CB204V Single-cell and spatial transcriptomics data analysis 2.5 credits

Singelcell och spatiell transkriptomik-dataanalys

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

Establishment

Course syllabus for CB204V valid from Autumn 2022

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Biotechnology

Specific prerequisites

A total of 20 university credits (hp) in life science courses (e.g. biochemistry, microbiology and gene technology/molecular biology). 20 university credits (hp) in mathematics. Documented proficiency in English corresponding to English B.

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to:

- assess differences between a single-cell and spatial transcriptomic analysis
- discuss the advantages and disadvantages of both types of analyzes
- perform a general analysis workflow of single-cell and spatial transcriptomic data

Course contents

The course consists of lectures and computer lab. The lectures focus on theoretical aspects of single-cell and spatial transcriptomic analysis. Computer lab focuses on practical aspects of both subjects. Specific content of the lectures:

- reproducibility of data analysis
- Single-cell analysis workflow
- spatial transcriptomic analysis workflow

Examination

- LAB1 - Working in R, 0.5 credits, grading scale: P, F
- LAB2 - Single-cell analysis, 1.0 credits, grading scale: P, F
- LAB3 - Spatial Transcriptomics analysis, 1.0 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.

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

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.