



FSF3711 Algebraic and Enumerative Combinatorics 7.5 credits

Algebraisk och enumerativ kombinatorik

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

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

Establishment

Course syllabus for FSF3711 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Basic courses in algebra and discrete mathematics. mathematical maturity.

Language of instruction

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

Intended learning outcomes

The student should after the course be familiar with algebraic aspects of generating functions, and be able to use the techniques developed to solve combinatorial problems and prove relevant theoretical statements. The students should also have learned the basics of the combinatorial aspects of the theory of symmetric functions. In particular the combinatorics of Schur functions. She or he should be able to use the theory developed to solve related problems of combinatorial nature.

Course contents

- Rational, algebraic and D-finite generating functions in one variable.
- Rational and algebraic noncommutative formal series.
- Combinatorial theory of symmetric functions

Disposition

Lectures

Course literature

- R. P. Stanley, Enumerative Combinatorics, Vol 2, Cambridge University Press.
- Lecture notes.

Examination

- INL1 - Assignment, 7.5 credits, grading scale: P, F

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.

Homework problems.

Other requirements for final grade

The student should have solved 70% of the homework problems to pass.

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.