Linnæus University

Jnr: 2015/3642-3.1.2

Course syllabus

Faculty of Technology
Department of Mathematical Education

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 2009-08-11
Revised 2015-11-03 by Faculty of Technology.
The course syllabus is valid from spring semester 2016

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

Objectives

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 problem solving activities 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 and its importance to mathematics and to stimulate and develop students' mathematical abilities. We work with problem solving activities and mathematical problems that allows reflection on different abstraction levels.

Type of Instruction
Teaching consists of lectures, seminars and tutorials.

Students are required to have access to field study class when carrying out certain assignments.

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 and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed by the coordinating department.

Required Reading and Additional Study Material
Required reading
Ziegler, A, *Högt begåvade barn*, Nordstedts, 2010. Pages 110

Mönks, F & Ypenburg, I, *Att se och möta begåvade barn*, Natur & Kultur, 2009. Pages 132

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

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

Eva Pettersson, *Studiesituationer för elever med särskilda matematiska förmågor*. Available online: lnu.diva-portal.org/smash/get/diva2:414912/FULLTEXT01

Pettersson, E., & Wistedt, I. *Barns matematiska förmågor-och hur de kan utvecklas*, Studentlitteratur, 2013. Pages 119.

Skolverkets stödmaterial för grund- och gymnasieskolors arbete med särskilt begåvade elever (2015)http://www.skolverket.se/skolutveckling/larande/sarskilt-begavade-elever-1.230661

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

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