



**Karolinska
Institutet**

Course syllabus for

Advanced pathophysiology, 7.5 credits

Avancerad patofysiologi, 7.5 hp

This course syllabus is valid from autumn 2025.

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

Autumn2023 , Autumn2024 , Autumn2025

Course code	3BL000
Course name	Advanced pathophysiology
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedical Laboratory Science
Level	AV - Second cycle
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Education committee LABMED
Decision date	2023-03-27
Revised by	Education committee LABMED
Last revision	2024-10-07
Course syllabus valid from	Autumn 2025

Objectives

Goal

The overall goal of the course is for the students to develop in-depth knowledge of and understanding of disease mechanisms and diagnostics thereof, relevant for biomedical analysts.

Knowledge and understanding

After completing the course, the student should be able to:

- Theorize and reflect on human disease conditions relevant to the profession, including symptoms, causes of disease, disease development and diagnostics.
- Relate the UN's global sustainable development goals 2030 to different diseases and diagnostics.

Skills and Abilities

After completing the course, the student should be able to:

- Independently analyse, evaluate and compile information on human disease conditions relevant to the profession, including symptoms, causes of disease, disease development and diagnostics.
- Based on the areas of molecular medicine, pathology or clinical physiology, reflect and theorize about, as well as compile material and give an oral account of, for the profession, relevant human disease states.
- Relate and reflect on the acquired knowledge and understanding to the development and diagnosis of diseases relevant to the profession.

Evaluation ability and approach

After passing the course, the student must be able to:

- Apply a scientific and reflective approach.

Content

Content

The course content is based on and is a deepening of previous knowledge of pathology and physiology within the basic education for biomedical analysts. The course is divided into five different themes where the students acquire in-depth knowledge as below:

- Infection and inflammation
- Respiratory diseases
- Metabolic diseases
- Circulatory diseases
- Tumor diseases

Teaching methods

Forms of work

The pedagogy will be based on student-centered and student-activated pedagogy.

Each theme starts with a week of independent preparation based on prepared material, followed by student-activating, teacher-led activities with the possibility of feedback with teachers. During the second part of each theme, students delve more deeply into one of the three specializations (advanced molecular medicine, advanced pathology or advanced clinical physiology) within the program through a project work.

Examination

The course is examined with a written individual exam graded as fail/pass/pass with distinction. For a pass grade of the course, an active participation in the teacher led activities and passed grade for project works is also required.

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. If the student has failed six examinations/tests, no additional examination is given. Each occasion the student participates in the same test counts as an examination. Submission of a blank exam paper is regarded as an examination. In case a student is registered for an examination but does not attend, this is not regarded 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.

The examiner assesses if, and in that case how, absence can be compensated. Absence from a compulsory activity may result in that the student cannot compensate the absence until the next time the course is given.

Transitional provisions

For a course that has been discontinued, undergone major changes, or where the reading list has been significantly changed, an additional exam (other than the regular exam) of the previous content or literature should be conducted for a period of one year from the date the change took place.

Other directives

The course is given in Swedish and English. Course evaluation is carried out according to the guidelines established by the Committee for education at first level and advanced level.

Literature and other teaching aids

Advanced pathophysiology

S. Silbernagl; F. Lang

Color Atlas of Pathophysiology, 3rd Ed

Georg Thieme Verlag Stuttgart, 2016

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