UNIVERSITY OF GOTHENBURG

INSTITUTE OF BIOMEDICINE

BMA118 Flowcytometry and masspectrometry in laboratory medicine, 7.5 credits

Flödescytometri och masspektrometri inom laboratoriediagnostik, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Institute of Biomedicine on 2018-02-22 and was last revised on 2021-10-22 to be valid from 2022-01-17, spring semester of 2022.

Field of education: Medicine 100%
Department: Institute of Biomedicine

Position in the educational system

The course is given as a freestanding course. The course can be included in a one or two year master's degree in biomedical laboratory science.

Main field of studies	*Specialization*
Biomedical Laboratory Science	A1N, Second cycle, has only first-cycle course/s as entry requirements

Entry requirements

To be eligible for the course, a bachelor's degree of 180 credits or equivalent is required in one of the areas medicine, care or science. Level 6 in English is also required.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

• Explain in detail the theory behind flow cytometry and mass spectrometry

• Describe in detail applications of flow cytometry and mass spectrometry in laboratory medicine

• Explain error sources, quality assurance, and validation of flow cytometry and mass spectrometric methods

Competence and skills

•Perform some different applications

•Interpret and analyze the results and data obtained

•Perform troubleshooting and suggest measures

•Solve methodological problems

•Present and discuss written and oral assignments

Judgement and approach

• Discuss safe sample handling, environmental aspects and quality assurance

• Critically argue for how a selected application solves a diagnostic question

• Discuss the advantages and disadvantages of flow cytometry and mass spectrometry

Course content

The course contains both theory and practical elements. Basic principles of flow cytometry and mass spectrometry. Different types of instrumentation and techniques, workflow, sample management, quality assurance, troubleshooting, validation and analysis of data. Different types of diagnostic applications. Study visits will be included. Students will analyze demo samples with flow cytometry and mass spectrometry during the course.

Form of teaching

The teaching takes place in the form of lectures, group exercises, seminars, demonstrations and laboratory work.

Language of instruction: Swedish and English

Teaching in English will occur.

Assessment

For a passing grade, the student must have participated in compulsory parts. These are laboratory work, demonstrations, seminars and group exercises. The number of compulsory parts is stated in the study guide. Examination takes place through a written exam.

Absence has to be replaced in agreement with the responsible teacher and the examiner.

A student who has taken two exams in a course or part of a course without obtaining a pass grade is entitled to the nomination of another examiner. The student needs to contact the department for a new examiner, preferably in writing, and this should be approved by the department unless there are special reasons to the contrary (Chapter 6 Section 22 of the Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for special educational support, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, the examiner may decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years, after the course has ceased/been changed. The same applies to placements and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

To pass, the student must have passed the compulsory parts and the written exam. For a pass with distinction grade, passing the compulsory parts and pass the written exam with distinction is required.

Course evaluation

Course evaluation is made in writing with help of a general course evaluation, as well as orally in dialogue with the students. The course cordinator summarises and makes ananalysis of the course evaluation and provides suggestions for development of the course.

The results of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.