

8FO0099

Flödes- och masscytometrisk analys av enskilda celler, 3 hp

Single Cell Analysis using Flow and Mass Cytometry, 3 credits

Third-cycle education course

Faculty of Medical and Health Sciences

Valid from: Spring 2018

Syllabus (English version)

Approved by

The Research and PhD studies Committee

Approved

2017-10-23

Registration number: LiU-2017-01448

Admission

Entry requirement for studies on third-cycle education courses

- second-cycle degree,
- 240 credits in required courses, including at least 60 second-cycle credits, or
- acquisition of equivalent knowledge in some other manner

Specific entry requirements for this course is experience of multi-parameter flow cytometry

Learning outcomes

By the end of the course the students will be able to:

Knowledge and understanding

- Account for the underlying mass cytometry technology and how the Cytometry by Time-Of-Flight(CYTOF) instrument works
- judge the pros and cons of flow and mass cytometry methods
- account for different analytic methods for the evaluation of mass cytometry data

Competence and skills

- plan and design a mass cytometry experiment in detail
- choose relevant methods for the analysis of mass cytometry data

Judgement and approach

- take a critical approach regarding when to apply mass cytometry.

Contents

The course is an introduction to the new analytical technique called mass cytometry, used to study proteins at a single cell level. The participants will be trained to compare mass cytometry and flow cytometry methods. Lectures will cover various aspects such as processing data for the analysis and an overview of available methods for the analysis.

Educational methods

The pedagogical approach applied at the Faculty of Medical and Health Sciences is student centered, problem based learning (PBL). The student takes responsibility for his/her own learning, and seeks and evaluates information and knowledge based on own queries and formulated problems. The role of the teacher is to guide and support the students.

Educational methods applied in this course are lectures, literature studies, demonstrations and webinars.

Examination

The examination consists of a written report, assessed on individual level. To pass the course, participation in lectures, demonstrations and webinars is also required.

Students who fail are offered one re-examination occasion in close connection to the course. After that participation in a coming course examination is offered. The re-examination should be equally comprehensive as the ordinary examination.

Change of examiner

Students who have failed the course or part of the course twice are entitled to request another examiner for the following examination occasion.

Grading

Pass or Fail

Course certificate

On the student's request, course certificate is issued by the course examiner.

Recommended reading

A list of recommended literature will be provided by the course coordinator before the start of the course.

General information

The course is planned and carried out according to what is stated in this syllabus. Course evaluation, analysis and suggestions for improvement should be fed back to the Research and PhD studies Committee (FUN) by the course coordinator.

If the course is withdrawn or is subject to major changes, examination according to this syllabus is normally offered at three occasions within/in close connection to the two following semesters.

Department

Department of Biomedical and Clinical Sciences (BKV)

