FSF3701 Coxeter Groups 7.5 credits

Coxetergrupper

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 FSF3701 valid from Spring 2009

Grading scale

Education cycle

Third cycle

Specific prerequisites

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

Language of instruction

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

Intended learning outcomes

The theory of Coxeter groups provides a common framework for important classes of groups such as symmetric groups, Weyl groups, reflections groups (finite, affine, hyperbolic) and symmetry groups of regular polytopes.

After passing the course the students will understand, and are able to apply, the theory in Lie theory, algebraic geometry and combinatorial geometry among other subjects

Course contents

Coxeter groups are studied using mainly combinatorial techniques, although connections with other areas will be prevalent. This is a thriving field of research and recent results will be touched upon.

Disposition

Seminars and problem solving sessions.

Course literature

A. Björner and F. Brenti, Combinatorics of Coxeter groups, Graduate Texts in Mathematics 231, Springer, New York, 2005.

J. E. Humphreys, Reflection groups and Coxeter groups, Cambridge studies in advanced mathematics 29, Cambridge University Press, 1990.

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.

Homework, possibly combined with some seminar/oral assignment.

Other requirements for final grade

Accepted homework and oral presentations.

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.