Introductory Time Series Analysis

Single subject and programme course

7.5 credits

Grundläggande tidsserieanalys

732G42

Valid from: 2018 Spring semester

Determined by
Course and Programme Syllabus Board
at the Faculty of Arts and Sciences

Date determined
2018-04-23

Offered for the last time
Autumn semester 2023

Replaced by
732G52

Main field of study
Statistics

Course level
First cycle

Advancement level
G1N

Course offered for
- Bachelor´s Programme in Statistics and Data Analysis

Intended learning outcomes
On completion of the course, the student should be able to:
- account for basic methods for the analysis of time series data
- use basic methods for the construction and use of indices
- account for how to validate time series models
- use statistical software to: fit appropriate time series models to given data sets, make inference about time series components, and compute forecasts and their statistical uncertainty
- interpret results of analyses
- assess the quality of data

Course content
Index theory:
- Fixed base index and chain index.

Time series analysis:
- Time series regression
- Decomposition
- Exponential smoothing, Holt Winters methodology
- ARIMA, SARIMA
- Forecasting

Teaching and working methods
Apart from independent studies, the teaching consists of lectures, teaching sessions, supervision, a project, review of another project, seminars, and computer exercises. Homework and independent study are a necessary complement to the course.

Examination

The course is examined individually through a written examination and through a project that is presented both in written form and orally in a discussion seminar. Detailed information about the examination can be found in the course's study guide.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it. If the coordinator has instead recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

Three-grade scale, U, G, VG

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is carried out in such a way that both men´s and women´s experience and knowledge is made visible and developed.

Department

Institutionen för datavetenskap