# SF2930 Regression Analysis 7.5 credits

## Regressionsanalys

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for SF2930 valid from Spring 2016

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Mathematics

## Specific prerequisites

Passed courses in analysis in one and several variables, linear algebra, numerical analysis, differential equations, mathematical statistics

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

To pass the course, the student should be able to do the following:

- use multiple regression as a statistical model to analyse various types of data: observational, experimental; real, ordinal and nominal
- interpret the parameters of the model
- judiciously analyse results of a regression
- identify and remedy multicollinearity, endogeneity and heteroskedasticity
- employ multiple regression, including LOGIT, using some statistical software, estimate confidence intervals, perform hypothesis testing and compute effect size (theta squared).

To receive the highest grade, the student should in addition show some skill in the mathematical and statistical technicalities.

## Course contents

Theory of the General Linear Model: structural interpretation and prediction; prediction- and confidence intervals; hypothesis testing using the F-test; methods for handling heteroskedasticity and endogeneity among covariates.

Applications on models with “dummies”: one- and two-way ANOVA, interactions, analysis of ordinal data.

Model selection and interpretation

## Course literature

See the course web page

## Examination

- TENA - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- OVN1 - Assignments, 3.0 credits, grading scale: P, F

Based on recommendation from KTH’s coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.