Lecturer: Dr Ingrid Baarde
Coordinator: Professor Geoff McLachlan, Room 7.45, Priestley Building, phone 3365-2150.
email: gjm@maths.uq.edu.au

Classes: Three lectures and one tutorial per week for the semester.

Assessment: Two-hour written examination at the end of the course - 66 2/3%
Assignments during the semester - 33 1/3%.

Purpose of course: To provide further coverage of the principles of statistical inference.

Assumed background: Pre: (MATH2000 or MP211 or 281 or MT250)
+ (MS212 or 252 or STAT2002)
Inc: GN230 or MS301 or 304 or 371

Resource Materials: None

Course Outline:

(1) Introduction to point estimation, including the concepts of sufficiency, completeness, and ancillarity.

(2) Exponential families.

(3) UMVU estimators; asymptotic properties of consistency and efficiency.

(4) Concept of expected and observed information in a sample; distribution of score statistic; Cramér-Rao lower bound.

(5) Maximum likelihood estimation and its asymptotic theory.

(6) Large-sample confidence intervals.

(7) Hypothesis testing.

(8) Introduction to Bayesian inference.
(9) Multivariate normal distribution & quadratic forms.

(10) Distributional results & inference for General Linear Model

There is no set text book. Some useful reference books are:

SOME REFERENCES


