Linnæus University

Course syllabus

Faculty Board of Science and Engineering

School of Computer Science, Physics and Mathematics

1MD368 Elever med speciella behov i matematik, 15 högskolepoäng
1MD368 Pupils with special needs in mathematics, 15 credits

Main field of study
Mathematics

Subject Group
Mathematics

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved 2009-08-11
Revised 2010-11-26 by School of Computer Science, Physics and Mathematics.
Revision made for English translation of the syllabus and prerequisites.
The course syllabus is valid from autumn semester 2011

Prerequisites
Teacher qualification with a minimum of 15 credits in mathematics education or equivalent.

Objectives
After completing the course the student should:

- be able to explain how to work with pupils with special needs regarding working methods and working forms,
- be able to create and implement an actions program for pupils in mathematics difficulties,
- be able to explain what is meant by mathematical ability and how it can be reflected of pupils,
- be able to explain the importance of the educational organization and the social context for pupils' development of mathematical ability,
- be able to describe some research in mathematics education in the field pupils with special needs,
- have gained a deeper understanding of mathematics structure and nature.

Content

The course treats teaching pupils with special needs in mathematics. Pupils with special needs referred to both pupils in mathematics difficulties and pupils with aptitude in the subject matter. The course treats the following topics:

- What is the mathematical ability and how can it be developed and encouraged?
- What are the mathematical difficulties and how do we help pupils in mathematical difficulties?
- The social context and the educational organization's impact for learning.
- How do we develop pedagogy for pupils in mathematical difficulties and pupils with ability and talent for mathematics?
- Working methods and working forms' impact on students' learning situation.
- Analysis and design of rich mathematical problems.
- Pupil surveys in terms of implementation actions program, observation and classroom activity.
- Reading and writing difficulties and learning of mathematics.
- Orientation on research in mathematics education in the specific fields.

Type of Instruction

The teaching is carried out in the form of lectures and seminars. The studies are carried out mainly using distance tools where the students meet each other and the teacher of the course. The students work both individually and in groups with exercise that is based on textbooks, course plans and the course participants' own teaching and/or experiences.

Examination

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

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.

Assessment methods that may occur are oral and/or written reports of prescribed tasks. The main form of examination is determined at the start of the course.

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

McIntosh, A, *Förstå och använda tal - en handbok* NCM, Göteborgs universitet, 2008, 200 pages

Malmer, G. *Bra matematik för alla, nödvändig för elever med inlärningssvårigheter*, Studentlitteratur, 1999.240 pages

Skolverket *Allmänna råd och kommentarer för arbete med åtgärdsprogram*, 2008.24 pages

Sterner, G.& Lundberg, I. *Läs och skrivsvårigheter och lärande i matematik*. 201 pages

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

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

Lundberg, Ingvar & Sterner, Görel (2009). *Dyskalkyli - finns det? Aktuell forskning om svårigheter att förstå och anbvända tal*. NCM, nationellt centrum för matematikutbildning. Göteborgs universitet.

DFM, *Compendium and stenciles*, Linnæus University, current year. 350 pages