Complementary Course from BSc-level of Mathematics to MSc-level of Mathematics 7.5 credits M0056M

Komplettering från högskoleingenjörsmatematik till civilingenjörsmatematik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2021-06-16

LULEÅ
TEKNISKA
UNIVERSITET

Complementary Course from BSc-level of Mathematics to MSc-level of Mathematics 7.5 credits M0056M

Komplettering från högskoleingenjörsmatematik till civilingenjörsmatematik

First cycle, M0056M

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 and Basic courses for BsC students, i.e. M0050M/M0038M, M0051M/M0043M and M0052M/M0039M or similar courses.

Selection

The selection is based on 1-165 credits.

Course Aim

After completing the course, students should

- have knowledge of and be familiar with key mathematical concepts, methods and logical structures necessary for independent work as an engineer
- have fulfilled the course aims of the courses M0047M, M0048M and M0049M
- be able to use computer tools for numerical computations in the subject areas of the course
- have developed their capacity for critical reflection, planning and mathematical modeling
- be able to use mathematics as an effective tool for further studies in mathematics, science, technology and economics and in professional life.

Contents

Mathematical induction. Mathematical modeling for optimization. The Riemann integral, surface areas for solids of revolution, curves on parametric form. Variation of parameters in differential equations. Euler differential equations.

Linear transformations and standard matrices. Vector spaces, subspaces and bases. Diagonalization, orthogonal projection, the least squares method, quadratic forms.

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 tutorials, or supervised self study, depending on the number of students in the course.

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 exam.

LULEÅ
TEKNISKA
UNIVERSITET

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

This course, together with the basic courses in mathematics for "högskoleingenjörer", i.e. M0050M/M0038M, M0051M/M0043M and M0052M/M0039M, is counted equal to the basic courses in mathematics for "civilingenjörer", i.e. M0047M, M0048M and M0049M.

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Written exam	G U 3 4 5	7.5	Mandatory	S20	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Niklas Lehto, Head Faculty Programme Director 2021-06-16

Syllabus established

by Head Faculty Programme Director Niklas Lehto 2021-02-17