

R Programming Advanced

Course Overview – 1-day course

Efficient use of R

This course will enable you to build on your base knowledge of R. Move from simply getting things done in R to getting things done more quickly and efficiently.

Detailed Content

Working more efficiently in R

How to work more efficiently in R
Vectorisation
Using better functions
Concise code
Reusable scripts
Custom functions
Loops and other control structures
Loop alternatives

Functions to reduce typing

Printing objects after creating with and within
Inserting multiple quotation marks

Create your own functions

Why write your own functions?
Basics of functions
What is a function?

Creating your own functions
Syntax for writing your own function
More complex functions
Ellipses and further arguments
Scope
Loading your functions

Loops and control structures in R

if and if else
Loops for loops
Saving results from a loop
Improving your code while loops
repeat loops

Loop alternatives

Functionals
apply functions

split
map functions
map variants
Returning a vector
walk
Loop, apply or map?

Tidyverse piping syntax

Purpose
Using the pipe
Pipe variants
The tee operator
The exposition operator

Plotting with ggplot2

The grammar of graphics
Required components
Using ggplot()
Scatterplot
Line chart
ggplot2 resources

What do I need to know to attend?

- Attended our Introduction to R programming course or have basic familiarity with R.
- You will not be expected to code unassisted but will learn more and participate more easily if you have at least a fundamental understanding of R syntax.
- Basic understanding of statistics (mean, median, standard deviation, variance).

Learning Outcomes

In this course, you'll learn to:

- write custom functions
- write more concise code
- use functionals, loops and other control structures
- create graphics with ggplot2.