

Below is a curated list of resources for basic skills in R that students are expected to know prior to the courses. We have included both video and written guides to help, as well as quick reference materials that you can consult to help remember the names of functions, etc. once you have learned the skills.

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# Primary Skills

## Installing R and RStudio

### Written

[Installing R and RStudio | Hands-On Programming with R](#)

### Video

[Install R and RStudio](#)

[How to download and install R and RStudio](#)

### Reference Sheets

[RStudio IDE : : CHEATSHEET](#)

## Installing packages

### Written

[R Packages | Hands-On Programming with R](#)

### Video

[Install R packages](#)

### Reference Sheets

[Base R](#) (Including packages)

## Creating projects, setting working directory

### Written

[RStudio Projects and Working Directories: A Beginner's Guide | R-bloggers](#)

[Introduction to renv](#)

### Video

[Setting working directory](#)

[Using RStudio projects](#)

### Reference Sheets

See Best Practices and Gitub sections

## Github integration

### Written

[Setting up a \(github\) project in RStudio | An Introduction to R](#)

### Video

[Using git and github in Rstudio](#)

### Reference Sheets

[Using Git and GitHub with RStudio: : CHEATSHEET](#)

## Data import and export

### Written

[Loading and Saving Data in R | Hands-On Programming with R](#)

### Video

[Data Import in R: best practices](#)

[Exporting data in R](#)

### Reference Sheets

[Data import with the tidyverse : : CHEATSHEET](#)

## Data types and structures

### Written

[Data types | An Introduction to R](#)

[Data structures | An Introduction to R](#)

[The Ultimate Opinionated Guide to Base R Date Format Functions | R-bloggers](#)

[A Comprehensive Introduction to Handling Date & Time in R | R-bloggers \(tidyverse\)](#)

### Video

[6 data types of R](#)

[Vectors, matrices and arrays, dataframes, tibbles  
str\(\) function](#)

### Reference Sheets

[Dates and times with lubridate : : CHEATSHEET](#)

## General best practices in coding

### Written

[Organizing data in spreadsheets](#)

### Reference Sheets

[Best Practice for R : : CHEAT SHEET](#)

## Operators

### Written

[R Operators \(With Examples\)](#)

### Video

[Logical operators](#)

[%in% operator](#)

[%>% \(pipe\) operator](#)

[Slicing \[ \] operator](#)

[which\(\) function](#)

### Reference Sheets

[Getting Started with R :: CHEATSHEET](#)

## Summarizing data

### Written

[Summarising data frames | An Introduction to R \(base\)](#)

[The Complete Guide: How to Group & Summarize Data in R \(tidyverse\)](#)

### Video

[Using base R](#)

[Using tidyverse](#)

### Reference Sheets

[Data transformation with dplyr : : CHEATSHEET](#)

## Subsetting data

### Written

[How to Subset a Data Frame in R \(4 Examples\)](#)

### Video

[Subset data with base R](#)

[Subset data with tidyverse](#)

### Reference Sheets

[Data transformation with dplyr : : CHEATSHEET](#)

## Merging and combining data frames

### Written

[How to merge data in R using R merge, dplyr, or data.table | InfoWorld](#)

[How To Merge Two R Data Frames - ProgrammingR](#)

### Video

[Binding rows and columns with base R](#)

[Binding rows and columns with tidyverse](#)

[Merging data frames with base R](#)

Merging data frames with tidyverse: [left\\_join\(\)](#), other kinds of join() [part 1](#) and [part 2](#)

### Reference Sheets

[Data transformation with dplyr : : CHEATSHEET](#)

## Regular Expressions (aka regex or grep)

### Written

[A Guide to R Regular Expressions With Examples | DataCamp](#)

### Video

[R tutorial: Regular expression basics](#)

[Working with Regular Expressions Using StringR in R](#)

### Reference Sheets

[Basic Regular Expressions in R :: CHEATSHEET](#)

[String manipulation with stringr : : CHEAT SHEET](#)

## Data tidying and reorganization

### Written

[Tidy data • tidyr](#)

### Video

[Pivot longer](#) and [pivot wider](#), [cast](#) and [melt](#)

### Reference Sheets

[Data tidying with tidyr : : CHEATSHEET](#)

[Data transformation with dplyr : : CHEATSHEET](#)

## Basic plotting (both base and ggplot)

### Written

[Base Plotting in R](#)

[Simple base R plots | An Introduction to R](#)

[Introduction to ggplot2](#)

### Video

[Graphs and Descriptive Statistics with R](#)

[ggplot for plots and graphs. An introduction to data visualization using R programming](#)

### Reference Sheets

[Base R Graphics Cheat Sheet](#)

[Data visualization with ggplot2 : : CHEATSHEET](#)

[R graph gallery](#)

## T-tests and other basic statistics

### Written

[How to Do a T-test in R: Calculation and Reporting - Best Ref - Datanovia](#)

[How to Do Linear Regression in R | DataCamp](#)

### Video

[How to do a t-test in R](#)

## RMarkdown

### Written

[R Markdown: The Definitive Guide](#)

### Video

[Rmarkdown - Introduction and basics](#)

### Reference Sheets

[rmarkdown : : CHEATSHEET](#)

# Highly useful other skills (in progress)

## Loops

**Written**

**Video**

[for loops](#)

[while loops](#)

**Reference Sheets**

## Creating your own functions

**Written**

**Video**

[How to write functions in R](#)

**Reference Sheets**

## Intro to the CLI

**Written**

**Video**

[Git tutorial for dummies, using the CLI](#)

**Reference Sheets**