



**Design and Analysis of Experiments**  
**19–24 November 2009**  
**Enrolment form for fee-paying participants**

Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_  
Employer: \_\_\_\_\_  
Department: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Mobile: \_\_\_\_\_  
Email: \_\_\_\_\_

Places in the course will be allocated on a first-come-first-served basis, with preference given to those who have previously expressed interest.

Please see the course outline for further information, including course times, content and pre-requisites.

\_\_\_\_\_  
Signature Date

**Course Fees**

Tick one box only:

Please send an internal charge-out for **\$900** to \_\_\_\_\_ (please quote your **Department Number**).

Cheque for **\$990** (paid to Statistical Consulting Centre) enclosed (includes GST).

Please send/fax me a tax invoice for **\$990** (includes GST).

Credit card payment:

VISA       MASTERCARD

Card number: \_\_\_\_\_ Expiry date: \_\_ / \_\_ Amount: \$990 (includes GST)

Cardholder name: \_\_\_\_\_

Signature: \_\_\_\_\_

Payment is required to confirm enrolment.

# Design and Analysis of Experiments

*A course of the Statistical Consulting Centre, The University of Melbourne*

**Thursday 19–Tuesday 24 November 2009**

This course covers the principles and practice of designing experiments, and the analysis of data from them. The course covers the following topics:

- choice of experimental units;
- importance of randomisation, and the practicalities;
- replication and sample size;
- blocking and matching;
- commonly used designs, including completely randomised designs, randomised block and matched pair designs, Latin square designs;
- treatments, including factorial structures;
- analysis of data from designed experiments;
- analysis of variance and covariance;
- special designs, including incomplete block designs, split-plot designs, and fractional factorial designs;
- transformations of data;
- practical and ethical issues arising in the conduct of experiments.

## ***Course structure:***

The four days are deliberately arranged so that there is a weekend break during the course. Each day will consist of four approximately equal-length sessions; the first session of the day will commence at 9:15 a.m. and the final session will end at approximately 4:45 p.m. The sessions will mix lecture presentations with practical work; tutorial help will be available.

All participants have access to a PC. The statistical package Minitab will be used in the course. However, the course will not be package-centred, and no prior experience with Minitab is necessary.

The course is one of the specialised courses offered by the Statistical Consulting Centre. Each year, the Centre offers the general, introductory course "Statistics for Research Workers" at least twice, and at least one additional, more specialised course. The last occasion that Design and Analysis of Experiments was run was in 2007.

## ***Venue:***

The course will be held in the Wilson Computer Laboratory in the Department of Mathematics and Statistics, Richard Berry Building. The Richard Berry building is well served by public transport; tram routes 1, 3, 5, 6, 8, 16, 64, 67 and 72 stop just outside the building. See metlink for details, including a map. No parking is available.

## ***Cost:***

The cost of the course is \$900 plus GST. We have a discounted rate for postgraduate students of \$750 plus GST. (GST does not apply if paying through your University department.) The fee includes a comprehensive set of notes, and morning and afternoon tea. Lunches are not provided.

## ***Who should take this course?***

The course is suitable for researchers involved in the design and analysis of research on the effectiveness of interventions or treatments. Applications include randomised trials in medicine or the social sciences, designed experiments in the biological sciences, studies of processes in engineering, as well as many other possibilities in other disciplines.

## ***Prerequisites:***

Participants will need to have studied statistics at an introductory level. For example, participants should know about hypothesis tests and confidence intervals, and, preferably, analysis of variance. The course "Statistics for Research Workers" would be suitable preparation.

## ***Course presenter:***

The presenter is Dr Graham Hepworth, Consultant for the Statistical Consulting Centre and Senior Lecturer in the Department of Mathematics & Statistics. Graham has had extensive experience over two decades in the area of design and analysis of experiments, supervising trials in forestry, horticultural science, animal studies, medicine and the social sciences.