

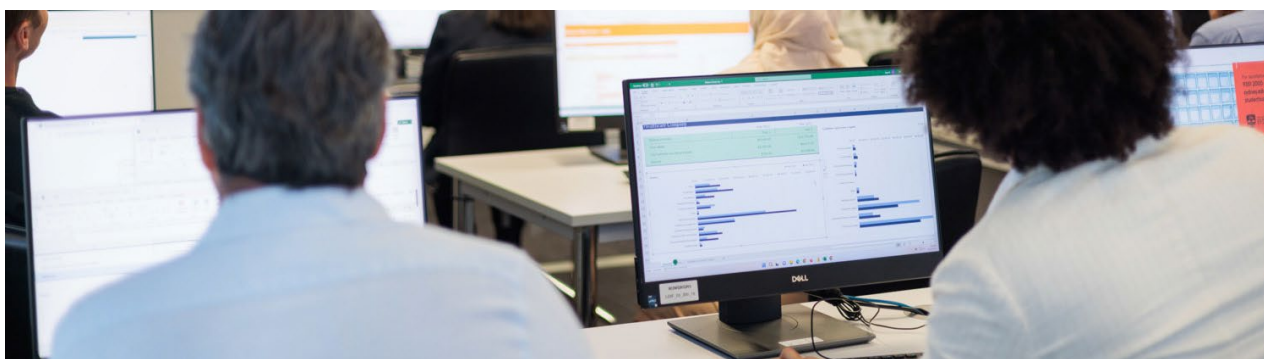


THE UNIVERSITY OF
SYDNEY

R Programming Course: Intermediate

*Centre for
Continuing Education*

R Programming Course: Intermediate



R is an elegant programming language specifically designed for data science, analytics, and statistics. This Intermediate R Programming course guides participants through more advanced data processing, analytics, and visualisation techniques in R.

By the time you leave our course, you will have a set of data manipulation tools, including tidyverse, dplyr, and ggplot at your fingertips. These tools will help you prepare data for more advanced analytics and modelling. You will also learn to perform statistical regression modelling and hypothesis testing on data sets to uncover valuable patterns and insights. Finally, we will cover programming techniques unique to the R, helping you learn to write optimised and efficient code.

Bringing a combination of private, public, and academic professional experience, your instructor will guide you through Intermediate R, showing you step by step how to utilise R for sophisticated data analytics.

Intended audience

Business professionals, managers, IT knowledge workers and lifelong learners looking for a deeper knowledge of data processing and analytics in R will find Intermediate R Programming helpful.



Course duration

1 session, 8 hours total



Time

9am - 5pm



Format

Face-to-face
or
Online in real-time



Dates

Browse available
[course dates](#)

Prerequisites

This course is aimed at professionals with some basic exposure to the R programming language. Participants of this course should be familiar with the learning outcomes of the R Programming Course: Introduction.



Upon completion

Every participant receives a University of Sydney certificate of completion.



Aims

This course aims to provide an in-depth, more advanced coverage of data processing and analysis in the R programming environment. By the end of the day, you should be comfortable processing, manipulating and preparing data for further analysis, visualising data using elegant graphics, computing regression statistics and confidence intervals, and efficiently programming in the R environment.



Outcomes

By the end of this course, you should be able to:

- prepare data
 - work with advanced R data types like `data.frames` and lists
 - subset data for deep queries
 - use the tidyverse suite of packages for data science
 - utilise the `data.table` package for faster processing
- perform analytics and statistical inference
 - explore data using `ggplot` visualisations
 - build and analyse linear regression models
 - run hypothesis tests and confidence intervals
 - produce advanced data visualisations with the `ggplot` package
- program efficiently in R
 - optimise RStudio
 - develop `for/while` loops for data flows
 - vectorise R data frames
 - write efficient and optimised R code
 - utilise custom functions for faster processing.



Content

- The R Statistical Programming Language
- The R Studio Integrated Development Environment (IDE)
- Tidyverse suite of packages for data processing (including `dplyr`, `ggplot2`, and more)
- Advanced data types in R
- Data processing and preparation techniques – data subsetting, pipe operators
- R logic flows – `for/while` loops, vectorizing
- `data.table` package
- Summary statistic functions
- Linear regression modelling
- Confidence intervals and hypothesis testing
- `ggplot` for elegant statistical graphics
- Programming efficiency/computational speed checks
- Error handling



“Great! An eye opening experience! I cannot wait to attend an R GIS related course, if it is ever available on this platform. Thank you!”

Bartec Kawalec

“The facilitator did a great job of presenting the content and was easy to follow along with. Really well done, thank you very much!”

Karina Grunewald Zola



“The training was adapted very well to online delivery and the facilitator was very knowledgeable. It was really helpful being provided with the entire annotated code, which will serve as a great reference document.”

Savannah Minihan



Delivery style

This course is taught through a series of concepts, examples, problem exercises, and in class knowledge challenges. The material is presented so that participants of varying backgrounds, skills and abilities can all move together at a brisk, but comfortable learning pace.

Materials

A link to access and download the following online course materials is provided:

- PowerPoint notes with examples
- all code and script files used throughout the course
- ancillary hand-outs and learning aids.



Organisational training and development

This course can be delivered as a private session for groups, and tailored to meet the needs of your business. Contact us to discuss our range of organisational training solutions.

[Learn more](#)



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We recognise and pay respect to the Elders and communities – past, present, and emerging – of the lands that the University of Sydney's campuses stand on. For thousands of years they have shared and exchanged knowledges across innumerable generations for the benefit of all.

Empower ambition,
inspire leadership

For more information

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