Course syllabus for

Nuclearmedicine, 30 credits

Nuklearmedicin, 30 hp
This course syllabus is valid from autumn 2011.
Please note that the course syllabus is available in the following versions:
Autumn2010 , Autumn2011

Course code	2QA147
Course name	Nuclearmedicine
Credits	30 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Radiography
Level	Second cycle, has only first-cycle course/s as entry requirements
Grading scale	Fail (U) or pass (G)
Department	Department of Clinical Science, Intervention and Technology
Decided by	Styrelsen för utbildning
Decision date	2010-02-19
Revised by	Styrelsen för utbildning
Last revision	2011-05-31
Course syllabus valid from	Autumn 2011

Specific entry requirements

At least 120 credits including a Degree of Bachelor of Science in Diagnostic Radiology Nursing. Swedish and English language skills equivalent to Swedish B and English A at Swedish (with at least the Pass grade) upper secondary school are also required.

Objectives

On completion of the course, the student should be able to: Part 1: describe the technical structure and physical background for the Gamma- and PET camera describe the production and inception of the radiopharmaceuticals apply radiation protection regulations in connection with nuclear medical studies calculate dose, complete and inject radiopharmaceuticals based on the referral present an evaluation of a common nuclear medical study Part 2: apply deeper anatomic knowledge within nuclear medicine examination apply deeper physiological knowledge within nuclear medicine examination explain underlying occasions and mechanisms of diseases, aetiology explain how the function of the body and the organs is influenced by disease, pathophysiology relate the connections between the disease and used examination methodology with regard to ethical issue Part 3: describe various types of databases, compare structures for these and identify relevant search strategies describe various types of studies and also be able to explain the differences between a qualitative and a quantitative study analyse and

summarize results of both descriptive and statistical material apply literature study methodology and based on a given issue review and summarize generalise the results of the literature survey within prevailing knowledge situation and apply this for own professional development

Content

The course contains three parts.

Technology and physical principles, 10.5 hp The course deals with the physical and technical principles of the nuclear medical equipment. The course also gives an advanced study in the fields radiation physics and radiation protection within nuclear medicine. Further, the production and inception of the radiopharmaceuticals will be discussed. The student will train to complete, calculate dose and inject radiopharmaceuticals. Field studies at the gamma camera will imply that the student is given insight to plan, carry out and present commonly occurring studies such as ortopedic and kidney scintiography. This also implies that the student during the course should create an understanding regarding nuclear medical reconstruction and diagnostic imaging. **Pathology, anatomy, physiology and methodology, 12 hp** Parts two introduces with a deeper understanding anatomy and physiological processes. The emphasis lies at the anatomy that is important for an understanding of the imaging methods and the physiology that gives deeper understanding of the modern function diagnostic methods. The part also gives an advanced study in the genesis mechanism, symptom, epidemiology and treatment principles of common diseases. Different diseases will be presented under lectures, seminars and demonstrations. The main emphasis will be against diseases that are diagnosed within diagnostic imaging sections for example orthopaedic diseases gastrointestinal diseases, lung diseases, kidney- and urinary diseases, cardiovascular diseases, neurological/neurosurgical diseases and cancer. To obtain deeper knowledge about the methodology of nuclear medicine, field studies are carried out. **Literature review, 7.5 hp** During the course is presented various types of databases and the content in these. Further, the student trains to find search strategies to discover the data that are the aim of the search. The course is completed with an overview and the student trains to summarize results of review reports.

Teaching methods

The course includes lectures, laboratory sessions and demonstrations and independent written examination tasks. The course also contains field studies (in part 1 and 2) that be planned in consultation with responsible teacher. Laboratory sessions, demonstrations and field studies are compulsory parts. In consultation with the examiner of the course, the student can receive complementary assignment in case of absence from compulsory parts.

Examination

Part 1 is examined through independent written examination. Part 2 is examined through independent written examination. Part 3 is examined through written compilation and oral presentation. For a Pass grade in the course is required participation in laboratory sessions, field studies and individual assignment and passed independent written examination. A student who has failed in the regular examination, is entitled to participate in five more examinations. If the student has failed six examinations/tests, no more examination is offered. The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination for which the student registered but not participated in, will not be regarded as an examination.

Transitional provisions

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

Other directives

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

Literature and other teaching aids

Cherry, Simon R.; Sorenson, James A.; Phelps, Michael E.

Physics in nuclear medicine

3. ed. : Philadelphia, PA : Saunders, cop. 2003 - xiii, 523 s.
ISBN:0-7216-8341-X LIBRIS-ID:9059414
Library search

Forsberg, Christina; Wengström, Yvonne

Att göra systematiska litteraturstudier : värdering, analys och presentation av omvårdnadsforskning

2., [uppdaterade] utg. : Stockholm : Natur & Kultur, 2008 - 215 s.
ISBN:978-91-27-10016-9 (inb.)
Library search

Seeley's essentials of anatomy and physiology Essentials of anatomy and physiology
VanPutte, Cinnamon L.; Regan, Jennifer L.; Russo, Andrew F.; Seeley, Rod R.

7th ed. : Dubuque : McGraw-Hill, c2010 - xxv, 586, [74] p.
ISBN:978-0-07-352563-1 (hard copy : alk. paper) LIBRIS-ID:11817465
URL: Länk
Library search

Underwood, J. C. E.; Cross, Simon S.

General and systematic pathology

5th ed. : Edinburgh : Churchill Livingstone/Elsevier, 2009. - xi, 857 p.
ISBN:978-0-443-06888-1 (pbk.) LIBRIS-ID:11740993
Library search