



Faculty of Technology and Science  
Mathematics

### Syllabus

#### **Course Approval**

The syllabus was approved by the Faculty Board of Technology and Science on 14 October 2009, and is valid from the Spring semester of 2009 at Karlstad University.

**Course Code:** MAAE01

**Master Thesis in Mathematics, 30 ECTS Credits**

**(Examensarbete i matematik, 30 Swedish credit points)**

**Degree Level:** Master

**Progression Level:** D

#### **Language of Instruction**

The language of instruction is Swedish or English.

#### **Prerequisites**

30 ECTS credits Master level Mathematics courses

#### **Major Field of Study**

Mathematics

#### **Learning Outcomes**

The aim of the course is that the student acquire knowledge and abilities to independently plan, perform and present investigations of problems in mathematics.

Upon completion of the course, the student should be able to:

- demonstrate deepened and broadened knowledge of the branch of mathematics treated in the thesis
- identify and formulate a scientific problem and to plan research project
- search and analyse scientific literature which is relevant to the problem
- demonstrate the ability to derive relevant conclusions and to analyse main phenomena in the area treated in the thesis
- give a complete, detailed and rigorous exposition of the chosen problem field including the ability to describe independently and thoroughly special cases of the problem and related examples
- present mathematical theory in speaking and in writing, conforming to standard mathematical practice and requirements in content, structure and language

#### **Content and Form of Instruction**

The course is carried out in the project form, individually or in a group. If two or more students are cooperating on a large project, the individual contributions and responsibilities should be clear from the oral and written presentations and clearly specified from the start of the project.

The content of the course, i.e., the mathematical problem or problem field that is treated in the thesis, is decided in consultation with the advisor and the examiner. Along with a critical and systematic exposition of the main results in the chosen field, the thesis should contain elements of independent research.

## Reading List

See separate document.

## Examination

Examination is based on the written thesis and the oral presentation at the thesis seminar. The thesis should be written in Swedish or English. If the thesis is written in English, it should have a Swedish title and an abstract in Swedish, and vice versa.

## Grades

One of the grades U (Fail), G (Pass), or VG (Distinction) is awarded in the examination of the course.

## Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

## Course Certificate

A course certificate will be provided upon request.

## Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University, ref. C2007/368, stipulate the obligations and rights of students and staff.

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