

Introduction in R and RStudio

On the first course day (31st January) we will provide a short introduction into R and RStudio.

We will cover the following topics and functions:

- R and RStudio Installation
- R-Projects, RMarkdown and Quarto
 - How to use projects
 - How to set up an RMarkdown/Quarto File and its most important functions
- Install and load packages
 - `install.packages()`
 - `library()`
- Load and save data
 - `read_csv()`
 - `write_csv()`
- Data wrangling in tidyverse
 - `mutate()`
 - Filter and select data: `filter()`, `select()`
 - Change the data frame: `as.factor()`, `pivot_longer()`, `pivot_wider()`, `relevel()`
 - Create new variables based on conditions: `case_when()`

- use pipes `|>`
- Summarize data
 - `summarise()`
- Data visualisation using the `ggplot` - package
 - choose an informative graph
 - mapping: `aes()`
 - geoms: `geom_boxplot()`, `geom_violin()`, ...
 - change colors, shapes, labels & more
- Ressources for further learning