ML0013 Mathematics D 6.0 credits

Matematik D /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 ML0013 valid from Autumn 2009

Grading scale

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

Education cycle

Pre-university level

Specific prerequisites

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

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 will after the course to:

- formulate, analyze and solve mathematical problems of importance for applications and study orientation with in-depth knowledge of concepts and methods learned in previous course

- use the unit circle to define the trigonometrically concepts, show trigonometrically relationships and provide complete solutions to simple trigonometric equations and use these in solving problems

- draw graphs of trigonometrically functions and use functions as models of real periodic processes

- derive and use formulas needed for transforming trigonometrically expressions in the solution of trigonometrically equations

- calculate the sides and angles of an arbitrary triangle

- using differentiation rules for trigonometric functions, logarithmic functions, composite functions, product and quotient of functions and apply these rules in solving problems

- use the second derivative in different application contexts

- explain the meaning of the concept of differential equation and give examples of various simple differential equations and recognize problem situations where they may occur

- define primitive functions and use them in applied problem solving

- explain the meaning of the concept of integral and clarify the relationship between the integral and derivative, and set up, interpret and use integrals of various types of basic applications

Course contents

- Trigonometry: Triangles rates, formulas and equations, graphs, derivatives
- The derivative of ln functions, the derivative of the product and quotient, chain rule.
- Primitive functions and integrals, area calculation and other applications

Course literature

Natur o Kultur
Ma4000 CD ISBN 978-91-27-41704-5
Formler och tabeller ISBN 978-91-27-72279-8

Language of instruction: Swedish

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.

The final score is calculated as described in course-PM is based on all parts. Grading: A / B / C / D / E / F

Other requirements for final grade

Written exam (TEN1, 6p)

In addition, there 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.