Department of Mathematics
(incl. Math. Statistics)

Stockholm University

# Syllabus

for course at first level

**Topics in Mathematics I**
**Fördjupning till Matematik I**

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

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|---|---|
| **Course code:** | MM2003 |
| **Valid from:** | Autumn 2016 |
| **Date of approval:** | 2016-05-16 |
| **Department** | Department of Mathematics (incl. Math. Statistics) |
| **Main field:** | Mathematics/Applied Mathematics |
| **Specialisation:** | G1F - First cycle, has less than 60 credits in first-cycle course/s as entry requirements |

## Decision

This syllabus was approved by the Board of the Faculty of Science at Stockholm University on 2016-05-16.

## Prerequisites and special admittance requirements

Admission to the course requires registration on Mathematics I, 30 credits (MM2001) or Mathematics for the Natural Sciences I, 15 credits (MM2002).

## Course structure

| Examination code | Name | Higher Education Credits |
|---|---|---|
| F101 | Assignments | 4 |
| F102 | Oral presentation | 3.5 |

## Course content

The course covers selected topics from the course Mathematics I from an in-depth perspective; number theory, combinatorics, set theory, polynomial equations, quaternions, linear maps, conic sections, curves, elementary functions, continuity, limits, integrals, and series.

## Learning outcomes

Upon completion of the course, the student is expected to be able to:
Part 1, Assignments, 4 credits:
* in written form, define and explain basic concepts treated in the course
* in written form, explain and prove basic relationships between the topics treated in the course
* in written form, explain and use methods treated in the course
Par 2, Pral presentation, 3.5 credits:
* in oral form, explain basic concepts treated in the course,
* in oral form, explain methods treated in the course.

## Education

Instruction consists lectures, exercises and seminars. Participation in the seminars is compulsory.

If special reasons exist, following consultation with the teacher involved, the examiner may grant the student exemption from the obligation to participate in the seminars.

**Forms of examination**

a. The course is examined in the following manner:
Assessment of module F101 takes place through hand-in assignments.
Assessment of module F102 takes place through oral exam.

b. Grades of module F101 will be set according to a seven-point criterion-referenced scale:
A = Excellent
B = Very good
C = Good
D = Satisfactory
E = Adequate
Fx = Failed, some additional work is required
F = Failed, much additional work is required

Grades of module F102 will be set according to a two-point grading scale: fail (U) or pass (G).

c. The course's grading criteria are handed out at the start of the course.

d. A passing final grade requires
* at least the grade E on module F101
* a passing grades on module F102
* participation in compulsory instruction

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board. The course includes at least two examination opportunities per academic year the course is offered. For the academic years that the course is not offered, at least one examination opportunity is offered.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides on the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination opportunity.

**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. The provision also applies in the case of revisions to the course plan.

**Required reading**

The required reading is decided by the departmental board and published on the Department of Mathematics' website at least 2 months before the start of the course.