



LUND
UNIVERSITY

Faculty of Science

MATB16, Mathematics: Linear Analysis, 7.5 credits

Matematik: Lineär analys, 7,5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2011-04-27 to be valid from 2011-04-27, autumn semester 2011.

General Information

The course is an elective course for first-cycle studies for a Bachelor of Science.

Language of instruction: Swedish and English

The course will be given in English on request.

Main field of studies

Mathematics

Depth of study relative to the degree requirements

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

The aim of the course is that students on completion of the course should have acquired the following knowledge and skills: Knowledge and understanding On completion of the course, the student should: be able to use and account for the theory for and the applications of function series and Fourier series be familiar with the mathematical concepts and methods that have been listed under contents Skills and abilities On completion of the course, the student should: have developed the ability to interpret relevant information and independently identify, formulate and solve problems that concern the fields that have been listed under contents have developed good skills and abilities to handle problems within basic linear analysis have developed his or her ability to identify the logical structure in mathematical arguments and to carry out mathematical proofs have developed his or her ability to communicate mathematics in speech and writing Judgement and approach On completion of the course, the student should: be able to evaluate and use formal treatment of mathematics have acquired basic knowledge for continued studies in mathematics

Course content

Function series, uniform convergence, pointwise convergence Fourier series, Parseval's formula Cosine and sine series Applications within classical partial differential equations

Course design

The teaching consists of lectures and exercise sessions.

Assessment

The examination consists of a written exam. For students who do not pass on the regular exam, an additional exam is offered shortly afterwards.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, passed written examination is required. The final grade is based on the result on the written exam.

Entry requirements

For admission to the course, general entry requirements and knowledge equivalent to the courses MATA14 Mathematics: Analysis 1, 15 credits; MATA15 Mathematics: Algebra 1, 15 credits; and MATB11 Linear algebra, 7.5 credits, are required.

Further information

The course may not be included in a higher education qualification together with MATB12 Fourier analysis, 7,5 credits.

Subcourses in MATB16, Mathematics: Linear Analysis

Applies from H11

1101 Examination, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction