



Faculty of Medicine

## **BIMM21, Biomedicine: Tumour Biology, 7.5 credits**

*Biomedicin: Tumörbiologi, 7,5 högskolepoäng*

Second Cycle / Avancerad nivå

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### **Details of approval**

The syllabus was approved by Committee for Biomedical, Medical and Public Health Education on 2015-05-27 to be valid from 2015-07-01, spring semester 2016.

### **General Information**

The course is an elective component of the Master of Medical Science programme in Biomedicine.

*Language of instruction:* English

*Main field of studies*

Biomedicine

*Depth of study relative to the degree requirements*

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 in detail the molecular reasons for the most common tumour types and be able to discuss how these molecular mechanisms contribute to the emergence of tumours
- explain how cancer-associated genes with different functions can interact
- explain in detail how the tumour cell environment and the immune defence affect the progression of the tumour and be able to describe the mechanisms that lead to metastases
- explain and compare the modes of action for the most common types of cancer treatment

- explain and assess the most commonly used experimental methods within cancer research.

### **Competence and skills**

On completion of the course, students shall in the context of research be able to

- extract, analyse and present information from scholarly journals on cancer-related issues
- independently suggest experimental methods to address basic issues of tumour biology
- assimilate results based on bio-informatic methods for the analysis of issues of tumour biology
- work in groups and make constructive contributions to the group's ability to solve research problems within tumour biology

### **Judgement and approach**

On completion of the course, students shall be able to

- reflect on and critically review research related to cancer diseases and discuss possible drugs for treatment of the diseases
- reflect on ethical approaches to pre-clinical research within tumour biology
- reflect on societal and ethical issues in connection with the development of new cancer therapies
- identify their need of further knowledge and take responsibility for their ongoing learning

### **Course content**

The course is focused on providing students with detailed knowledge of the molecular mechanisms leading 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 includes the most important aspects of diagnosis and prognosis. Furthermore, the course describes the different available treatment strategies and the tools available to expand this knowledge in the future. The course is linked to current research, and published original research will be used.

### **Course design**

The course is structured around weekly themes which are introduced by a lecture followed by a compulsory TBL\*) group exercise and method discussions that are concluded at the end of the week. 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 practise reading research articles, extracting relevant content and presenting it orally. The article presentations will include references to previous course content. All students are expected to be prepared and participate constructively in the discussion.

\*\*) TBL (team-based learning) means that students are divided into groups in which they are to prepare through readiness assurance tests (RAT), individually and in groups. The students will then work on applying their knowledge.

## **Assessment**

The assessment is based on three examination components: an individual readiness assurance test (iRAT), written exam and course portfolio.

The written exam is used to assess the learning outcomes of knowledge and understanding.

The iRAT is used to assess the learning outcomes of knowledge and understanding.

The course portfolio is used to assess the learning outcomes of competence and skills and judgement and approach through oral seminars for fellow students in the presence of the examiner, active participation in seminars, discussions, TBL and a written reflection paper in which students reflect on their performance to attain the learning outcomes.

*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 120 first or second cycle credits in science subjects, including at least 15 credits in basic chemistry, 15 credits in cell biology, 15 credits in biochemistry, 15 credits in human physiology and 7.5 credits in immunology.

## **Further information**

The course largely corresponds to the previous course BIMM51 Tumour Biology.

## Subcourses in BMM21, Biomedicine: Tumour Biology

Applies from V16

- 1501 Individual readiness assurance tests (iRATs), 2,0 hp  
Grading scale: Fail, Pass
- 1502 Written exam, 3,0 hp  
Grading scale: Fail, Pass
- 1503 Course portfolio, 2,5 hp  
Grading scale: Fail, Pass  
Oral presentation and course portfolio with reflection on their performance to attain the learning outcomes.