



**Karolinska  
Institutet**

Course syllabus for

## **Pathology, 3 credits**

Patologi, 3 hp

This course syllabus is valid from spring 2024.

Please note that the course syllabus is available in the following versions:

Spring2019 , Spring2020 , Spring2021 , Spring2022 , Spring2023 , Spring2024

Course code	1BI047
Course name	Pathology
Credits	3 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2018-10-30
Revised by	Programme committee for study programmes in biomedicine
Last revision	2023-10-11
Course syllabus valid from	Spring 2024

## **Specific entry requirements**

At least grade pass (G) at the courses Introduction to biomedical science; General and organic chemistry; Cell-, stem cell and developmental biology; Biochemistry; Genetics, genomics and functional genomics; Chemical biology; and Tissue biology, and at least grade pass (G) at the parts Laboratory work and seminars (4 credits) and Project work (2 credits) of the course in Immunology and microbiology, and the part Practical features (4 credits) of the course Neuroscience, at the Bachelor's programme in Biomedicine.

## **Objectives**

Upon completion of the course, the student should be able to:

Regarding knowledge and understanding

- describe causes and effects of different types of cellular adaptations and cell deaths, and to histologically recognize them,
- explain the mechanisms behind tissue repair and regeneration,
- explain the concept and mechanisms involved in inflammation,

- explain the basics behind carcinogenesis, tumour progression and tumour morphology and tumor genetics,
- choose appropriate molecular analysis methods for different pathological cases,
- account for the regulations regarding biobanking.

Regarding competence and skills

- describe and identify pathological tissues and their cells in histological tissue sections,
- independently evaluate results from a tissue analysis laboratory project.

Regarding judgement and approach

- account for and be able to reason about ethical aspects regarding biobanking.

## Content

Initially, the theory behind tumour pathology and different basic pathological concepts, such as cell injury, cell death and wound healing, are presented. The emphasis in the course lies on understanding the histopathological appearance of different organ systems and the connection to their functions. Clinical examples where different tissue analysis methods used will be discussed. The results of a laboratory project is evaluated by the student.

## Teaching methods

The teaching will be in the form of lectures, digital microscopy of histological preparations, demonstrations, seminars and a laboratory project.

## Examination

Part 1. Laboratory-based project. The examination consists of a written laboratory project . The results of the written report is graded Fail/Pass.

Part 2. Integration of theory and tissue analysis. The examination consists of a written examination covering the entire contents of the course. Graded Fail/Pass/Pass with distinction.

To pass the whole course the grade pass must have been obtained for all parts of the course. The final grade for the whole course is based on the grade for Part 2 (written examination).

### Compulsory participation

The course introduction, and the laboratory-based project and seminars are compulsory. The course director assesses if, and in that case how, absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results for respective part will not be registered . Absence from a compulsory activity may result in that the student cannot compensate the absence until the next time the course is given.

Limited number of examinations or practical training sessions

Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has failed six examinations/tests, no additional examination or new admission is provided.

The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination, for which the student registered but not participated in, will not be counted as an examination.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

## Other directives

The course language is English.

Course evaluation will be carried out in accordance with the guidelines established by the Committee of Higher Education.

## Literature and other teaching aids

### Mandatory literature

Course compendium, lecture materials and videos

### *Mandatory literature*

Course hand-outs

### *Recommended literature*

*Kumar, Vinay*

#### **Robbins basic pathology**

*Kumar, Vinay; Abbas, Abul K.; Aster, Jon C.; Robbins, Stanley L.*

10. ed. : Philadelphia, PA : Elsevier Science Health Science, 2017 - 928 s.

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