Department of Mathematics
(incl. Math. Statistics)

Stockholm University

# Syllabus

for course at advanced level

**Linear Analysis**
**Linjär analys**

**7.5 Higher Education Credits**
**7.5 ECTS credits**

| | |
|---|---|
| **Course code:** | MM7005 |
| **Valid from:** | Autumn 2007 |
| **Date of approval:** | 2006-09-27 |
| **Department** | Department of Mathematics (incl. Math. Statistics) |
| **Subject** | Mathematics |
| **Specialisation:** | AXX - Second cycle, in-depth level of the course cannot be classified |

## Decision

This syllabus was approved by the Board of the Faculty of Science at Stockholm University on 27 September 2006.

## Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to 60 credits in mathematics, where Mathematical analysis III, 7.5 credits, Mathematical analysis IV, 7.5 credits, and Linear algebra II, 7.5 credits, or equivalent, are included. Also required is knowledge equivalent to Swedish upper secondary course English B.

## Course structure

| Examination code | Name | Higher Education Credits |
|---|---|---|
| F705 | Linear analysis | 7.5 |

## Course content

The course covers: Fourier series with applications, in particular on partial differential equations of the second order. The contents of the course may be applied in modelling in for example physics and economics.

## Learning outcomes

After the course, students are expected to be able to:
* account for and prove basic theorems in the theory of Fourier series
* explain and use methods in the theory of Fourier series to solve mathematical and applied problems.

## Education

Instruction consists of lectures and exercises.

## Forms of examination

a. The course is examined as follows: Knowledge assessment takes the form of written and/or oral examination.

b. Grades are assigned according to a seven-point goal-related grading scale:

A = Excellent
B = Very good
C = Good

D = Satisfactory
E = Sufficient
Fx = Fail (more work required before credit can be awarded)
F = Total fail

c. The grading criteria will be distributed at the beginning of the course.

d. To be awarded a pass, the minimum grade E is required.

e. Students who fail an ordinary examination are entitled to sit additional examinations as long as the course is offered. There is no restriction on the number of examinations. Examinations also include other obligatory elements of the course. Students who have passed an examination may not resit it in order to achieve a higher grade. Students who have failed on two occasions are entitled to request the appointment of a different examiner for the next examination. Any such request must be made to the departmental board.

### Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two year period after course instruction has ended. Requests must be made to the departmental board.

### Limitations

The course may not be included in a degree together with the course Linear analysis (MA3180).

### Misc

The course is a component of the Master's programmes in mathematics and in applied mathematics, but it can also be taken as an individual course.

### Required reading

Course literature is decided by the departmental board and described thereafter in an appendix to the course plan.