



## Course syllabus

Faculty Board of Science and Engineering  
School of Computer Science, Physics and Mathematics

1MD372 Stöd och utveckling av matematisk förmåga, 7,5  
högskolepoäng

Gifted Education in Mathematics, 7.5 credits

### **Main field of study**

Mathematics

### **Subject Group**

Mathematics

### **Level of classification**

First Level

### **Progression**

G1F

### **Date of Ratification**

Approved by the Board of the School of Computer Science, Physics and Mathematics  
2009-08-11

Revised 2010-08-20. Revision made for English translation of the syllabus, literature list and course evaluation.

The course syllabus is valid from spring semester 2011

### **Prerequisites**

30 credits in mathematics including 15 credits in mathematical didactics or the equivalent.

## Expected learning outcomes

After completing the course students will:

- be able to explain what is meant by mathematical ability and how it can be reflected in pupils
- be able to explain the organization of education and the social context relevant to students' development of mathematical ability.
- be able to account for some of the mathematics didactics research in the area of students with an aptitude for mathematics
- be able to analyze and construct mathematical problems that challenge and stimulate students
- have received a deeper understanding of mathematics and its structure and nature.

## Content

Theme 1. Talent and mathematical abilitys

Discussed in the theme are the concept of talent in general and what mathematics is and what the subject has to offer. We analyze the characteristics of mathematical ability and how such skills may be encouraged and developed.

Theme 2. Educational organization and the importance of social context

The theme deals with grouping and differentiation issues. Furthermore, we discuss how to teach students with diverse abilities in a coherent class, and the kind of education that can encourage and support students' development of mathematical ability.

Theme 3. Problem solving as a means to stimulate and develop mathematical ability

Analysis and design of problems that allows reflection on different abstraction levels which challenges and encourages students with varied mathematical ability.

## Type of Instruction

Teaching consists of lectures, seminars and tutorials.

## Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

Assessment of student performance is made through oral presentation and/or written assignments. The main form of examination is determined at the start of the course. Students who do not pass the regular examination will be offered retrials close to the regular examination.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

## Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

## Required Reading and Additional Study Material

### Required reading

Winner, E, *Begåvade barn*, Brain Books, 1999. Pages 265.

Hagland, K, Hedrén, R & Taflin, E, *Rika problem*, Liber, 2005. Pages 230.

Wallby, K, Carlsson, S & Nyström, P, *Elevgrupperingar*, Skolverket, 2001. Pages 169.

*Compendium and stencils*, DFM. Linnæus University, current year. Pages 100.

The Required Reading and Additional Study Material are subject to changes.