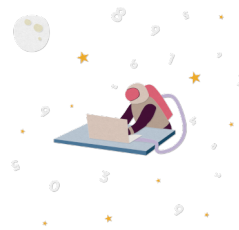


## Programming with R

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.
- **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

#### Session 1:

*By the end of the session 1 participants will...*

- understand basic functions, multiple arguments and variable scopes.
- have a thorough understanding `for` loops.
- be able to apply basic functions.

#### Session 2:

*By the end of the session 2 participants will...*

- have a thorough understanding of conditionals such as `if`, `else` and `else if` statements.
- be familiar with possible R workflows such as directory structure and working with directories.
- understand how the aforementioned techniques can be applied to their own data.
- understand how these techniques will improve efficiency and results.
- understand where to find help in R using resources and the `help()` function.

*This course does not include:*

- Much detail on using the `{tidyverse}` to manipulate and clean data, for this see the [Data Wrangling with Tidyverse](#) course run by Jumping Rivers.

## Attendee Feedback

- “We started from the beginning and achieved a lot by the end. I’m not scared of R any more. It was actually fun!”
- “You cover all the aspects that we need to learn to get started.”
- “The course was excellent, as it has allowed me to do all the analysis and graphics for my PhD thesis in R, which has certainly saved me a lot of time and allowed me to do some advanced analysis that would have just been too difficult to do otherwise.”