



jumping rivers

Programming with R

The benefit of using a programming language such as R is that we can automate repetitive tasks. This course covers the fundamental techniques such as functions, for loops and conditional expressions. By the end of this course, you will understand what these techniques are and when to use them. This is a one-day intensive course on *R*.

Course Outline

- Conditionals: using `if` and `else` statements in R
- Functions: what a function is, how are they used, and how can we construct our own functions.
- Looping in R: an introduction to the concept of looping in R. In particular `for` and `while` loops.
- The apply functions: `apply`, `tapply` and other members of the apply family.
- Help: The help system in R can at first glance appear daunting, however, after the initial shock, R's documentation is second to none.
- Project structure: Practical tips on how to structure a project.

Learning Outcomes

By the end of the day participants will...

- have a thorough understanding of `if` and `else` statements, functions, `for` loops and the `apply` family
- understand how the aforementioned techniques can be applied to their own data
- understand how these techniques will improve efficiency and results.

Course Structure

This course will be structured as follows:

- 9:00 -- 9:15: Registration and coffee
- 9:15 -- 10:45: Lecture
- 10:45 -- 11:15: Coffee break
- 11:00 -- 12:15: Practical 1
- 12:15 -- 1:15: Lunch (not provided)
- 1:15 -- 2:15: Lecture
- 2:15 -- 4:30: Practical 2 (with a coffee break)

These times are intended to give a flavour of how the course is run and are subject to change.

Prior Knowledge

The course follows on from the *Introduction to R* course. It is assumed that all students have

attended this course (or have equivalent skills). This course is suitable for all fields of work. Previous attendees include biologists, statisticians, accountants, engineers & students, i.e., anyone who uses a spreadsheet!