



Course syllabus for

Advanced echocardiography, 7.5 credits

Avancerad ekokardiografi, 7.5 hp

This course syllabus is valid from autumn 2025.

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

Autumn2024 , Autumn2025

Course code	3BL005
Course name	Advanced echocardiography
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	2024-03-21
Revised by	Education committee LABMED
Last revision	2024-10-07
Course syllabus valid from	Autumn 2025

Specific entry requirements

Completed biomedical laboratory science education and Degree of Bachelor of Science in Biomedical Laboratory Science about 180 credits or Bachelor's degree in biomedical laboratory science. In addition, proficiency in Swedish and English equivalent to Swedish B/Swedish 3 and English A/English 6.

Objectives

The course is designed to provide in-depth knowledge of echocardiography at the second cycle level.

Knowledge and understanding

Upon completion of the course the student should be able to:

- explain normal hemodynamics in relation to altered hemodynamics associated with various cardiac diseases from an echocardiographic perspective
- analyse and compare various echocardiographic techniques such as transesophageal echocardiography, stress echo, strain contrast echo, and tissue Doppler and explain when and how the various techniques should be used.
- analyse and compare the results of different echocardiographic examinations in different heart

diseases.

- explain and justify when other cardiac imaging diagnostic techniques are more appropriate than echocardiography for different cardiovascular pathophysiologies.

Skills and abilities

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

- independently interpret echocardiographic examinations at the second cycle level from an evidence-based perspective.
- independently formulate and summarise appropriate response statements from various echocardiographic studies with different pathophysiologies.

Values and perspectives

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

- adopt a scientific and reflective attitude.

Content

The course describes different technologies in echocardiography with an emphasis on transesophageal echocardiography, stress echo, strain echo, contrast echo and tissue Doppler in relation to different pathophysiologies and patient cases. The student will be trained to independently interpret and assess different echocardiographic examinations, which will then be discussed at a case seminar. The student will also gain advanced knowledge of the method from an evidence-based working method by reviewing guidelines related to method descriptions and clinical working methods.

Teaching methods

Teaching and learning will be based on student-centred and student-activated teaching and learning. Teaching will take the form of lectures, independent study, written assignments, group work and seminars with clinical cases.

Examination

Students are assessed by written assignments, which are supplemented by oral examinations (fail/approved/approved with distinction) and oral presentations (fail/approved).

Students who have failed a regular examination are entitled to repeat the examination five times. If the student has failed six examinations/tests, no further examination will be held. Each participation in the same examination counts as one examination. The submission of a blank examination paper is counted as an examination. If a student is registered for an examination but does not take part in it, this is not counted as an examination.

In the event of special circumstances or if a student with a disability requires certain adjustments, the examiner may decide to deviate from the provisions of the syllabus regarding the form of examination, the number of examination options, the possibility of completion or exemption from compulsory educational elements, etc. The content and intended learning outcomes as well as the level of expected skills, knowledge and abilities may not be altered, deleted or lowered.

The examiner decides whether and how the absence of compulsory parts can be compensated. Absence from a compulsory part may mean that the student will not be able to take the opportunity until the next time the course takes place.

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.

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Other directives

The course is offered in Swedish and English. The course is assessed according to the guidelines set by the Committee for Higher Education.

Literature and other teaching aids