

# Syllabus

for course at first level

**Challenging mathematics**  
**Utmanande matematik**

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

<b>Course code:</b>	MM1008
<b>Valid from:</b>	Autumn 2013
<b>Date of approval:</b>	2013-10-23
<b>Department</b>	Department of Mathematics (incl. Math. Statistics)
<b>Main field:</b>	Mathematics/Applied Mathematics
<b>Specialisation:</b>	G1N - First cycle, has only upper-secondary level entry requirements

## Decision

This syllabus was approved by the Board of the Faculty of Science at Stockholm University 2013-10-23.

## Prerequisites and special admittance requirements

Swedish upper secondary school course Mathematics D, or equivalent.

## Course structure

Examination code	Name	Higher Education Credits
M101	Geometry	1.5
M102	Combinatorics	1.5
M103	Arithmetics	1.5
M104	Algebra	1.5
M105	Seminar	1.5

## Course content

a. The course covers basic algebra, combinatorics, study of integers and geometry with focus on problem solving.

b. The course comprises the following elements:

- M101. Geometry, 1.5 credits
- M102. Combinatorics, 1.5 credits
- M103. Arithmetics, 1.5 credits
- M104. Algebra, 1.5 credits
- M105. Seminar, 1.5 credits

## Learning outcomes

After the course, students are expected to:

- \* be able to use algebraic, combinatorial and geometric methods to solve mathematical and applied problems
- \* be able to read a mathematical text, and to formulate mathematical reasoning in a correct and comprehensible manner, both orally and in writing
- \* be able to demonstrate good problem solving abilities

## Education

Instruction is conducted online with the exception of a compulsory seminar.

### **Forms of examination**

a. The course is examined as follows: Knowledge assessment for the elements M101, M102, M103 and M104 takes the form of written assignments. Knowledge assessment for M105 takes place through oral participation in a seminar.

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

Element M105 is graded using a two-point grading scale: pass (G) or fail (U).

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

d. To be awarded a pass, the minimum grade E on the elements M101-M104 is required, together with a pass grade on M105.

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.

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

### **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.

### **Limitations**

This course may not be included in a degree together with the course Mathematics I (MM2001), or equivalent.

### **Required reading**

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