



ML0014 Mathematics E 6.0 credits

Matematik E /Basårskurs/

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 ML0014 valid from Spring 2014

Grading scale

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

Education cycle

Pre-university level

Language of instruction

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

Intended learning outcomes

OVERALL GOALS:

The student will be given a basic understanding of and skills in mathematics, needed to be able to understand the mathematics courses, as part of the college and engineering programs.

AIMS OF THE COURSE:

The student should after the course be able to:

- formulate, analyze and solve mathematical problems of importance for application and study orientation with in-depth knowledge of concepts and methods learned in previous course
- explain how and why the number system extended to complex numbers
- to calculate with complex numbers written in different forms and be able to solve simple polynomial equations with complex roots even with the help of the factor theorem
- analyze, formulate and solve problems that require the determination of derivatives and integrals and compute the volume using integrals
- be able to interpret, explain and set up differential equations as models for real situations
- be able to provide exact solutions for some simple differential equations and explain the reasoning behind a method for numerical solution
- be able to work on problems, which require an overview of the knowledge acquired in the complex sets of numbers, algebra, trigonometry, and function theory of differential and integral calculus.

Course contents

- Complex numbers: arithmetic, complex plane, polynomial equations
- Derivatives and integrals: Change speed, volume calculation, and various methods to set up an integral.
- Differential Equations: Set up and solve simple differential equations of 1st and 2nd order

Specific prerequisites

Basic qualifications for university studies and Mathematics B from high school or equivalent.

Course literature

Natur o Kultur

Ma4000 E ISBN 978-91-27-41689-5

Formler och tabeller ISBN 978-91-27-72279-8

Konvergenta

Matematik-1000 övningsuppgifter i matematik på gymnasienivå kurs C, D och E. ISBN: 9197370800

Examination

- TEN1 - Examination, 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.

When the written test is given bonus points can be counted, but only at the regular exam.

Other requirements for final grade

The final score is calculated as described in course-PM is based on all parts.

Written exam

Required reports, oral and / or in writing, of the selected data continuously during the course.

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.