



Faculty of Arts and Social Science  
Statistics

# Syllabus

## Time series analysis

<b>Course Code:</b>	STGB06
<b>Course Title:</b>	Time series analysis <i>Tidsserieanalys</i>
<b>Credits:</b>	7.5
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

**Major Field of Study:**  
STA (Statistics)

### Course Approval

The syllabus was approved by the Faculty of Arts and Social Science 2016-09-06, and is valid from the Spring semester 2017 at Karlstad University.

### Prerequisites

Statistics 30 ECTS cr, or Statistics 15 ECTS cr with a combination of the following courses in economics: NEGB01 Economics - continuation course 30 ECTS cr or NEGB22 Econometrics 7.5 ECTS cr, plus either NEGC16 (NEAD17) Applied Econometrics 7.5 ECTS cr or NEGC47 Scientific Methods in Economics 15 ECTS cr, or equivalent.

### Learning Outcomes

Upon completion of the course, students should be able to:

- analyse different statistical time series models,
- estimate components in a time series model,
- give an account of the basic theory of stationarity and non-stationarity,
- define properties of time series models,
- discover and evaluate different autocorrelation structures, and
- use simple simulation methods.

### Content

The course deals with the use of statistical and mathematical methods for analysing time series data.

The course comprises the following components:

- descriptive methods
- autoregressive processes
- regression models
- different statistical tests, including the Unit Root test
- AR, MA, ARMA and ARIMA models

Applications are illustrated with the help of a computer.

**Reading List**

See separate document.

**Examination**

Assessment is based on a written exam and individual hand-in assignments.

**Grades**

One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course.

**Quality Assurance**

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

**Course Certificate**

A course certificate will be provided upon request.

**Additional information**

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.