



General syllabus for doctoral studies in medical science

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Scope: 240 credits

Degree: Degree of Doctor

Level: Third cycle

Established: Syllabus established by the Faculty Board 17 December 2015

Enters into force: 17 December 2015

Responsible body: Faculty of Medicine

1. Purpose

Third-cycle education at the Faculty of Medicine, Umeå University, aims to increase knowledge and contribute to the development of society in the field of medical science. After receiving the Degree of Doctor, further work is expected as a researcher at a research institute or in industry, as a combined researcher and teacher in higher education, as a research-competent manager in health care or industry, as a consultant, etc. These different types of professional activity have different requirements. Third-cycle education at the Faculty of Medicine shall therefore provide a broad base and prepare students for future research and work beyond the individual doctoral project.

2. Study programme objectives

Third-cycle education at the Faculty of Medicine at Umeå University shall offer doctoral students the opportunity to develop both high general competence in medical science and scientific methodology as well as scientific excellence in the area of research expertise covered by the thesis project.

2.1 Degree of Doctor in Medical Science

Qualitative targets

Knowledge and understanding

For the Degree of Doctor the third-cycle student shall

- demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field, and
- demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular.



Competence and skills

For the Degree of Doctor the third-cycle student shall

- demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically
- demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work
- demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research
- demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general
- demonstrate the ability to identify the need for further knowledge, and
- demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity.

Judgement and approach

For the Degree of Doctor the third-cycle student shall

- demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and
- demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

Local objectives

Knowledge and understanding

For the Degree of Doctor the third-cycle student shall

- demonstrate a broad knowledge of the theoretical context of science in general and of medical science in particular.

Competence and skills

For the Degree of Doctor the third-cycle student shall

- demonstrate a good ability to relate their own research to other ongoing medical research and, by extension, to clinical application and other societal benefits.

Judgement and approach

For the Degree of Doctor the third-cycle student shall

- demonstrate a good ability to relate to the complexity of medical research, its ethical aspects and its impact on individuals and society.

3. Entry requirements and prerequisites

3.1. General entry requirements

In order to be admitted to third-cycle studies, the applicant must

- 1) meet the general and specific entry requirements that the higher education institution may have laid down, and
- 2) be deemed to have the other abilities necessary to complete the studies. (Chapter 7 Section 35 Higher Education Ordinance).

Deemed to have satisfied the general entry requirements are those who:

- 1) have completed a second-cycle degree,
- 2) completed course requirements of at least 240 credits, of which at least 60 credits at second-cycle level, or
- 3) who have acquired substantially equivalent knowledge in some other way, in Sweden or abroad.

The higher education institution may permit an exemption from the general entry requirements for an individual applicant, if there are special reasons. (Chapter 7 Section 39 Higher Education Ordinance)

3.2. Specific entry requirements

In order to meet the entry requirements for third-cycle studies, it is required that the applicant have both the following:

1. necessary knowledge from one or more higher education courses and study programmes or corresponding courses and study programmes assessed as relevant to the area of third-cycle studies.
2. necessary language skills in English, both written and oral.
Assessment of these skills is done by having the prospective doctoral student present his/her research plan in English to an assessment group appointed by the head of department.

Specific entry requirements for each subject specialisation are specified in a separate syllabus. These syllabi are available at the departments and at the office of the Faculty of Medicine.

4. Selection

Selection from among candidates who meet the entry requirements will be based on the following criteria:

- Ability to benefit from third-cycle studies

The following assessment criteria shall be applied when assessing the ability to benefit from the studies:

- Communication skills, written and oral
- Critical thinking skills
- Analytical skills
- Performance within given timeframes

However, the fact alone that an applicant is considered able to transfer credits from prior courses and study programmes or for professional or vocational experience may not give the applicant priority over other applicants. (Chapter 7 Section 41 Higher Education Ordinance)

Doctoral positions at the faculty shall be advertised. The advertisement must be on Umeå University's website for at least 3 weeks. Selection of applicants for third-cycle studies is made by the prospective principal supervisor in consultation with the department's doctoral education team. An assessment of the applicant's ability to carry out third-cycle studies in the relevant subject area is made upon an interview, which is the responsibility of the prospective principal supervisor. Thereafter, a compulsory admissions seminar is held in English. The final selection is made by the head of department.

Decisions regarding admission to third-cycle studies leading to a Degree of Doctor are made by the faculty's director of studies.

5. Structure and content of the study programme

5.1. Structure

Third-cycle studies are completed with a Degree of Doctor or a Degree of Licentiate. The studies must comprise 240 credits for the Degree of Doctor.

Third-cycle studies completed with a Degree of Doctor comprise an actual period of study of four years and consist of the writing of a doctoral thesis and third-cycle courses totalling 240 credits.

An individual study plan must be drawn up for each doctoral student, specifying funding, supervision, courses, thesis work, etc. Together with the supervisor and the examiner, the doctoral student develops individual intended learning outcomes that will help them to meet the national qualitative targets. The individual study plan must be followed up at least once a year (see item 6).

5.2. Contents

5.2.1 Courses

Third-cycle studies also include third-cycle courses. The Faculty's course requirement of 30 credits is achieved through compulsory third-cycle courses (7 credits) and compulsory presentation at national/international conference (1.5 credits), other postgraduate courses and other credit-bearing components such as active participation in departmental seminars and journal clubs, presentation at national/international conferences, and research visits as well as participation in higher education teaching-and-learning training. At least 15 of the 30 credits are to be courses.

The compulsory portion consists of an introduction to doctoral studies (web course) worth 1 credit, a course in the theory of science worth 3 credits, a course in ethics worth 3 credits, and a presentation at a national/international conference worth 1.5 credits.

