



**Karolinska
Institutet**

Course syllabus for

Radiographic methodology 3, 7.5 credits

Radiografisk metodik 3, 7.5 hp

This course syllabus is valid from autumn 2011.

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

Spring2008 , Autumn2009 , Autumn2011 , Spring2012 , Autumn2013 , Spring2017 , Spring2019 , Spring2023 , Spring2024

Course code	1RS015
Course name	Radiographic methodology 3
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Radiography
Level	G2 - First cycle 2
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Clinical Science, Intervention and Technology
Decided by	Programnämnden för Röntgensjuksköterskeprogrammet
Decision date	2007-12-11
Revised by	Programnämnd 6 (Biomedicinsk analytiker- och Röntgensjuksköterskeprogrammen)
Last revision	2011-04-18
Course syllabus valid from	Autumn 2011

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: account for which measures and which equipment that should be used because the patient and personnel radiation protection should function satisfactory and in accordance with the regulations of the Swedish radiation safety authority and the ALARA-principle on a department of radiology and a nuclear medical section Reason about considerations that may arise such as the examination of women of fertile age, child examinations, supplementary images etc account for various types of personal dosimeters and describe the basic principles of gas-filled detectors, scintillation detectors and semiconductor detectors describe the interaction of radiation with tissue/DNA and discuss the factors that govern the grade of injury. explain

the concepts of absorbed dose, efficient dose and equivalent dose from radiation types different effects on biological tissue and the radiation sensitivity of different cells use the most common tools within digital image processing

Content

The course gives advanced knowledge of the biological injuries and risks that can arise in using ionising radiation. Knowledge is also provided about different ways of detecting radiation and the radiation doses that may occur in using medical equipment for ionising radiation. In order to understand adequate radiation protection measures in their professional function, advanced knowledge about the laws and regulations that control the subject area is provided both to patients and staff. The part also provides knowledge about radiation and its use in society and environment, and risks associated with this. A focusing is also made on image processing and which methods that are to raise the diagnostic value of a X-ray image. It's made through practical exercises.

Teaching methods

The course is mainly based on lectures and seminars. Practical exercises/laboratory sessions are made within digital image processing. These are compulsory.

Examination

For a Pass grade in the course so that is required passed participation in compulsory parts such as laboratory sessions and passed independent written examination. In consultation with the examiner of the course, the student may get a complementary assignment in case of absence from a compulsory part. The student is entitled to a total of six test occasions to get passed. In Connections to the course three occasions will be given One within the course, two occasions at future re-examinations. In some cases, it is required that the student submits an exemption application before he/she has the results of his/her latest completed examination. Three more opportunities are provided according to the same set-up when the course is given next time.

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

Berglund, Eva; Jönsson, Bo-Anders

Medicinsk fysik

1. uppl. : Lund : Studentlitteratur, 2007 - 288 s.

ISBN:978-91-44-03796-7 LIBRIS-ID:10517253

URL: <http://www.studentlitteratur.se/omslagsbild/artnr/31919-01/height/320/width/320/bild.jpg>

[Library search](#)

Fosbinder, Robert.; Orth, Denise.

Essentials of radiologic science

Philadelphia : Wolters Kluwer Health/Lippincott Williams & Wilkins, c2010.

ISBN:978-0-7817-7554-0 LIBRIS-ID:12148840

[Library search](#)

Isaksson, Mats

Grundläggande strålningsfysik

Lund, Annika

Lund : Studentlitteratur, 2002 - 310 s.

ISBN:91-44-01528-3 LIBRIS-ID:8427844

[Library search](#)