Course syllabus for

Echocardiography and Doppler Technique - an introduction, 7.5 credits

Ekokardiografi och Doppler - introduktion, 7.5 hp
This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.
Please note that the course syllabus is available in the following versions:
Autumn2010 , Autumn2011

Course code	1QA079
Course name	Echocardiography and Doppler Technique - an introduction
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	First cycle, in-depth level of the course cannot be classified
Grading scale	Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Styrelsen för utbildning
Decision date	2010-09-10
Revised by	Education committee LABMED
Last revision	2017-09-28
Course syllabus valid from	Autumn 2011

Specific entry requirements

Degree of Bachelor of Science in Biomedical Laboratory Science, Degree of Bachelor of Science in Nursing or Degree of Bachelor of Science in Engineering with a specialisation in biology, biotechnology or medical technology. Or 120 credits from the Study Programme in Medicine. English and Swedish language skills equivalent to English A and Swedish B at Swedish upper secondary school are also required.

Objectives

The course should give basic knowledge to independently be able to carry out simple echocardiographic studies, understand, measure and interpret these and also be able to account for commonly occurring pathophysiology.
On completion of the course, the student should be able to:
· account for the physical principles that lie behind the ultrasound technique including the Doppler technology.

· identify the different anatomic structures in the ultrasound images of the heart and account for from where and how these images are registered.
· account for different heart diseases their aetiology, symptoms, pathophysiology, treatment and how they are diagnosed with ultrasound and Doppler technique.
· describe which projections and technologies that should be used in different issues within the cardiac diagnosis and account at a general level for which formulae, default values and calculations that should be applied.
· under supervision carry out a complete ultrasonography with dimension, function, and flow measurements on a non heart sick individual.
· account for calibrations, sources of errors and maintenances that can be applied on an ultrasound machine.
· receive and prepare patients for study of the heart with ultrasound and use current routines for this and alone have tested on to examine patients.

Content

The course includes lectures and study assignments about physical principles of different forms of ultrasound such as B-mode, M-mode, two dimensional image reproduction and flow as well as motion measuring with continuous Doppler, pulsed Doppler, colour Doppler and energy Doppler.
Based on echocardiographic and Doppler images, the underlying physiology, anatomy and pathophysiology of healthy and sick hearts are discussed.
The course also deals with principles of structure of apparatus that is used within echocardiography including transducer for transthoracic and transesophageal heart examination as well as safety aspects and calibration of equipment. Finally, the use of ultrasound technique for diagnostics is also considered in heart diseases and at a general level.

Teaching methods

The course is given in the form of lectures, demonstrations, individual and joint laboratory sessions, and practical learning elements.

Examination

Examination takes place in the form of oral presentations in groups and individual written final examination and a practical test.

Seminars, group assignments and laboratory sessions are compulsory. In case of absence, an agreement concerning compensation is made between the student and the responsible teacher .

A re-examination is given in connection with the course. Additional re-examination is given by agreement with responsible teacher. However there are at most 6, of the student implemented, examinations.

Transitional provisions

Examination will be provided during a period of two years after a close-down of the course.
Examination may take place following previous course literature during a period of one year after the date of the renewal of the course literature.

The course has been cancelled.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Board of

Higher Education. Language of instruction: Swedish

Literature and other teaching aids

Olsson, Arne

Ekokardiografi

3., [omarb. och kompletterade] uppl. : Stockholm : Ultraview, 2010 - viii, 103 s.
ISBN:978-91-633-7284-1 (spiralh.) LIBRIS-ID:11950918
Library search

Holmer, Nils-Gunnar

Diagnostiskt ultraljud : grunderna

2. uppl. : Lund : Teknikinformation, 1992 - viii, 400 s.
ISBN:91-88156-02-8 LIBRIS-ID:7769368
Library search

Brauer, Kerstin

Klinisk fysiologi : med nuklearmedicin och klinisk neurofysiologi

Jonson, Björn; Wollmer, Per

2. uppl. : Stockholm : Liber, 2005 - 427 s.
ISBN:91-47-05244-9 (inb.) LIBRIS-ID:9864337
Library search