Faculty of Science

MSFT01, Medical Radiation Physics: Master's Degree Project in Medical Radiation Physics, 30 credits

Medicinsk strålningsfysik: Examensarbete för sjukhusfysikerexamen, 30 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-09-12 and was last revised on 2020-05-11. The revised syllabus applies from 2020-05-11, spring semester 2021.

General Information

The course is included in the main field of study Medical Radiation Physics at the faculty of natural sciences. The course is compulsory at the second cycle level (semester 10) on the Medical Physics programme and for a Degree of Master of Science in Medical Physics according to The Higher Education Ordinance 2006:1324 Degree of Master of Science in Medical Physics 300 credits.

Language of instruction: Swedish and English
The language of instruction is Swedish or English.

Main field of studies	*Depth of study relative to the degree requirements*
Medical Radiation Physics	A2E, Second cycle, contains degree project for Master of Arts/Master of Science (120 credits)

Learning outcomes

The aim of the course is that, upon completion of the course, the students shall have acquired the following knowledge and skills.

Knowledge and understanding

On completion of the course, the students shall be able to

- show knowledge in planning of a scientific project and ability to identify its need of additional knowledge
- present the scientific issue and the results in popular form.

Competence and skills

On completion of the course, the students shall be able to

- demonstrate advanced ability in an independent processing of a scientific problem in the subject area, integrating previous knowledge.
- account for, defend and discuss new facts and results in connection with the course, both orally and in writing, at a scientific level in English.

Judgement and approach

On completion of the course, the students shall be able to

- demonstrate an understanding of the professional role of medical physicists by, as far as reasonably possible, interacting with other professional categories during the project.

Course content

In consultation with the course coordinator, the supervisor and the director of studies, the student is assigned an individual cohesive project corresponding to 20 weeks of full-time studies including oral presentation. The project is normally related to ongoing research and development in the departments of medical radiation physics in Lund or Malmö, radiation physics at SUS, or in companies with close connection to the field. International degree projects may also occur, primarily in cooperation with different hospitals in Denmark. Qualified supervision is given during the course.

The project is reported in English, partly as an oral public presentation, partly in the form of a written scientific report with a popular summary in Swedish. Apart from the project, the course may contain compulsory course components of limited extent.

Course design

The teaching is mainly constituted by regular supervision of the student, who carries out a cohesive project in the subject area. The course may also contain lectures and seminars that can be compulsory. This can for instance include participation in a midterm review, where the student present the project at a popular level directed to medical physics students on the first years (year 1 and 2), or participating in the respective research team's internal group meetings. The degree project normally requires specialised studies (additional need of knowledge) and a literature survey of earlier research in the area. Shortly after start of the course, the student should, in consultation with the supervisor, prepare a research plan that contains a definition of the project, a description of the problem analysis, and a time plan so that the degree project can be completed without delay.

Assessment

Examination is based on an oral presentation in English at an open seminar and a scientific report that the student writes in English. This is examined by an external reviewer appointed by the course coordinator, normally a university lecturer or medical physicists in the area, according to peer-review practice but at a level corresponding to the current level in the education. The reviewer should be well versed in the subject area for the degree project and be docent or hold equivalent skills.

The report of the degree project is public and may not be classified in any part. The department of medical radiation physics archives the report after approval and publishes it in electronic format at Lund university's portal for exam projects.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
The grades in the course are passed with distinction, passed and failed. The final grade of the degree project is decided together by the course coordinator and the director of studies. The grade is decided based on the external reviewer's assessment of the scientific report, the oral presentation, and the supervisor's information about how the work has progressed and how the student's independence, initiative etc has been. The information is mainly based on assessment forms filled in by the reviewer and the supervisor, ranking different knowledge and skill outcomes on a scale from 1-5. All gradings are combined to a level that corresponds to 60% for passed and 80% to pass with distinction. If in doubt, the reviewer and/or the supervisor are consulted again for supplementary information.

Grading criteria for pass with distinction follow the guidelines of the faculty of natural sciences. *The student should have demonstrated good ability to manage a research assignment independently. This includes that the student has shown creative skills with respect to problem formulation, problem-solving and conclusion, and ability to put the results in a wider topic-specific context, e.g. the scientific problem area or relevant applications. The written and oral presentations of the degree project should be of high quality.*

A pass grade for the entire course requires participation in all compulsory parts. Moreover, rules and recommendations from the faculty of natural sciences are applied.

Entry requirements

For admission to the course the following is required:

Normally, the project work is made as the final course for a Degree of Master of Science in Medical Physics 300 credits. Admission to the course requires passed courses according to the programme syllabus of the Medical Physics Programme (30/05/2007 dnrs NG 211-352/2006).

Subcourses in MSFT01, Medical Radiation Physics: Master's Degree Project in Medical Radiation Physics

Applies from H07

0701 Master of Science Thesis, 30,0 hp
Grading scale: Fail, Pass, Pass with distinction