# Enumerative Combinatorics, 8.0 credits 

Enumerativ kombinatorik, 8.0 hp

Third-cycle education course
MAIO102

Dept of Mathematics
Valid from: First half-year 2023

Approved by
Approved
Head of Department

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/.

