Linnæus University

Course syllabus

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

4PP702 Särskilt stöd i matematikutveckling II, 10 högskolepoäng
Special support in mathematics development II, 10 credits

Main field of study
Mathematics

Subject Group
Mathematics

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by the Board of the School of Computer Science, Physics and Mathematics 2011-08-17

The course syllabus is valid from spring semester 2012

Prerequisites
Special support in mathematics development I, (4PP701), 5 hp

Objectives

The aim of the course is to develop the students understanding of mathematical difficulties and charting of mathematical knowledge. During the course the student will demonstrate an approach consistent with existing ethical rules and policy documents. The course also aims to develop a scientific and professional approach of the pedagogical practice.

Upon completion of the course the student should:

- be able to problematize about the obstacles and possibilities concerning pupils' development in mathematics
- be able to examine critically different diagnostic tools as well as to analyze independently the results of those diagnoses that have been carried out
- have knowledge of and a critical attitude towards the role of assessment in teaching
- demonstrate in-depth knowledge of work with pupils with special educational needs in mathematics

Content

The following areas are covered in the course:

- What are mathematical difficulties and how can we help pupils experiencing difficulties in mathematics at individual, group and organizational levels?
- The significance of the social and cultural contexts as well as the significance of the teaching for learning.
- Reading and writing difficulties and learning mathematics.
- How do we develop teaching methods for pupils experiencing difficulties in mathematics?
- The influence of the ways and means of working on the pupils' learning situation.
- Analysis and examination of different diagnostic tools and material.
- Charting the knowledge in mathematics of pupils of different ages.

Type of Instruction

The course consists of lectures and seminars. The teaching is based substantially on the students' active participation, individually and in groups, which requires attendance at seminars and presentations.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
The course is examined through active participation in seminars and presentations and through written and oral presentations of individual and group assignments.

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 course evaluation will be filed at the department.

Required Reading and Additional Study Material

Berch, Daniel B., & Mazzocco, Michéle M. M. (2007). *Why is math so hard for some children? : the nature and origins of mathematical learning difficulties and disabilities*. Baltimore, Md.: Paul H. Brookes Pub. Co. (150) 431 pages.

Boaler, Jo, *Elefanten i klassrummet - att hjälpa elever till ett lustfyllt lärande i matematik*. Liber, 2011, 228 pages.

Butterworth, Brian & Yeo, Dorian (2009). *Dyskalkyli - att hjälpa elever med specifika matematiksvårigheter*. Natur och Kultur. 126 pages.

Hogden, Jeremy & Wiliam. Dylan (2011) *Mathematics incide the black box: Bedömning för lärande i matematikklassrummet*. 38 pages.

Jess, Kristine, Skott, Jeppe, Hansen & Hansen, Hans Christian. (2011) *Matematik för lärare: Elever med särskilda behov*. 63 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. 125 pages.

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

Mer än matematik – om språkliga dimensioner i matematikuppgifter, Myndigheten för skolutveckling, 2008. 30 (46) pages.

Sjöberg, Gunnar *Om det inte är dyskalkyli – vad är det då*?, Umeå universitet, 2006. 200 (264) pages.

Diagnosmaterial, Skolverket, 2008, www.skolverket.se/sb/d/260/a/14694, 50 pages

Sterner, Görel, Lundberg, Ingvar *Läs och skrivsvårigheter och lärande i matematik*, NCM-rapport 2002:2. 210 pages.
Articles, current year. App. 50 pages.