IX1307 Problem-Solving in Mathematics 7.5 credits

Problemlösning i matematik

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

Establishment

Course syllabus for IX1307 valid from Autumn 2017

Grading scale

P, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

This course should give an introduction to university mathematics and the use of computer-based mathematics tools. This implies that on completion of the course the student should be able to:

- carry out simple logical arguments to draw correct conclusions based on made calculations or given data
- present calculations and arguments by means of text and mathematical notation in a clear and readable manner
- read mathematical text and study new, mathematically described, application fields
- critically review the correctness, precision and relevance of mathematical models and calculations
- apply algebra for rewriting, determining coefficients, and equation solving
- use and derive commonly occurring relationships for elementary functions
- use computer-based mathematical tools for visualisation, mathematical modelling and problem solving.

Course contents

Basic mathematical concepts, number theory, algebra, functions, graph drawing, complex numbers, mathematical notation, terminology and use of computer-based mathematical tools.

Course literature

Petersson, H. Problemlösningens grunder, matematisk metodik, andra upplagan. Studentlitteratur, 2016.

Adams R. and C. Essex. Calculus, A Complete Course, 8th Edition. Pearson, 2013.

Examination

- INL1 - Hand-in assignments, 4.5 credits, grading scale: P, F
- TEN1 - Exam, 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.