



## COURSE SYLLABUS

# Laboratory Methods, advanced and applied course, 22.5 credits

*Laboratoriemetodik, fördjupad och tillämpad kurs, 22,5 högskolepoäng*

---

<b>Course Code:</b> HLAk11	<b>Education Cycle:</b> First-cycle level
<b>Confirmed by:</b> Chairperson of the Educational Council Aug 24, 2011	<b>Disciplinary domain:</b> Medicine
<b>Revised by:</b> Utbildningsrådet Apr 21, 2020	<b>Subject group:</b> BL1
<b>Valid From:</b> Aug 24, 2020	<b>Specialised in:</b> G1F
<b>Version:</b> 6	<b>Main field of study:</b> Biomedical Laboratory Science
<b>Reg number:</b> Avdelningen för naturvetenskap och biomedicin/Department of Natural Science and Biomedicine	

---

### Intended Learning Outcomes (ILO)

Upon completion of the course the student should have the:

Knowledge and understanding  
in order to

- provide details about the theories behind frequently used analyses and methods used within biomedical laboratory science
- provide details of the acts and ordinances that govern health and medical care laboratory work plus healthcare organisation
- describe the importance of the workgroup and the function of team collaboration.

Skills and abilities  
in order to

- plan and implement frequently used biomedical laboratory methodology and quality work
- collect, process and critically interpret results, and observe and attend to deviations
- present results based on scientific methodology, both orally and in writing
- display the ability to work in a team and cooperate
- reflect upon the professional role of the biomedical scientist.

Judgement and approach  
in order to

- display the ability to approach patients and their next of kin in a professional manner
- display the ability to professionally handle chemicals
- evaluate the connections and consequences of the laboratory analyses for the patient, their next of kin and healthcare process
- observe and discuss ethical dilemmas.

### Contents

- clinical chemistry laboratory methodology

- microbiological laboratory methodology and molecular biology
- histopathology laboratory methodology
- application of laboratory methodology within and outside of the field of laboratory medicine, organisation theories and workgroup psychology

The following is integrated into all components stated above:

- immunology laboratory methodology
- quality work and quality assurance within laboratory methodology
- testing methods and documenting measurements
- the connection between medical background factors and the choice of analysis and examination procedure
- the significance of diagnostics to the patient's continued treatment
- teamwork
- ethical considerations

### Type of instruction

The course consists via clinical practice in laboratories, seminars and lectures.

The teaching is normally conducted in Swedish, but can occasionally be in English.

### Prerequisites

Basic eligibility and completed courses of 30 cr within the main area of biomedical laboratory science included in the Biomedical Scientist Program or the equivalent.

### Examination and grades

The course is graded A, B, C, D, E, FX or F.

The examination occurs according to the following:

**Clinical chemistry laboratory methodology** supervisor-assessed clinical practice and an individual practical and theoretical test.

**Microbiological laboratory methodology and molecular biology** supervisor-assessed clinical practice and an individual practical and theoretical test .

**Histopathology laboratory methodology** supervisor-assessed clinical practice and an individual practical and theoretical test.

**Application of laboratory methodology within and outside of the field of laboratory medicine,** organisation theories, workgroup psychology, teamwork, ethical considerations: individual tasks to be solved practically and in writing and presented during seminars.

A university lecturer serves as examiner for the course.

Registration of examination:

Name of the Test	Value	Grading
------------------	-------	---------

Clinical chemistry laboratory methodology, practical theoretic examination	1 credit	A/B/C/D/E/FX/F
Clinical practice clinical chemistry laboratory methodology. 3 weeks	4.5 credits	U/G
Microbiological laboratory methodology and molecular biology, practical theoretic examination	1 credit	A/B/C/D/E/FX/F
Clinical practice, microbiological laboratory methodology and molecular biology. 3 weeks	4.5 credits	U/G
Histopathology laboratory methodology, practical theoretic examination	1 credit	A/B/C/D/E/FX/F
Clinical practice, histopathology laboratory methodology, 3 weeks	4.5 credits	U/G
Application of laboratory methodology within and outside of the field of laboratory medicine	6 credits	U/G

## Other information

### Temporary interruption of a course

The School of Health and Welfare may suspend a student's participation in clinical training or other practical activities during the course if a student demonstrates gross unfitness/ incompetence when applying skills. A student whose work-based training or other practical activities have been canceled due to gross inadequacy/incompetence may not continue study before the course director or examiner has verified and approved that the student has the knowledge and skills required. In connection with a decision on suspension, the decision will specify the grounds on which the suspension is based. After the decision an individual plan will be established for the student where knowledge and skills gaps are specified, the degree of support the student is entitled to, and the terms and date(s) for examination(s).

### Limitations on the number of occasions for placement

Interruption of placement or other clinical/practical activities due to gross unfitness/incompetence when applying skills is considered a missed occasion. Students who have failed three placements in the same course must discontinue their studies in the program in question. A student who has been failed three times on their placement will be offered counselling with student counsellor.

### Course literature

Cook, D J. & Warren P.J. (2015). *Cellular Pathology*. Banbury, England: Scion Publishing Limited.

Hoffbrand, A.V., Moss, P.A.H., & Pettit, J. E. (2019). *Essential Hematology*. Oxford, England: Wiley-Blackwell.

Tille P. M. (2016). *Bailey & Scott's Diagnostic Microbiology*. St. Louis, MO: Elsevier Mosby.

Wilson, K., & Walker, J. (2018). *Principles and techniques of biochemistry and molecular biology*. Cambridge, England: Cambridge University Press.

The latest edition of the course literature will be used.