School of Mathematics

Course 454 — Statistical Inference, Generalised Linear Models 1998-99
(J.S./S.S. Mathematics)

Lecturer: Mertens/Wilson

Requirements/prerequisites:

Duration: Michealmas, Hilary and Trinity

Number of lectures per week:

Assessment:

End-of-year Examination:

Description:
Basic Concepts of Inference.

Estimators, Mean squared Error, Sufficiency, MVUEs. Maximum likelihood estimation. Properties of maximum likelihood. Bayesian estimation.

Hypothesis testing, likelihood ratio tests. Bayesian methods. Other approaches: nonparametrics, order statistics, monte carlo methods - robustness.

The linear model. Least Squares estimates. BLUEs.

Extending the scope of the linear model: transformations, Box-Cox, Weighted regression. General and generalised linear models.

A Bayesian approach to inference.

Textbooks:
Silvey, S.D., "Statistical Inference".
McCullagh and Nelder, "Generalised Linear Models".
Lee, P., "Bayesian Statistics: An Introduction".

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