FSF3605 Algebraic Geometry II 7.5 credits

Algebraisk geometri II

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FSF3605 valid from Spring 2012

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

A Master degree including at least 30 university credits (hp) in Mathematics.

Some knowledge in abstract algebra, as for instance SF2737 Commutative Algebra and Algebraic Geometry or equivalent.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After the course the student will have sufficient depth in the field to be able to pursue research in algebraic geometry.

Course contents

- Sheaves on topological spaces
- Schemes, subschemes
- Affine schemes, projective schemes
- Fiber product
- Proper morphisms
- Quasi-coherent sheaves
- Kähler differentials
- Invertible sheaves, O(1)
- Defining properties of projective n-space
- Weil divisors
- Cartier divisors

Disposition

Lectures and problem solving sessions.

Course literature

R. Hartshorne "Algebraic Geometry", Chapter 2.

Supplementary reading in D. Mumford "The Red book of Vari-eties and Schemes".

Examination

Based on recommendation from KTH’s coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Homework assignments, and exercise sessions.

Other requirements for final grade

Approved assignments combined with problem-solvingsessions.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.