

DEPARTMENT OF ONCOLOGY-PATHOLOGY

K7F3112, Basic Course in Tumor Biology and Oncology, 3 credits (hec)

Basal kurs inom tumörbiologi onkologi, 3 högskolepoäng Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2023-11-27, and was last revised on 2024-03-11. The revised course syllabus is valid from autumn semester 2024.

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

This course is an introduction to modern cancer research and oncology. The course is recommended to all PhD students within the field of basic and clinical cancer research. The purpose of the course is to give a general overview of clinical oncology and the molecular mechanisms that promote the carcinogenic transformation.

The overall aim of the course is therefore to form a bridge between pre-clinical and clinical aspects of tumor biology and oncology for PhD students and to provide the students a broad understanding of cancer. We aim to link the basic tumor biology concepts with the main principles of diagnosis and treatment of cancer patients in line with the modern concept of translational and personalised cancer medicine.

Intended learning outcomes

Upon completion of the course the students will be able to;

- Explain the concepts of modern cancer treatments in relation to basic cancer biology.
- Explain the concepts of clinical cancer management, personalized cancer medicine and

outcome evaluation in cancer.

- Reflect on and discuss the concept of clinical trials, the role of translational research and the challenges thereof.
- Reflect on and discuss the most important problems that need to be solved in cancer.
- Reflect on and discuss future goals in cancer prevention, diagnostics and therapy.

Course content

The course will describe the causes as well as the consequences of the transformation of a normal cell into its malignant counterpart, in order to create an understanding of cancer --from molecule to patient--, eventually also discussing the management and treatment of cancer. The topics of the course include genetics, the cell cycle, apoptosis, immunology, diagnosis and treatment, all topics presented from the cancer perspective.

There will be focus on a few malignant diseases, described in more detail serving as models for basic concepts of Tumor Biology and Oncology, including molecular genetics, curative treatment and palliative care, psychosocial aspects of cancer, ethics and epidemiology.

Forms of teaching and learning

The course consists of introductory lectures on cancer management and concepts in cancer, and specific lectures including cancer biology and clinical applications. Reading and group discussions. Group seminars and presentations All students will be offered a possibility to visit the the clinic and meet cancer patients.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Full time during two consecutive weeks. All lectures and teaching activities are mandatory. Single missed occasions will have to be compensated by other relevant activities after discussion with the course leaders.

Forms of assessment

Written individual examination and oral presentation of the group assignment based on the concept of cancer and tumor biology. Each student will be individually assessed.

Course literature

Recommended literature:

-Hallmarks of Cancer: The Next Generation, Hanahan and Weinberg; Cell, March 2011; -Hallmarks of Cancer: New Dimensions, Douglas Hanahan; Cancer Discovery, January 2022 -The biology of cancer 2nd edition, Weinberg, Robert A; Garland Science, Taylor and Francis group, 2014;