



## Data Science: Statistical programming with R (S24) 6-10 July 2026

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| Day       | Time          | Type                                      | Description   | Location   |
|-----------|---------------|---|---|--|
| Monday    | 09:00 – 12:00 | Lecture, computer lab, Plenary discussion | Welcome. Introduction tot the R environment (RStudio) and the online resources. Introduction to reproducible data analysis with R Markdown. Organise your work with R Projects. | <a href="#">Koningsberger building</a><br>Room Atlas |
|           | 12:00 - 13:00 | Lunch Break                               | In <a href="#">Educatorium</a>  |  |
|           | 13:15 - 16.30 | Lecture, computer lab, Plenary discussion | R programming basics: how to work with packages and functions, resources and getting help, R objects and data types.  |  |
| Tuesday   | 09:00 – 12:00 | Lecture, computer lab, Plenary discussion | Data manipulation with tidyverse: dplyr functions, pipe operator. Re-coding and transforming variables.   |  |
|           | 12:00 - 13:00 | Lunch Break                               | In <a href="#">Educatorium</a>  |  |
|           | 13:15 - 16.30 | Lecture, computer lab, Plenary discussion | Data visualisation with ggplot2. Uni- and bivariate plots. Plots for numerical and categorical data. Plot arrays and faceting.  |  |
| Wednesday | 09:00 – 12:00 | Lecture, computer lab, Plenary discussion | Fitting linear models. Continuous and categorical predictors. Interactions.   |  |
|           | 12:00 - 13:00 | Lunch Break                               | In <a href="#">Educatorium</a>  |  |
|           | 13:15 - 16.30 | Lecture, computer lab, Plenary discussion | Model diagnostics. Linearity, normality, homoscedasticity and outliers. Polynomials and splines.  |  |
| Thursday  | 09:00 – 12:00 | Lecture, computer lab, Plenary discussion | More advanced statistical programming: write your own function, for loops.  |  |
|           | 12:00 - 13:00 | Lunch Break                               | In <a href="#">Educatorium</a>  |  |



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|--------|---------------|--|--|--|
|        | 13:15 - 16.30 | Lecture,<br>computer lab,<br>Plenary<br>discussion | Inferential models and resampling<br>(bootstrap).  | <a href="#">Koningsberger<br/>building</a><br>Room Atlas |
| Friday | 09:00 – 12:00 | Lecture,<br>computer lab,<br>Plenary<br>discussion | Report the results of data analyses in<br>publication ready tables and other<br>communication modes in Rmarkdown.<br>Apply what you learned in this course on<br>a data set: the entire data analysis cycle<br>(import, tidy, transform, visualise, model,<br>communicate the results) and make a<br>report or presentation. |  |
|        | 12:00 - 13:00 | <i>Lunch Break</i>                                 | In <a href="#">Educatorium</a>   |  |
|        | 13:15 - 16.30 | computer lab,<br>Plenary<br>discussion             | Presentations of statistical analyses with<br>slides or report.  |  |

In the morning, at around 10:00, there will be coffee and tea breaks. Additionally, in the afternoon around 15:30, breaks will include sodas and fruit.

For information about the Social Programme, please visit the [Utrecht Summer School website!](#)