

**Statistical Consulting Centre**  
**Statistics for Research Workers using R**  
**and R Markdown**  
**15 February to 12 March 2021 (Online)**  
**Enrolment form for fee-paying participants**



Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Employer: \_\_\_\_\_

Department: \_\_\_\_\_

Address: \_\_\_\_\_ Suburb: \_\_\_\_\_ Postcode: \_\_\_\_\_

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 attachment for further information, including course dates, content and pre-requisites.

\_\_\_\_\_

Signature Date

**Course Fees:**

Total Owing (GST incl) Full: \$1485.00

UOM PG Student: \$1100.00 Student ID: \_\_\_\_\_

Method of Payment:

Please send an internal charge-out for **\$1350/\$1000** (GST excl) to \_\_\_\_\_ (Dept Number).

Or Full accounting string: \_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_

Finance person: \_\_\_\_\_ Finance Email: \_\_\_\_\_

Cheque for **\$1485/\$1100** (GST incl), payable to Statistical Consulting Centre, enclosed.

Please send/fax me a tax invoice for **\$1485/\$1100** (GST incl).

Name and address for tax invoice, if different from above:

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Credit card payment: Amount: **\$1485/\$1100** (GST incl)

To Pay by credit card you need to go online at:

<http://ecommerce.science.unimelb.edu.au/product.asp?pID=57&cID=12&e=1>

**Payment is required to confirm enrolment.**

**Statistical Consulting Centre**

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# Statistics for Research Workers using R and R Markdown

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

This course is an introduction to statistical methods. The course will cover:

- Descriptive statistics; graphs, tables, summary statistics. Introduction to R.
- Introduction to estimation and confidence intervals.
- The normal distribution; means and variances of sums of random variables; the Central Limit Theorem; the normal approximation to the binomial distribution.
- Confidence intervals for means and proportions.
- Introduction to hypothesis testing.
- Tests for differences in location between two populations with matched samples: sign test, Wilcoxon signed-rank test,  $t$ -test. The relationship between confidence intervals and hypothesis testing.
- Tests for differences in location between two populations with independent samples:  $t$ -test.
- Testing for difference in location of more than two populations. Analysis of variance (F-test), multiple comparisons.
- Two-way classifications: analysis of variance (F-test), interaction.
- Determination of sample size.
- Design of experiments: randomization, blocking, replication, confounding. Standard designs.
- Correlation and straight line regression.
- Multiple regression.
- Analysis of categorical data; contingency tables.

You can expect to spend an average of 3 hours per day on the course. There will be a mix of pre-recorded lectures, live Q&A (via Zoom) with course presenters and Zoom tutorial sessions. Lecture material is pre-recorded to support flexibility in online learning.

## Lectures

On Mondays and Thursdays, pre-recorded lecture material will be provided. On average there are 2.5 hours of lectures on these days.

## Live Q&A

At 4:30 on Mondays and Thursdays, there will be live Q&A with the course presenters to follow up on any questions you have about the pre-recorded lectures.

## Tutorial sessions

On Tuesdays and Fridays, there will be 2-hour tutorial sessions where practical work using software can be done with the support of experienced tutors. The tutorials are planned to start at 10am.

## Prerequisites

There are no formal prerequisites though it is expected that most participants will have studied mathematics at VCE level, or equivalent. **Participants need to be comfortable with a limited amount of mathematical notation.** The onus is on participants to check that the course suits their needs. Please do this carefully.

## Course presenters

Professor Ian Gordon, the Director of the Statistical Consulting Centre and Dr Sue Finch, who have given many similar courses previously.