DEPARTMENT OF LABORATORY MEDICINE

H5F3109, Pathology, 3 credits (hec)

Sjukdomslära, 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 2024-09-02. The revised course syllabus is valid from spring semester 2025.

Responsible department

Department of Laboratory Medicine, Faculty of Medicine

Prerequisite courses, or equivalent

There are no prerequisites for the course, but basic knowledge of human biology/physiology concepts is required at the high school level.

Purpose & Intended learning outcomes

Purpose:

The course aims to provide doctoral students with a foundational understanding of pathology, encompassing basic pathologic events, such as cell deaths, tissue injury, repair, regeneration, inflammation, and their implications in disease development. Additionally, the course seeks to familiarize students with the microstructure of pathological tissues, compared to normal tissue and how above-mentioned pathological events are coupled to the microstructure of pathological tissues.

Intended Learning Outcomes:

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

- describe the mechanisms behind basic pathological events
- identify selected pathological tissues at microscopical level and characterize the components/cells compared to normal tissues
- demonstrate their proficiency in basic pathological terminology usage specific to pathology and to describe various disease processes, conditions, and abnormalities
- utilize imaging techniques for the analysis/examination of tissue samples

- conduct literature searches and integrate information on specific diseases, culminating in oral presentations and discussions
- demonstrate awareness of ethical considerations in the field of pathology

Course content

The course is structured into two main components. The first part covers topics such as cell injury, adaptation, tissue repair, inflammation, cancer development, and classification, with a focus on methods in molecular pathology. The course also explores the pathological events that occur during the progression towards malignancy and throughout the invasion of cancer. In the second part, a specific group of diseases is studied through digital microscopy practices and presented both in written and oral formats. Additionally, students can gain insight into the operation of the Pathology Department and the processing of materials during a guided tour.

Forms of teaching and learning

The course spans 2 weeks and is a full-time program. Primarily adopting an online format, the course curriculum comprises a blend of pre-recorded video materials and live Zoom lectures held between 9 am and 5 pm, allowing for individual study time as well. Guest speakers, contributing their expertise, enrich the learning experience during the sessions.

One unique aspect of this course is the exploration of human tissue sections through digital microscopy. This practical component enables students to engage in discussions with experienced pathologists, facilitating task completion. The students also have the possibility to participate in a guided tour at the pathology department.

As part of the course, students collaborate with peers in a group project, applying their acquired knowledge to problem-solving. The project culminates in a presentation followed by oral discussions with both peers and instructors.

On the final day of the course, students demonstrate their acquired knowledge through an onsite written test administered via Inspera.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory Components:

Attendance in the microscopy demonstrations, and the assessments with Microspy Practice Reports, Group Project Work including presentations and Written Examination are mandatory and cannot be compensated for.

Forms of Assessment:

Microscopy Practice Reports: Students engage in digital microscopy sessions to analyze tissue sections, comparing normal and tumor cases. Pre-recorded videos and consultations with pathologists are provided to assist in completing the reports.

Group Project Work: During group presentations, we assess how well students were able to find information and combine acquired knowledge to find solutions to a selected group of diseases related problem.

Written Examination: The written on site exam consists of multiple-choice questions and short essay questions, assessing students' understanding of the course material, including tissue structures and pathological concepts. Images from microscopy practice sessions are incorporated into questions to assess practical knowledge.

Course literature

Recommended reading material:

Basic pathology: An introduction to the mechanisms of disease. Lakhani SR et al, 2009, 4th Ed (London)

Rubin's Pathology, Rubin, R, Strayer, D. S., or,

Essential Pathology, Rubin, E, Farber, J. L.

Surgical pathology - A practical guide for non-pathologist, by Ahmad Altaleb, Springer

The Practice of surgical pathology - A beginner's guide to the diagnostic process, by Weedman Molavi, Springer