



Course syllabus

Faculty of Health and Life Sciences

Department of Chemistry and Biomedical Sciences

2BL002 Tillämpad laboratoriemetodik I, 10,5 högskolepoäng

2BL002 Applied clinical laboratory methodology I, 10.5 credits

Main field of study

Biomedical Science, Biomedical Laboratory Science

Subject Group

Biomedical Laboratory Science

Level of classification

First Level

Progression

G2F

Date of Ratification

Approved 2009-06-09

Revised 2016-02-02 by Faculty of Health and Life Sciences.

The course syllabus is valid from spring semester 2016

Prerequisites

Courses within the Biomedical Laboratory Science Programme year 1 of a total of 60 credits and Anatomy and Physiology with Fundamental Clinical Laboratory Methodology 15 credits, Pathophysiology and Internal Medicine 7.5 credits, Clinical Immunology with Laboratory Methodology 7.5 credits, Clinical Microbiology with Laboratory Methodology 7.5 credits, and Clinical Pathology with Laboratory Methodology 7.5 credits, or the equivalent.

Objectives

After completing the course the student should be able to:

- explain and apply laboratory methodology in routine diagnostics of clinical pathology/cytology and clinical microbiology, and describe the function and maintenance of relevant analysis equipment
- describe preanalytical, biological, and methodological factors that may impact analytical findings
- describe the diagnostic and clinical significance of laboratory analyses and work meticulously, independently, and in accordance with relevant safety protocols, demonstrating responsibility and self-criticism
- describe quality assurance, hygiene, and waste management procedures in

- laboratory medicine practice
- handle patient samples with respect, demonstrating an ethical approach
- explain the organisation and function within healthcare of the laboratory disciplines included in the course, as well as the regulatory framework surrounding these disciplines.

Content

The course is a placement course including three weeks at a clinical pathological/cytological laboratory, and three weeks at a clinical microbiological laboratory. One week is designated for scientific compilation and presentation of a practical test conducted in each discipline, as well as oral examination.

Module 1, Clinical pathology/cytology, 5.25 credits

This module includes participation in the daily work at a unit for:

- handling and preparing human tissue for histological and cytological diagnostics
- routine histochemical/immunohistochemical and cytochemical/immunocytochemical analyses
- (in applicable cases) clinical genetic and molecular biological diagnostics, as well as morphological and flow cytometry diagnostics.

Module 2, Clinical microbiology, 5.25 credits

This module includes participation in the daily work at a unit for:

- sample reception and specimen processing
- microbiological routine culturing of urine and faeces, upper respiratory tract samples, and wound and autopsy material, and determination of genus, species, and antibiotic resistance
- serological diagnostics
- molecular biological diagnostics.

General components of both modules:

- documentation of analysis techniques, methodology, and analytical findings
- interpretation of analytical findings as a basis for diagnosis and for treatment and follow-up
- quality assurance, patient safety, ethical aspects, and hygiene and waste procedures in laboratory medicine practice.

Type of Instruction

Instruction is delivered in the form of practical and theoretical laboratory supervision by expert supervisors at a clinical laboratory in collaboration with the course coordinator. At the end of the course, the main supervisor for each module submits a written evaluation and approval of the student's workbook.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

Each module is examined through an oral and a written presentation of a practical test in clinical cytology/pathology (Module 1) and clinical microbiology (Module 2) respectively. The tests reflect the workbook compiled by the student.

Both modules are assessed using the grades Fail, Pass, and Pass with Distinction.

All the course elements serve as a basis for grading, including the main supervisor's evaluation.

The grading criteria for the grade of Pass are based on the course objectives (see above).

Placements with examinations are limited to two opportunities.

Course Evaluation

During or shortly after the course, a course evaluation should be conducted. The result and analysis of the course evaluation should be promptly communicated to the students who have taken the course. Students who are taking the course when it is offered the next time should be informed of the result at the course introduction. The course evaluation is anonymous.

Other

A student may be failed or required to discontinue their placement if they demonstrate such significant deficiencies in knowledge, skills, or professional conduct that patient safety is at risk. The student is eligible for a new placement opportunity once an individual action plan has been completed.

Required Reading and Additional Study Material

Required reading

Modules 1 and 2

Quality-assured method descriptions, instrument manuals, and associated reference literature provided at the clinical pathological/cytological and clinical microbiological laboratories. These materials constitute the required reading for practical application and for elucidating the theoretical background.

Reference literature

Required reading from previous courses in the Biomedical Laboratory Science Programme and other relevant literature within biomedical laboratory science/biomedical science.

Bancroft, J. & Gamble, M. *Theory and practise of Histological Techniques*. Churchill Livingstone, the latest edition.

Kumar, V., Abbas, A.K., Fausto, N.& Mitchell, R.N. *Robbins Basic Pathology*. Saunder's publishing company, the latest edition.

Bauman, R.W. *Microbiology with diseases by taxonomy*. Benjamin Cummings, the latest edition.