision Analysis	30	7	12
4	MCMC and Applied Bayesian Statistics	19	8	4.5
	<i>Options</i>			
5	Models of Disease	8	9.5	6.5
6	Combinatorial Optimisation	5	18	7
7	Mathematical Genetics	1	20	0
8	Actuarial Science	22	10	5.75
9	Actuarial Science	22	7.5	9.75
10	Statistical Data Mining	6	3	0.75
11	Statistical Data Mining	14	6	5

D COMMENTS ON PAPERS AND INDIVIDUAL QUESTIONS

Paper I

The questions were generally satisfactorily done with some high marks obtained apart from question 1. The performance on question 3 had very high variability.

Paper II

The standard of answers was more variable and generally lower than in Paper I. All candidates attempted at least two core questions as required.

The students seemed to have some difficulties attempting 6 questions in Paper II given the time available. Even when students did attempt 6 questions, one was often not properly attempted. The examiners recommend that only the 5 best questions attempted should count. This appeared to conform better to student performance in the other examination items. Only one student attempted the question on Mathematical Genetics.

Practicals

Marks for the practicals taken throughout the course were generally high compared to the examination marks.

Dissertations

Dissertations were assessed on the following topics:

APOE gene and cytokines in delirious and non -delirious elderly medical in-patients
Analysis of the production function in the UK corporate sector
What predicts the ability to learn to play "Space Invaders" in old age ?
Statistical arbitrage using Benchmark-mirroring portfolios
Modern Portfolio Optimisation
Bayes factors and stratigraphy
Recognition and Imputation of missing values
Modelling the choice between different modes of transport
Evaluating the statistical validity of agent-based market models
An analysis of British nationalism using Latent Class Analysis
Prediction of Football Match Results and Exploitation of Inefficiency in the Betting Market
Modern Risk Estimation in Portfolio Theory
An analysis of hurricane data
The learning skills of elderly people
A randomised controlled trial of the effect of continuous electronic physiological monitoring on the adverse event rate in high risk medical and surgical patients
Non-parametric modelling approach to identify prognostic marker in pre-dialysis chronic kidney disease patients
Population genetic inference of demographic histories
Statistical modelling and prediction of US Gulf Coast and US East Coast hurricane insured losses
Hippocampal volume and memory in elderly Mancunians
Meteorological effects on pneumonia incidence
An investigation of methods of stock selection for pairs trading
Low Degree Forests
Is the depth of anaesthesia, as measured by a processed EEG signal, altered by epidural anaesthesia?
How others drink their wine: An intercontextual approach to the ethnic makeup of the Ebro Valley (Spain) in the Iron Age
An analysis of children malnutrition problems in Tamil Nadu, South India
Comparison of wavelet de-noising techniques
Image compression via Discrete Wavelet Transformation and Vector Quantisation
The shortest path length in small-world networks
Detecting population structure using spectral clustering
Comparison of screening methods for examining cervical cancer

F EXAMINERS

S L Lauritzen (Chair)
R Boys (External)
P Clifford
M Lunn