Course syllabus for

Magnetic resonance tomography, 7.5 credits

Magnetkameran, 7.5 hp
This course syllabus is valid from spring 2012.
Please note that the course syllabus is available in the following versions:
Spring2010 , Spring2012 , Spring2013 , Spring2014 , Spring2018 , Spring2019 , Spring2022 , Spring2025

Course code	1RS034
Course name	Magnetic resonance tomography
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Radiography
Level	G2 - First cycle 2
Grading scale	Pass, Fail
Department	Department of Clinical Science, Intervention and Technology
Decided by	Programnämnd 6
Decision date	2010-03-26
Revised by	Programnämnd 6 (Biomedicinsk analytiker- och Röntgensjuksköterskeprogrammen)
Last revision	2011-11-15
Course syllabus valid from	Spring 2012

Specific entry requirements

To be qualified to a higher semester, it is required that the student has taken at least 15 ECT credits from last semester, and all credits from previous semesters.

Objectives

On completion of the course, the student should be able to: describe basic physical principles of image production with magnetic resonance imaging describe the technical structure of a magnetic resonance imaging system apply the examination methodology at commonly occurring magnetic resonance examinations. apply and explain the safety measures that should be taken at a magnetic resonance examination describe the diagnostic possibilities and limitations of the technology at the clinical application have knowledge of different methods for reproduction such as diffusion, perfusion, functional MRI and spectroscopy

Content

The course will treat the physical basic principles of image production with magnetic resonance imaging and the technical structure of the system. The course intends also to provide advanced knowledge in the performance of common examinations such as the investigation of the spine and the brain. The student is also trained to identify diagnostic information that the method can provide. This implies to understand how and why different image sequences are used, and what can be reproduced. The course also deals with the risks that may occur in connection with the examination. This in order for the student to learn to take the safety actions compatible in a magnetic resonance examination. The course also includes different methods of imaging in MR, such as diffusion, perfusion, functional MRI and spectroscopy.

Teaching methods

The working methods that are used during the course are clinical placement in connection with magnetic resonance examinations, seminars, laboratory sessions and lectures.

Examination

The course is examined through a practical examination and an independent written examination. The student should independently be able to apply and explain safety measures in connection with a MR-examination through a practical assessment. This is assessed from a specific evaluation form that is informed the student in connection with course introduction. The physical, technical and methodological expected learning outcomes are examined through written examination. For a Pass grade in the course active participation in compulsory parts is required. Clinical placement seminar and laboratory sessions is compulsory. Compensation of absence from compulsory part is planned in consultation with supervisors and course directors. The student is entitled to a total of six test occasions to get passed. In connection to the course three occasions will be given One within the course, one during the following re-examination. The third opportunity is provided before the beginning of the next semester, or in close connection to that. In certain cases, it is required that the student submits an exemption application before he/she get the results of his/her latest completed examination. Three more opportunities will be provided as described above when the course is run next time. The examiner may with immediate effect interrupt a student's clinical rotation (VFU), or the equivalent, if the student demonstrates such serious deficiencies in knowledge, skills or attitudes that patient safety or patient confidence in healthcare is at risk. When clinical rotation is interrupted according to this, it implies that the student fails in the current part, and that one clinical rotation opportunity is used up. In such cases, an individual action plan should be set up for required activities and examinations, before the student is given a possibility for a new clinical rotation in the course.

Transitional provisions

The student may be examined under a previous syllabus within a year after the date when a close-down or major changes of the course was decided.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Board of Education at Karolinska Institutet.

Literature and other teaching aids

Westbrook, Catherine; Kaut-Roth, Carolyn; Talbot, John

MRI in practice

3. ed. : Oxford : Blackwell Publishing, 2005 - 410 s.

ISBN:1-4051-2787-2 (pbk) LIBRIS-ID:10152174

Library search

Elster, Allen D.

Questions & answers in magnetic resonance imaging

Burdette, Jonathan H

2. ed. : St. Louis : Mosby, cop. 2001 - 333 s.

ISBN:0-323-01184-5 LIBRIS-ID:4816445

Library search

Rinck, Peter A.

Magnetic resonance in medicine : the basic textbook of the European magnetic resonance forum

4., completely. rev. ed. : Berlin : Blackwell Wissenschafts-Verlag, 2001 - 245 s.

ISBN:0-632-05986-9 LIBRIS-ID:8420222

Library search