SF1689 Basic Course in Mathematics 6.0 credits

Baskurs i matematik

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 SF1689 valid from Autumn 2017

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Advanced mathematics from upper secondary school (courses 1-4).

Language of instruction

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

Intended learning outcomes

Having completed the course, the student will be able to:

- Use and derive some common identities for elementary functions, such as power laws, logarithms and trigonometric formulas.
- Solve equations that contain, for example, square roots, absolute value, trigonometric functions, inverse trigonometric functions, exponential functions and logarithms.
- Solve simple inequalities.
- Compute with complex numbers.
- Factorizing polynomials and solving polynomial equations by using the factor theorem and polynomial division.
- Determine whether certain functions are invertible and, where appropriate, compute the inverse.
- Compute with vectors in the plane and space and handle simple geometric problems involving lines and planes.
- Perform simple logical reasoning to draw correct conclusions from the calculations or given data.
- Present calculations and reasoning in such a way that they are easy to follow even for those not familiar with the problem in advance.
- Read and assimilate mathematical text.
- Review mathematical calculations and models for correctness, accuracy and relevance.

In addition, students must have embraced a study technique that facilitates further mathematical studies.

Course contents

The trigonometric functions and their inverses, power, exponential and logarithmic functions, absolute value function, properties of functions, complex numbers, vectors, scalar and cross product, projections and linear combination.

Course literature

The course literature will be announced on the course homepage at least four weeks before the start of the course.

Examination

- TEN1 - Exam, 6.0 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.

Other requirements for final grade

Written exam (TEN1, 6 cr)

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.