



## DEPARTMENT OF EDUCATION AND SPECIAL EDUCATION

### **RQRM250, Introduction to Empirical Analysis with R, 2.5 credits**

Introduktion till empirisk analys med R, 2,5 högskolepoäng

*Third-cycle level / Forskarnivå*

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#### **Confirmation**

This syllabus was confirmed by the Department of Education and Special Education on 2025-09-03, and is valid from Autumn semester 2025.

#### ***Responsible Department***

Department of Education and Special Education, Faculty of Education

#### **Entry requirements**

For admission to the course, the applicant has to be registered as a doctoral student in the third cycle or have a doctoral degree.

#### **Learning outcomes**

The course is intended to provide an introduction to and overview of basic concepts of the statistical environment R. On successful completion of the course, the third-cycle student is expected to be able to:

##### ***Knowledge and understanding***

- Account for fundamental concepts in R
- Describe and explain elements of an R script

##### ***Competence and skills***

- Import, handle, and describe data
- Compute descriptive statistics
- Data visualization

### *Judgement and approach*

- Evaluate the applicability of the R environment in their research
- Reflect on basic descriptive statistical concepts and visualizations

## **Course content**

R is an increasingly used statistical environment maintained by an international team of developers. The course introduces the basic concepts of the statistical environment R. During the course, students will use RStudio, which is an integrated development environment (IDE) to work with R. The course covers data management, computing descriptive statistics, and creating plots.

## **Types of instruction**

During the first week of the course, participants meet for two days on campus for demonstrations and hands-on activities. Thereafter, the course continues as an online course with seminars, exercises, and supervision.

### *Language of instruction*

The course is given in English

The course can be given in Swedish if all participants agree on this.

## **Grades**

The grade Pass (G) or Fail (U) is given in this course.

Pass means that the learning outcomes have been achieved.

## **Types of assessment**

The course is examined through practical assignments throughout the course[SJ1] [SJ2] .

Participants will complete data management tasks, compute descriptive statistics, and visualize data. A pass grade requires active participation in assignments and seminars, and attendance at all mandatory tasks.

## **Course evaluation**

The course will be evaluated after the last session. The results will be used as a guide for improving the course.

## **Other information**

This is a third-cycle course within the school of R-QRM.

*Collaborating Departments*

Department of Education and Special Education (department in charge), University of Gothenburg, in collaboration with Department of Applied Educational Science, Umeå University, Uppsala University, Stockholm University.

*Technical equipment*

To participate in the course, access to own computer/laptop is needed together with computer accessories for online communication (camera, headphones, mic). Please install R before the first campus day.

The number of participants is limited to 15.