Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PFS0132 Explanatory data analysis with R, 6.0 credits

Syllabus approved

2016-02-08

Subjects

Mathematic Statistics

Education cycle

Third cycle

Grading scale

Pass / Failed
The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

Basic course in R will be an asset but is not necessary. Each student should have own PC computer.

Objective, including learning outcomes

To give an introduction to explanatory data analysis by means of the R software.

Learning outcomes
On completion of the course, the student will be able to:
- Install the R and R-Studio software and dependent packages
- Read the program documentation and look for solutions for real problems connected with programming in R
- Do an extensive graphical presentation of data by means of R packages: base, lattice and ggplot2
- Do a summary statistics of data by means of packages: base, dplry and reshape2
- Use the R statistical software for a basic statistical analysis
- Have an idea about further possibilities in data analysis for ex. GIS, maps, k-analysis, interesting packages etc.
- Have a knowledge about existing literature and trends in the topic

Content

- Software installation
- Short introduction to R
- Importing and summarizing data
- Data sources
- Data retrieval and data wrangling
- Principle of analytic graphics
- Plotting systems in R
- Analytical systems in R

Requirements for examination

To fulfill grade requirements, students have to complete:
- Attend 80% of the scheduled lectures and exercises
- Complete course exercises <- the feedback to each exercise will be given
- Send the analysis of own data and a response for the analysis of other student
- Complete oral presentation of own data. In a case of lack of data, the data will be delivered.

Additional information

The first week of the course will be held in Alnarp. It will be a combination of lectures and practical exercises. During this week reading a course literature is an essential part. At the second week of the course participants will solve practical exercise which will be a prerequisite to receive a positive grade from the course. This part of the course will be held in the participant's home places. In the third

week, participants will prepare an analysis of own data. Later, the analysis will be send to other student to critically comment on it. Finally, depending on number of participants days will be reserved for oral presentation of own projects.

Responsible department

Department of Southern Swedish Forest Research Centre