Faculty of Medicine

BIMM28, Biomedicine: Tumour Biology, 7.5 credits

Biomedicin: Tumörbiologi, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2023-05-23 to be valid from 2023-05-30, spring semester 2024.

General Information

This is an elective course in the Master's programme in Biomedicine.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Biomedicine	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

On completion of the course, students shall be able to use scientific discourse to

- explain terms that are used to describe the malignant process from normal cell to invasive cancer
- explain the molecular causes of the most common tumour types and discuss how these molecular mechanisms contribute to the emergence of tumours
- explain how cancer-associated genes with different functions can interact
- explain how the tumour cell environment and the immune system affect the progression of the tumour and describe the mechanisms that lead to metastasis
- explain and compare the modes of action for the most common types of cancer treatment
- explain and evaluate the most commonly used experimental methods in cancer research

Competence and skills

On completion of the course, students shall from a research-focused perspective be able to:

- extract, analyse and orally present information from research publications on cancer-related issues
- independently propose experimental approaches for studying basic tumour biology problems
- analyse tumour biology issues based on results obtained using bioinformatic methods
- adopt a professional approach, respect others' opinions in discussions on tumour biology issues and meet set deadlines

Judgement and approach

On completion of the course, the students shall be able to:

- critically review published research related to cancer diseases and discuss potential drugs for treatment of these diseases
- reflect on societal and ethical issues in connection with preclinical research and the development of new cancer therapies
- identify their need of additional knowledge and take responsibility for their knowledge development.

Course content

The course focuses on the molecular mechanisms that lead to tumour development, both with regard to the transformation of the normal cell into a tumour cell and the tumour as an organ consisting of many different cell types. It also covers the most important aspects of diagnosis and prognosis, the range of treatment strategies that are available and which tools can be used to expand this knowledge in the future. The course is linked to current research, and textbooks and original research literature will be used.

Course design

The course is based on weekly themes that include lectures, group exercises and method discussions. Each theme will include a lecture/seminars with experienced cancer researchers, for which students are to prepare and analyse material for discussion. The students will undertake exercises on reading research articles, extracting relevant content and making oral article presentations at journal clubs linked to what has been studied during the course. In a group assignment, the students apply their knowledge of tumour biology research and development. All students are expected to be prepared and participate constructively in discussions in connection with journal clubs, group exercises and the group assignment.

Assessment

The assessment is based on two examination components: Individual written multiple-choice questions (readiness assurance test, iRAT) and course portfolio.

The course portfolio includes journal clubs, group assignment and written reflection on their own contribution and performance in the group assignment, attainment of learning outcomes and societal and ethical issues in the research field.

Other forms of examination may be used if there are special reasons.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass.

Entry requirements

To be admitted to course, students must have at least 120 first or second-cycle credits in science subjects, including at least 15 credits in cell biology, 15 credits in biochemistry, 15 credits in pathobiology/pharmacology/toxicology/molecular medicine, and 7.5 credits in physiology.

Further information

Overlapping course: BIMM21 Biomedicine: Tumour Biology, 7.5 credits

Subcourses in BIMM28, Biomedicine: Tumour Biology

Applies from V24

2401 Individual written multiple-choice questions (iRAT), 2,5 hp
Grading scale: Fail, Pass
2402 Course portfolio, 5,0 hp
Grading scale: Fail, Pass