



Faculty of Arts and Social Science  
Statistics

## Syllabus

### Introductory Statistics and Regression Analysis

<b>Course Code:</b>	STGA14
<b>Course Title:</b>	Introductory Statistics and Regression Analysis <i>Introductory Statistics and Regression Analysis</i>
<b>Credits:</b>	15
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has only upper-secondary level entry requirements (G1N)
<b>Major Field of Study:</b>	STA (Statistics)

#### Course Approval

The syllabus was approved by the Faculty of Arts and Social Science 2015-09-08, and is valid from the Spring semester 2016 at Karlstad University.

#### Prerequisites

General admission requirements plus either

- field-specific eligibility A4 (mathematics 3b or 3c; civics 1b or 1a1+1a2) with the exception of civics, or
- field-specific eligibility 4 (English B, mathematics C, Civics A) with the exception of civics or

admission to one of the Master programmes Service Management SASSM, Marketing SASMF or Accounting and Control SASRS

#### Learning Outcomes

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

- compile and graphically present different types of data consisting of multiple variables, and estimate and interpret summary measures,
- define point estimates and give an account of some of their properties,
- understand statistical models comprising one or several variables,
- perform statistical inference for statistical models and interpret the results,
- critically use and evaluate different statistical methods, and
- use a statistical software as an aid in statistical analysis.

#### Content

The course deals with the following components:

- data collection and working with data
- compiling and presenting data descriptively
- basic sampling theory and sampling distributions

- point and interval estimates and their properties
- introduction to hypothesis testing and p-values
- models of linear regression, model specification, and residual analysis
- inference theory for models in regression analysis
- the concepts multicollinearity, heteroscedasticity, and autocorrelation
- models for handling multicollinearity and heteroskedasticity

Applications are computer illustrated.

### **Reading List**

See separate document.

### **Examination**

Assessment is based on written group tasks and a written exam.

### **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's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.