SF1644 Calculus in one Variable 8.0 credits

Analys i en variabel

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

Establishment

Course syllabus for SF1644 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Mathematics, Technology

Specific prerequisites

SF1643 Numbers and Functions.

Language of instruction

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

Intended learning outcomes

After completing the course, the student can use calculus in one variable to formulate, solve and analyze problems.

More precisely, the goal means that the student also can

- use the definition of a limit and determine limits;
- formulate and derive properties for maxima, minima and intermediate values of continuous functions;
- use continuous, monotone and invertible functions to solve some equations analytically and others numerically;
- use and understand derivatives for studying graphs, analyze inequalities and solve optimization problems;
- formulate the definition of an integral and analyze integrability;
- determine some integrals by primitive functions;
- use integrals to determine area, volume and length of curves;
- approximate functions with Taylor polynomials;
- solve some differential equations with integrals and others numerically;
- formulate and analyze some applied problems with differential equations;
- analyze infinite series with integrals.

Course contents

Course literature

Persson&Böiers/Analys i en variabel..

LTH/Övningar i analys i en variabel.

Examination

- TEN1 - Examination, 8.0 credits, grading scale: A, B, C, D, E, FX, 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.

Other requirements for final grade

The examination of the course is by a finishing written exam and some smaller written test and projects during the course. The tests and projects give credits for the final exam.

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.