
ANNOUNCING A HYBRID SHORT COURSE
Introduction to statistical modelling and data analysis in R
16-18 July 2024

The Centre for Statistics in Ecology, Environment and Conservation ([SEEC](#)) at the University of Cape Town is presenting a hybrid (**in-person and online**) short course in statistical data analysis and experimental design using R. The course aims to equip participants with practical experience and skills in analysing data, using some statistical techniques frequently used in the sciences. The skills include designing experiments, choosing appropriate statistical methods for visual display and statistical modelling of data, model checking, interpretation and reporting of statistical results, and understanding limitations of statistical methods and data. The course uses the R statistical package throughout but we do not assume prior knowledge of this package.

The course is targeting **research students or scientists** that require these skills for their work.

The course will be run for a **full three days** (16-18 July 2024) and will cover the following broad topics (see next page for more details):

- Introduction to R
- Introduction to statistical modelling
- Regression
- Design and analysis of experiments
- Generalised linear models

The course will assume basic knowledge of statistical analysis fundamentals such as the ideas of variability of observations and samples, probability distributions, and the basic principles of hypothesis testing. It will be preferable that you have done at least a first year university level statistics course (if you need to brush up then please visit a web resource such as this example: <https://www.khanacademy.org/math/ap-statistics>). You will need your own computer with the latest version of the [R Statistical package](#) and [R-Studio Desktop](#). If you have no prior experience with R, we recommend that you familiarise yourself with the basics before the course, e.g. by going through the [R4DS book](#) or the free online course on [DataCamp](#).

The **course fee** is R5000 for in-person attendance at the University of Cape Town and R4500 for online attendance. We unfortunately are not offering any bursaries.

[APPLY FOR THE COURSE](#)

All those who would like to take the course should click the link above.

- Deadline for applications is **9 June 2024** and applications will be dealt with on a first come first served basis. In-person spaces are limited. Applying for the course will be taken as a commitment to pay the course fees if you are accepted.
- Cancellations should be made in writing and emailed to Lihle.Khetshane@uct.ac.za
- A 15% cancellation fee will apply before 16 June 2024. Thereafter a 100% cancellation fee will apply. No withdrawals will be considered after the deadline and no-shows will be required to pay the costs in full.
- Note that should payment not be received by the payment deadline, then we reserve the right to allocate your place to someone else. You are still liable for the course fee if the place is not filled.
- Where payment through official employment channels is slow, please apply early.

For queries related to the course, please contact Dr Vernon Visser (vernon.visser@uct.ac.za).

Course Outline

Module 0: Introduction to R and statistical modelling

Module 1: Regression

Work unit 1: Correlation and simple regression

Work unit 2: Multiple linear regression

Work unit 3: Extensions of the linear model

Work unit 4: Model Selection

Module 2: Design and analysis of experiments

Work unit 1: Introduction to experimental design

Work unit 2: Completely randomised designs

Work unit 3: Randomised Block Designs

Work unit 4: Factorial Experiments

Module 3: Generalised linear models

Work unit 1: Introduction to generalised linear models

Work unit 2: Logistic regression

Work unit 3: Poisson regression