SYLLABUS

Diagnostic modalities 7.5 credits M0051H

Diagnostiska modaliteter

Course syllabus admitted: Autumn 2016 Sp 1 - Spring 2017 Sp 4

DECISION DATE
2016-02-15

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LULEÅ TEKNISKA UNIVERSITET

Diagnostic modalities 7.5 credits M0051H

Diagnostiska modaliteter

First cycle, M0051H

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G VG	Medicinsk bildvetenskap	Medical Technologies

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and The course furthermore assumes the following completed courses:
M0070H General Pharmacology,contrast agents and pharmaceutical calculation (replaces M0052H)
M0066H Radiography Nursing techniques in position radiography with Clinical Practice (replaces O0051H)
M0067H Radigraphy Nursing Interventions in position radiography with Clinical Practice (replaces O0050H)
M0029H Medical Science: Microbiology,infection control and infection disease
M0026H Medicinsk vetenskap Anatomi och Fysiologi inriktning radiologi
O0047H Nursing: Health
M0050H Radiation science and radiological modalities
O0055H Fundamental principles in nursing

Selection

The selection is based on 1-165 credits.

Examiner

Niklas Lehto

Course Aim

The general aim of the course is for the student to deepen his/her physical and technical knowledge of the image and function diagnostics modalities and their usage. On completion of the course, the student is expected to be able to:

- describe different types of diagnostic modalities in image and functional medicine and their main areas of use
- compare the main areas of use of various types of imaging modalities
- describe and discuss the function of different diagnostic modalities, technology and imaging capability
- compare and evaluate the diagnostic value of different modalities in relation to an issue
- analyse and describe risks and safety aspects around different diagnostic modalities
- reflect on how the design of the modality is adapted to patients and staff

Furthermore, the course aims for the student to develop the ability to interact with others and, orally and in writing, describe and discuss different studies. On completion of the course, the student should be able to:

- work in a team with others to plan, carry out and present an assignment
- work in a team to give feedback on the work of others orally and in writing

Contents

In the course, the technology behind different diagnostic modalities is treated. Specifically, the function and the fundamental design will be studied. The course focuses primarily on the most common the modalities in a radiology department such as:

- X-ray equipment for conventional examinations
- Mammography
- Computed tomography
- Ultrasound apparatus for diagnostics
- Magnetic resonance imaging (MRI)
- Nuclear medicine

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
During the course, the students work in groups to develop their knowledge of the image and function diagnostics modalities and their usage. Each group is given a pair of illness/injury perspectives that they use during the studies of the various diagnostic modalities' functions, technology and imaging capabilities. The work is presented both orally and in writing with peer feedback that is used both to broaden and deepen the course participants' knowledge. Participation in seminars and study visits is compulsory. Other tuition forms may be used. The teaching in the course Diagnostic Modalities is carried out at all times in close cooperation with specialists in radiology, with the aim to incorporate a clinical thinking and create the conditions for further studies in the area of image and functional medicine. This course constitutes part of the main field of study radiography in the radiography nursing programme.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
The course is examined through a written assignments and a written exam. A pass grade for the entire course furthermore requires attendance and active participation in seminars. Alternative examination forms may be used.

Remarks

This is a first-cycle course. Study supervision is in the course room in Canvas.

Overlap

The course M0051H is equal to M0089H

Literature. Valid from Autumn 2015 Sp 1

*Aspelin, P. & Pettersson, H. (eds.) (2008). Radiologi. (1st. ed.) Lund: Studentlitteratur.
*Berglund, E. & Jönsson, B. (2007). Medicinsk fysik. (1st. ed.) Lund: Studentlitteratur.
*Bontrager, K.L. & Lampignano, J.P. (2010). Bontrager's handbook of radiographic positioning and techniques. (7. ed.) St. Louis, Mo.: Mosby/Elsevier.
*Ehrlich, R.A. & Coakes, D.M. (2013). Patient care in radiography: with an introduction to medical imaging. (8. ed.) St. Louis, Mo.: Elsevier Mosby
*Hietala,S-O. &Åhlström Riklund, K.(eds.)(2013). Nuklearmedicin. (2nd.ed.) Lund: Studentlitteratur.

Description of competence and professional ethics for radiographers:
http://swedrad.webbsajt.nu/

Svensk förening för medicinsk teknik och fysik (2006). Jacobsons Medicin och teknik. (5th., [rev. and ext.] ed.) Lund: Studentlitteratur.

*Literature that has been used in earlier courses

Course offered by

Department of Health Sciences

Items/credits

Number	Type	Credits	Grade
0006	Written individual exam	3	U G VG
0007	Seminar	2	U G#
0008	Report	2.5	U G VG

Last revised

by 2016-02-15

Syllabus established

by Prefekt vid Institutionen för hälsovetenskap 2008-12-12