Enumerative Combinatorics, 8.0 credits

Enumerativ kombinatorik, 8.0 hp

Third-cycle education course

MAI0102

Department of Mathematics

Valid from: First half-year 2023

Approved by
Head of Department

Approved

Registration number

Entry requirements

Basic abstract algebra and discrete mathematics.

Contents

Basic methods in enumerative combinatorics. "The twelvefold way" (counting functions subject to various restrictions), sieve methods such as different versions of inclusion-exclusion, the involution principle and determinantal lattice path counting. Various aspects of the theory of partially ordered sets, e.g. lattice theory. Möbius inversion in posets and connections to topology.

Educational methods

Lectures.

Examination

Homework assignments. Literature project.

Grading

One-grade scale

Course literature

R.P. Stanley, *Enumerative combinatorics, vol. 1*, Cambridge Univ. Press, 1997 or R.P. Stanley, *Enumerative combinatorics, vol. 1*, 2nd ed., manuscript 2011, available at **http://www-math.mit.edu/~rstan/ec/ec1/**.