UNIVERSITY OF GOTHENBURG

INSTITUTE OF BIOMEDICINE

BCG810 Bioanalytical Chemistry and Molecular Pharmacological Cell Biology. Course 1 in Preclinical Experimental Drug Research, 7.5 credits

Bioanalytisk kemi och molekylär farmakologisk cellbiologi. Kurs 1 inom preklinisk experimentell läkemedelsforskning, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Committee for Study Programmes in Pharmacy on 2010-05-20 and was last revised on 2020-12-11 by Institute of Biomedicine to be valid from 2021-01-18, spring semester of 2021.

Field of education: Pharmacy 80%, Medicine 10% and Science 10%
Department: Institute of Biomedicine

Position in the educational system

The course: "Bioanalytical chemistry and molecular pharmacological cell biology -, 7.5 higher education credits, is an elective advanced course at the advanced level in the pharmacy program at Sahlgrenska Academy placed as course 1 within the four courses in preclinical experimental drug research". This course together with Course BCG820 provides a more complete understanding of modern molecular research.

The course is given to a minimum of 10 students and a maximum of 25.

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

Entry requirements

Passed courses semester 1-5 and completed semester 6-7 in the pharmacy programme or the equivalent.

Learning outcomes

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

Knowledge and understanding

- Explain the principle of common bioanalytical and cell biological methods.
- Use examples to explain how different methods can answer different types of experimental questions in bioanalysis, molecular cell biology and pharmacological 'drug target' analysis.
- Understand the practical possibilities and problems that may be associated with the experimental methods that are covered during the course.

Competence and skills

- Be able to compile, analyze, discuss, and present scientific results on how different methods work and can be used.
- Present, discuss and evaluate your own experimental results in relation to previously published studies and in connection with this use a scientifically correct language.
- Apply several different laboratory techniques to solve scientific problems related to bioanalysis and molecular cell biology, and be aware of the limitations of each technique.

Judgement and approach

- Identify, formulate and discuss problems and opportunities with different methods used for development work in bioanalytical methods and molecular cell biology.
- Identify, formulate and discuss societal and ethical issues in relation to research and development work in bioanalytical methods and molecular cell biology. Demonstrate insight into the possibilities and limitations of science and its role in society.
- In dialogue with others, show a reflective approach to one's own and others' values and priorities as well as the choice of perspective.
- Identify and concretize your own need for additional knowledge and take responsibility for your own knowledge development in lifelong learning

Course content

The course aims primarily at a methodological training in modern analytics molecular methods and contains much of its own laboratory work. During lectures, group discussions and demonstrations are given a review of a number of different methods and its usefulness for answering various questions.

Form of teaching
The course consists of laboratory work (compulsory), lectures and group discussions (mandatory). During the labs, students learn to use different advanced bioanalytical methods to study the macromolecules of the cell as well as smaller molecules of drug type.

Language of instruction: English and Swedish

Assessment
The course is examined through written laboratory reports. The labs and the problembased discussions are elements that are mandatory presence. The grading is based on the performance in the written laboratory reports.

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).
The grading scale includes the grades Pass (G at least 60%) and Pass with Distinction (VG at least 85%) and includes evaluation of laboratory report. The grade can transferred to the ECTS scale.

Course evaluation
Written and/or oral course evaluation is performed immediately after completing 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.