



**Karolinska  
Institutet**

Course syllabus for

## **Diagnostic Molecular Cytology, 4 credits**

Diagnostisk molekylär cytologi, 4 hp

This course syllabus is valid from autumn 2021.

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

Autumn2016 , Autumn2020 , Autumn2021 , Autumn2022

Course code	3DC002
Course name	Diagnostic Molecular Cytology
Credits	4 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Diagnostic Cytology
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Utbildningsnämnden Labmed
Decision date	2016-05-13
Revised by	Education committee LABMED
Last revision	2021-02-24
Course syllabus valid from	Autumn 2021

### **Specific entry requirements**

Degree of Bachelor of Science in Biomedical Laboratory Science about 180 credits from education with Specialization Laboratory Medicine or the equivalent. Or completed biomedical laboratory science education with Specialization Laboratory Medicine and Degree of Bachelor in biomedical laboratory science. In addition, proficiency in Swedish and English equivalent to Swedish B/Swedish 3 and English A/English 6.

### **Objectives**

The general aim of the course is that the student should develop advanced knowledge in molecular biological methodology and be able to apply these in diagnostic cytology.

To pass the course, the student should be able to:

#### **Knowledge and understanding**

- Relate molecular biological diagnostic methods to diagnostic cytology and screening
- Discuss complex tolkningsalgoritmer as an integrated part of diagnostic cytology

**Skills and abilities**

- Identify relevant cells before different molecular biological diagnostic methods
- Assess the result of the molecular biological diagnostic analyses and be able to connect these to different diseases
- Make assessments of complex analysis results in cytologic diagnostics, screening and quality assurance

**Values and perspectives**

- Reflect on patient case in subject area diagnostic cytology considering ethical and social aspects

**Content**

In the course diagnostic molecular cytology, the theory and the application of different molecular biological methods that are used in diagnostic cytology are studied.

Examples of molecular biological analyses:

- Detection and typing of human papillomavirus (HPV)
- Mutation analyses
- Serologi
- Djupsekvensering
- Fluorescerande in situ-hybridisering (FISH)
- Cell sorting

The course is given in a streak during the academic year and is divided into two components. The two components are integrated with the courses in the Master's (60 credits) programme for diagnostic cytology, where molecular analyses are relevant for the diagnostic position.

**Diagnostic molecular cytology within gynecology and respiratory tract, 2.0 hp**

Grading scale: GU

The component treats diagnostic molecular cytology in gynaecology and the respiratory organs.

**Diagnostic molecular cytology within urinary tract and aspiration, 2.0 hp**

Grading scale: GU

The component treats diagnostic molecular cytology in the urinary tract and aspiration.

**Teaching methods**

The course contains varying working methods consisting of lectures, demonstrations, laboratory sessions, group work and study visits.

**Compulsory participation**

Laboratory sessions including practical overviews before laboratory sessions, group assignments and study visits are compulsory.

**Examination****Written examination.**

Module 1: Be assessed through a written examination. Grade Fail/Pass

Module 2: Be assessed through a written examination. Grade Fail/Pass

The examiner decides whether, and if so how, absence from compulsory course elements can be made up for. Study results cannot be reported until the student has participated in compulsory course elements or compensated for any absence in accordance with instructions from the examiner. Absence from a compulsory course element could mean that the student can not retake the element until the next time the course is offered.

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. If the student has carried out six failed examinations no additional examination will be 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.

## Transitional provisions

Examination according to this syllabus will be provided during one year after the decision to terminate the course or revision of the syllabus.

## Other directives

Language of instruction is Swedish, but teaching in English can occur.

A course evaluation will be carried out in accordance with the guidelines established by the Board of Higher Education.

## Literature and other teaching aids

*Bartlett, John M. S.; Shaaban, Abeer; Schmitt, Fernando*

**Molecular pathology : a practical guide for the surgical pathologist and cytopathologist**

Cambridge : Cambridge University Press, 2015.

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