Faculty of Science

MATL01, Independent Project Work in Mathematical Didactics, Knowledge Overview, 15 credits

Självständigt arbete i matematikdidaktik, kunskapsöversikt, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2022-12-14 to be valid from 2022-12-14, autumn semester 2023.

General Information

The course contains an independent project work in mathematics with a didactical focus. The course is part of a chain of course packages in mathematics which together provide eligibility for supplementary pedagogical training leadng to a subject teacher's degree in mathematics. The course can also be given as a stand-alone course.

Language of instruction: Swedish

Main field of studies	*Depth of study relative to the degree requirements*
Mathematics	G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

Learning outcomes

The overall goal of the course is for the students to acquire basic knowledge of issues and profession-related problems that are specific to mathematical didactics research. Furthermore, the students develop the ability to search, summarise and compare research texts and thereby acquire a scientific approach to mathematical didactics research of professional relevance.

Knowledge and understanding

After completing the course, the student should be able to:

- identify an area of interest and formulate a research topic of relevance to the teaching profession and the subject of mathematics

- give an account of current research and development work in the chosen area
- systematically report on selected studies based on purpose, theoretical perspective, methodological approach and results and draw conclusions in relation to the selected research topic in their own literature overview.

Competence and skills

After completing the course, the student should be able to:

- search for, critically evaluate and compile research studies of relevance to the chosen area
- orally and with good written language processing report the completed work and convey the knowledge it has generated
- orally argue for shortcomings and merits in their own text
- complete tasks within given time frames.

Judgement and approach

After completing the course, the student should be able to:

- critically examine relevant research in mathematical didactics based on a scientific ground and, based on a critical approach, be able to discuss how this can be related to the mathematics subject and future professional practice
- identify their need for additional knowledge and take responsibility for their own professional development in the subject of mathematics and for the didactical competence in the subject.

Course content

The course includes seminars treating scientific writing, scientific theory, research methods in mathematical didactics as well as applications of methods for literature search and criteria for selection of scientific texts. In consultation with a supervisor, the students choose an area of relevance to the teaching profession, subject and subject didactics and make a knowledge overview of current research in the chosen area. The implementation and results of the knowledge overview should provide insights into the theoretical and methodological issues that are central to the subject. A defense of one's own work is included in the course requirements.

Course design

The course begins with a number of preparatory seminars. The students carry out a knowledge overview with the support of supervisors, individually or in pairs. During the course, the work will be successively discussed at tutoring sessions, individually and in groups. During the course, students are expected to participate actively in all tutoring activities and seminars that are organized. The independent project work is presented in the form of scientific, written report in Swedish and is presented orally at a public seminar for discussion, criticism and analysis. Before the presentation, the students must reflect on their work based on the learning objectives in this syllabus.

Assessment

The following parts are included in the examination:

- a work plan drawn up at the beginning of the work
- a scientific written report

- an oral presentation of the work, in front of a grading committee consisting of examiner and supervisor
- a self-reflection on one's own learning.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
For the grade Pass on the entire course, participation in preparatory seminars and tutoring sessions and the grade Pass on all examination parts are required.

The grading scale for the written report and the oral presentation is Fail, Pass, Pass with distinction. The grading scale for the work plan and self-reflection is Fail, Pass.

The final grade for the entire course is determined by weighing the grades on the written report and the oral presentation.

The examiner determines the grade in consultation with the supervisor. If the examiner judges that the work cannot be approved, the student must be given the opportunity to supplement the work for renewed assessment, within approximately half a semester. If the work does not meet the learning objectives of the course after this renewal assessment, the examiner can decide to fail. This may mean that the work must be redone, so that all learning objectives can be met.

Entry requirements

Access to the course requires at least 60 credits in mathematics.

Further information

The course is given at the Centre for Mathematical Sciences, Lund university.

Subcourses in MATL01, Independent Project Work in Mathematical Didactics, Knowledge Overview

Applies from H23

2301 Work Plan, 1,0 hp
Grading scale: Fail, Pass
2302 Scientific Written Report, 12,0 hp
Grading scale: Fail, Pass, Pass with distinction
2303 Oral Presentation, 1,0 hp
Grading scale: Fail, Pass, Pass with distinction
2304 Self-reflection, 1,0 hp
Grading scale: Fail, Pass