SF1674 Multivariable Calculus 7.5 credits

Flervariabelanalys

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

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

Establishment

Course syllabus for SF1674 valid from Autumn 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Language of instruction

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

Intended learning outcomes

After the course the student should be able to

- use concepts. theorems and methods to solve and present solutions to problems within the parts of multivariable calculus described by the course content,
- read and comprehend mathematical text.

Course contents

Functions of several variables. Fundamental topological concepts in R^n. Differentiability and linear approximation of mappings.

Partial derivatives, differentials, gradient.

The chain rule in general form. The implicit function theorem.

Extreme value problems with and without constraints. Multiple integrals, coordinate changes, geometric applications. Elementary Vector Analysis: Line integrals and surface integrals, Gauss, Green's and Stokes' formulas.

Specific prerequisites

Active participation in SF1673 Analysis in one variable.

Course literature

The literature is published on the course webpage no later than four weeks before the course starts.

Examination

- TEN1 - Final Exam, 7.5 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.

The examiner decides, in consultation with KTHs Coordinator of students with disabilities (Funka), about any customized examination for students with documented, lasting disability.

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.