DEPARTMENT OF ONCOLOGY-PATHOLOGY

K7F2919, Research on Personalized/Precision Cancer Medicine (PCM), 1.5 credits (hec)

Forskning om Precisionsbehandling av Cancer (PCM), 1,5 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2024-08-29, and is valid from spring semester 2025.

Responsible department

Department of Oncology-Pathology, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

The course will provide to the students the basic principles of personalized cancer medicine (PCM). It will focus on the need to combine new diagnostic tools such as omics, molecular pathology and imaging for tailor-made treatment to stratified or even individual patients. The need for development of multidisciplinary teams - to manage translational research - and core infrastructures will be emphasized. Participants will also learn about early clinical trials and biomarker discovery.

Intended learning outcomes

After completion of the course the student will be able to:

- Define the principle of PCM
- Define the concept of molecular diagnostics
- Understand the place of HTP-omics methods in future cancer diagnostics
- Understand the role of modern imaging in PCM

- Describe the concept of early clinical trials
- Discuss the development of new and useful biomarkers
- Identify the technical tools and platforms that are required to develop such a multidisciplinary and target treatment for cancer patients

Course content

There will be lectures on molecular diagnostics, including Omics and other methods, the SciLifeLab platforms, modern imaging in clinical diagnostics, bioinformatics of PCM, early biomarker driven clinical trials, and biobanking. Project work in small teams will focus on identification of new targets for treatment and biomarker discovery.

Forms of teaching and learning

The course will include a series of learning activities, including introductory and comprehensive lectures/seminars, project work in groups, thematic discussions and student's presentations.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

AAttendance to all the activities of the course are mandatory. Absence from mandatory parts of the course will have to be compensated by other relevant activities after discussion with the course leaders.

Forms of assessment

The course assignment will consist of individual presentations of the solution to a research issue, based on the course topics and project work. One or two students will be appointed as reviewer(s) for each presentation to provide peer feedback for the presenter, in line with concept of formative assignment.

The course organizers will lead the examination and be responsible for summative individual assessment.

Course literature

Selection of recommended recently published research papers on the topic.