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## ANNOUNCING AN ONLINE SHORT COURSE 24-28 October 2022

### Introduction to statistical modelling and data analysis in R

The Centre for Statistics in Ecology, Environment and Conservation ([SEEC](#)) at the University of Cape Town is presenting an 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. There is space for a maximum of 80 participants.

The course will be run in the mornings over five days and will cover the following broad topics (see next page for more details):

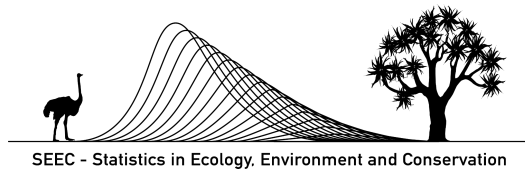
- Introduction to R
- Introduction to statistical modelling
- Regression
- Design and analysis of experiments
- Generalized linear models

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 1st 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>). The course will be run online so 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 R3500 for all participants. We unfortunately are not offering any bursaries.

**Apply for the course:** All those who would like to take the course should fill out this [form](#).

- Deadline for applications is **30 September 2022** and applications will be dealt with on a first come first served basis. Spaces are limited. Applying for the course will be taken as a commitment to pay the course fees if you are accepted. This means that



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you and/or your institution will be liable for full payment unless you withdraw in writing (to [vervis@gmail.com](mailto:vervis@gmail.com)) before the payment deadline. No withdrawals will be considered after the payment deadline and no-shows will be required to pay the costs in full.

- Deadline for payment is Sunday 23 October 2022.
- 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 please contact Dr Vernon Visser ([vernon.visser@uct.ac.za](mailto:vernon.visser@uct.ac.za)) or Sharon Bosma ([sharon.bosma@uct.ac.za](mailto:sharon.bosma@uct.ac.za)).

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### 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 randomized designs  
Work unit 3: Randomized Block Designs  
Work unit 4: Factorial Experiments

##### Module 3: Generalized linear models

Work unit 1: Introduction to generalized linear models  
Work unit 2: Logistic regression  
Work unit 3: Poisson regression