Mathematics I for Technicians 7.5 credits B0001M

Matematik I för bergsskoletekniker

Course syllabus admitted: Autumn 2017 Sp 1 - Autumn 2019 Sp 2

DECISION DATE
2017-06-16

Mathematics I for Technicians 7.5 credits B0001M

Matematik I för bergsskoletekniker

First cycle, B0001M

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Matematik	Mathematics

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Examiner

Ove Edlund

Course Aim

The students should develop their ability to understand and use mathematical concepts and models as tools within technique applications.

After completion of the course the student is expected to be able to:

- handle and manipulate algebraic expressions which may arise in technique applications
- understand and use linear equations to draw and interpret graphs as well as adapt graphs to data within technical areas
- use systems of equations to solve e.g. stoichometrical calculations for chemical reactions
- handle and manipulate 2nd degree equations and expressions to solve problems such as calculation of surface roughness during machining, or calculation of pump's performance
- use functions as models for actual production processes
- apply trigonometrical principles of a right triangle to calculate e.g. surface tension of fluids and molten compounds, angles used in construction, or forces and loads on machine parts or buildings
- use statistical distributions to understand and apply statistical process control
- work with a graphical calculator

LULEÅ TEKNISKA UNIVERSITET

Contents

Algebraic expressions, linear equations, variables and formulas.

Polynoms, conjugate- and square rules, factorisation, rational expressions, quadratic equations, division of algebraic expressions.

Analytical geometry: the distance rule and straight lines.

Functions: the symbol $y = f(x)$, quadratic functions, inequalities

Basic trigonometry: Pythagorean Theorem, sine-, cosine and tangent of a right triangle

Statistics and statistical distributions

Technical applications

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures and exercises.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Written examination.

Remarks

The course cannot be used as part of the Högskole Engineer Degree or BSc Degree.

The course corresponds to MA1011.

Literature. Valid from Autumn 2015 Sp 2

Croft, Anthony., Davison. Robert. (2006) Foundation maths. 5 uppl. New York : Pearson Education. (523 s). ISBN 0-131-97921-3

Course offered by

Department of Engineering Sciences and Mathematics

Items/credits

Number	Type	Credits	Grade
0001	Written exam	7.5	G U 3 4 5

Last revised

by Mats Näsström 2017-06-16

Syllabus established

by Dept TVM Mats Näsström 2012-04-03

LULEÅ
TEKNISKA
UNIVERSITET