A course in laboratory animal science is compulsory if laboratory animals are included in any component. A course in Good Clinical Practice (GCP) or similar is compulsory for all doctoral students conducting clinical research with human subjects. Requests for credit transfer of the compulsory courses must be made prior to admission to third-cycle studies and must be submitted directly to the respective course coordinator; certificates from previous studies and their syllabi must be attached.

At the end of the studies, the doctoral student must have knowledge of statistics relevant to the subject area. The knowledge must have been acquired before or during the third-cycle studies.

Knowledge assessment for third-cycle courses: Examinations that are part of postgraduate education must be assessed with a grade of pass or fail. The grade is determined by a teacher (examiner) appointed by the University.

5.2.2 Doctoral thesis

The doctoral thesis must be either a compilation thesis or a monograph thesis.

A compilation thesis must contain scientific papers and introduction, methodological description, summary discussion, concluding discussion/reflection and the usefulness of the thesis in the research community and society in general. The doctoral student must write the introductory chapter independently. In the case of a compilation thesis, two accepted papers are required to defend the thesis. Of these, the doctoral student must be the first author of at least 1 publication. If the above requirements are not met, the doctoral student may request a preliminary review. Normally, a compilation thesis contains a total of 3-5 papers. A monograph thesis is a coherent, unified work of scholarship.

Preliminary review is carried out by two reviewers appointed by an editor designated by FUT and shall be done if:

* the thesis is a monograph thesis

* only one of the thesis's papers is accepted or published in an international peer-reviewed journal

* the doctoral student is not the first author of any of the publications included in the thesis.

The doctoral thesis must be defended orally at a public defence. It is assessed with a grade of pass or fail. Grading must take into account both the content and the public defence of the doctoral thesis.

6. Follow-up

Follow-up of doctoral students

The Faculty of Medicine has overall responsibility for third-cycle education, while the department where the doctoral student is admitted is responsible for the individual doctoral student's education. The responsibility for the doctoral student's progress lies with both the faculty and the department; the main supervisor has the main responsibility for the education itself. Information regarding the doctoral student's activity during the current semester must be recorded twice per year in LADOK by the department concerned.

The Faculty's Director of Studies is responsible for following up the progress of doctoral students on behalf of the Faculty. This is done through an annual follow-up of the individual study plan. Annual follow-up must be carried out regardless of whether the doctoral student is engaged in full-time or part-time doctoral studies. This means that a doctoral student may carry out more than 4 annual follow-ups during his/her doctoral studies.

The mid-way review is an important part of the follow-up of the doctoral students' progress. The mid-way review is compulsory, provided that the doctoral student does not choose to take a Degree of Licentiate. Unlike the licentiate seminar, the responsibility for the implementation of the mid-way review rests entirely with the department. A copy of the certificate confirming the seminar and the statement of the review team must be sent to the Faculty Office, which will review the material together with the Director of Studies.

The application for public defence is the doctoral student's final follow-up, which is reviewed by the Faculty's Director of Studies. The departments' doctoral studies groups are responsible for providing the Faculty Office with lists of the doctoral students who have been followed up during the current semester. The Director of Studies reviews these lists.

7. Summative assessment

Assessment of qualitative targets and local objectives is carried out as follows

Knowledge and understanding

- * Compulsory course in the theory of science and research methodology, assessed by the course coordinator
- * Literature course, assessed by the individual examiner
- * Introductory chapter and public thesis defence, examined by the grading committee

Skills and abilities

- * Seminar and journal club activities, assessed by the home department's doctoral education officer in consultation with the individual examiner and supervisor, individual examiner approves in connection with scoring for Ladok registration
- * Presentation of results at national/international conference (compulsory element), individual examiner approves in connection with scoring for Ladok registration
- * Higher education teaching-and-learning training (compulsory for teaching doctoral students), assessed by course coordinator
- * Teaching at first- and second-cycle level, assessed by the department's graduate education officer in consultation with the relevant course coordinator
- * Annual follow-up, conducted by supervisor, examiner and reference person
- * Mid-way review, assessed by review panel
- * Writing education and outreach texts and press release, assessed by supervisor and communicator
- * Thesis and public defence of doctoral thesis, examined by grading committee

Judgement and approach

- * Compulsory ethics course, laboratory animal course and course in GCP, assessed by the respective course coordinator
- * Seminar and journal club activities, assessed by the home department's doctoral education officer in consultation with the individual examiner and supervisor, individual examiner approves in connection with marking for Ladok registration
- * Thesis and public defence of doctoral thesis, examined by grading committee

The Degree of Doctor is awarded after the doctoral student has completed third-cycle studies of 240 credits, has received a passing grade in the examinations included in the studies, and has written and defended a doctoral thesis, approved by the grading committee, at a public defence.

A doctoral student who originally planned to take a Degree of Doctor may complete his/her studies with a Licentiate degree if the requirements for such a degree are fulfilled.



Degree certificates are issued upon application to the Student Services Centre/Degree Evaluation Office.

8. Other instructions

The current regulations regarding third-cycle studies are set out in:

- The Higher Education Ordinance (HF): Chapter 5 Employment of doctoral students, etc., Chapter 6 Courses and study programmes, and Chapter 7 Admission to courses and study programmes; Annex 2 System of Qualifications.
- Admission regulations for doctoral education at Umeå University (FS 1.1, 588- 15)
- Local degree qualifications at Umeå University (ref. no. 540-2958-11)
- Rules for doctoral education at Umeå University (ref. no. 500-953-13)
- Procedure for the withdrawal of resources from doctoral students at Umeå University (ref. no. 500-1981-13).

- Doctoral Studies at the Faculty of Medicine - Handbook