

# Utbildningar i R

*R har på senare tid blivit ett av de mest använda för statistiska beräkningar, datavisualisering och AI. På våra R-kurser lär dig använda programmet samt den integrerade utvecklingsmiljön RStudio.*

## R 1 - Introduction to R

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**This course helps you get started with R. We'll cover the basics of R, ranging from importing and handling data to running common tests and fitting linear regression models.**

The powerful plotting capabilities of the ggplot2 package are also covered. Both basic statistical concepts and fundamental topics in R programming are discussed. This course is a great fit if you're curious about R, or already know that you want to use its many tools for advanced data analysis.

**Course goals:** To be able to use R to import data, describe data using graphs and tables, and to be able to run simple tests and regression models.

**Prerequisites:** Basic computer skills.

## R 2 - Linear regression & ANOVA

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**R2 provides you with a solid understanding of modern linear regression and ANOVA models.**

We will have a closer look at how these models work and how R can be used to build, visualise and interpret such models. We will also cover the bootstrap and permutation tests, and how these can be used to obtain confidence intervals and p-values without having to assume a normal distribution for your data.

**Course goals:** To be able to use R to fit, visualize and interpret linear regression and ANOVA models.

**Prerequisites:** R1 or similar.

## R 3 - Advanced regression models & survival analysis

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**The course covers some common but advanced regression models as well as survival analysis.**

We will cover non-linear regression models like logistic regression and Poisson regression, where the response variable can be either binary (yes/no) or counts. In survival analysis, we'll have a look at Kaplan-Meier survival curves and regression models, including Cox proportional hazards regression.

**Course goals:** To be able to use R to fit, visualise and interpret models for logistic regression, count regression and survival analysis.

**Prerequisites:** R1 and R2 or similar.

## R 4 - Visualisation and data exploration

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**This course will teach you how visually explore data in R, and how to create great-looking graphics using the powerful ggplot2 package.**

Topics covered include outlier detection, visualisation of trends, and multivariate data. It also covers cluster analysis as well as dimension-reduction of complex data using principal component analysis (PCA).

**Course goals:** To be able to use the R package ggplot2 to visualise and explore data.

**Prerequisites:** R1 or similar.

## R 5 - Basic course in Propensity score matching

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**This course helps you getting started with Propensity score matching applied in R / Rstudio.**

R 5 begins with a review of the basics theory behind to account for unbalance in observational research using Propensity score matching. We then alternate between theory and interactive examples, exercises and discussions where we useutilizing the program R / Rstudio. The course provides a good introduction, both for beginners and for those who want to refresh old knowledge about how to think regardingin comparisons in observational data.

**Course goals:** To understand the basics of Propensity score matching and to be able to do the most common calculations for matching in R / Rstudio.

**Prerequisites:** Basic computer skills.

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