



GENERAL STUDY SYLLABUS FOR THIRD-CYCLE STUDIES IN PHARMACEUTICAL SCIENCE

Decided by: the Sahlgrenska academy board on May 6th 2015

Period of validity: Until further notice

Summary:

This study syllabus was adopted by the Board of Sahlgrenska Academy on 30 September 2010 and was subsequently revised by the Board on 6 May 2015. Third-cycle studies are regulated by the provisions for third-cycle studies contained in the Higher Education Act, the Higher Education Ordinance and the policies, rules and plans established locally at the University of Gothenburg and Sahlgrenska Academy.

Third-cycle studies in Pharmaceutical Science lead to the award of a Degree of Doctor or Degree of Licentiate.

General information about the studies

The purpose of third-cycle studies in Pharmaceutical Science is to train researchers for the needs of society, with high general competence and scientific cutting-edge expertise.

In addition to specialised knowledge within the area of pharmaceutical science and the subject area of the thesis, the studies will prepare the doctoral student for independent research or vocational activities, where high requirements are imposed for methodological skills and a deep insight into the subject together with the capacity for critical thinking, creativity and the search for knowledge. Furthermore the doctoral student will achieve good pedagogical skills and the ability to report research results verbally and in writing. The doctoral student will also develop skills in components of research work and the ability to collaborate and disseminate knowledge to doctoral (third cycle) students to such an extent that they can:

- identify and formulate scientific problems and also choose and apply relevant methods to solve such problems
- make assessments of research ethical aspects and demonstrate evidence of an ethical stance
- publish research results of high scientific quality
- communicate and develop contacts within the academic community and with society at large
- critically and constructively review the work of others within academic research and development
- opt for a career as a researcher and classroom teacher at a university/university college
- obtain specialist competence within the chosen subject area of Pharmaceutical Science.

Third-cycle studies in Pharmaceutical Science

Content

Third-cycle studies for a Degree of Doctor in Pharmaceutical Science correspond to studies of 240 higher education credits ('credits') in total. The studies comprise carrying out a scientific project. The project includes presenting research findings at scientific conferences and attending seminars at the student's department. In addition to this, the studies include successfully completing third-cycle courses (at least 30 credits). The doctoral student must also independently write a scientific compilation thesis or monograph corresponding to at least 120 credits.

Third-cycle studies for a Degree of Licentiate in Pharmaceutical Science correspond to studies of 120 credits in total. These studies comprise writing a scientific thesis together with third-cycle courses comprising at least 15 credits. The thesis may be a compilation thesis or monograph.

Third-cycle courses

Third-cycle studies for a Degree of Doctor in Pharmaceutical Science include compulsory third-cycle courses corresponding to 15 credits. Additional third-cycle courses, comprising at least 15 credits, are required for the Degree of Doctor. Third-cycle courses comprising approximately 45 credits in addition to the compulsory courses are required for a monograph thesis. The following courses may be included in the course requirement:

1. a compulsory third-cycle course (15 credits) comprising three parts
2. elective third-cycle courses (at least ten credits):
 - subject-specific depth of study courses
 - courses within basic research methods and methods relevant to the chosen subject area
 - a course in laboratory animal science (compulsory for those using laboratory animals in their thesis work)
 - pre-vocational courses
3. other credit-yielding study activities (no more than five credits)

Doctoral students, who wish to complete their third-cycle studies for the Degree of Licentiate at Sahlgrenska Academy, must have undergone the compulsory third-cycle course (eight credits) and further third-cycle courses comprising at least seven credits.

All courses included in the doctoral student's third-cycle studies must appear in the individual study syllabus. The individual study syllabus must be revised in the event of any changes. Successfully completed courses and credit-yielding activities are to be documented in Ladok.

Scientific thesis

A thesis in Pharmaceutical Science comprises a framework commentary and, normally, two to four articles. The doctoral project and findings are summarised in the framework commentary, including a detailed account of the project's background, the questions at issue and methods. In addition, findings and relevance are discussed in a wider context. The following applies to the articles:

- that they are to be of the scope and quality for the criteria set by the Academy's permanent examination board
- that the doctoral student is to be the primary author of at least one article
- that the articles are to be published in journals relevant to the subject/field
- that at least one article is to be published or accepted in a peer-reviewed journal; otherwise the thesis is counted as a monograph.

Scientific thesis

A licentiate thesis has the same structure as a doctoral thesis but is of a lesser scope.

Aim of the studies

Overall learning outcomes are shown in the Qualifications Ordinance (Higher Education Ordinance, Swedish Code of Statutes – SFS 1993:100, Appendix 2 – Degree Ordinance), see below.

Degree of Doctor

Knowledge and understanding

For the Degree of Doctor, the doctoral student shall:

- demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge within 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 doctoral student shall:

- demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, questions at issue and situations autonomously and critically,
- demonstrate the ability to identify and formulate problems with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within pre-determined timeframes and to review and evaluate this work,
- demonstrate through a thesis their ability to make a significant contribution to the formation of knowledge through their 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 at large,
- 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 other qualified professional contexts.

Judgment and approach

For the Degree of Doctor, the doctoral 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 science, its role in society and the responsibility of the individual for how it is used.

Scientific thesis (doctoral thesis)

For the Degree of Doctor, the doctoral student shall have been awarded a pass grade for a scientific thesis (doctoral thesis) of at least 120 credits.

Degree of Licentiate

Knowledge and understanding

For the Degree of Licentiate, the doctoral student shall:

- demonstrate knowledge and understanding in the field of research including current specialist knowledge within a limited area of this field as well as specialised knowledge of research methodology in general and the methods of the specific field of research in particular.

Competence and skills

For a Degree of Licentiate, the doctoral student shall:

- demonstrate the ability to identify and formulate problems with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake a limited piece of research and other qualified tasks within pre-determined timeframes in order to contribute to the formation of knowledge as well as to evaluate this work,
- demonstrate the ability in both national and international contexts to present and discuss research and research findings in speech and writing and in dialogue with the academic community and society at large, and
- demonstrate the ability required to independently participate in research and development work and to independently work in other qualified activities.

Judgment and approach

For the Degree of Licentiate, the doctoral student shall:

- demonstrate the ability to make assessments of ethical aspects of their own research,
- demonstrate insight into the possibilities and limitations of science, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for their own ongoing learning.

Scientific thesis (licentiate thesis)

For a Degree of Licentiate, the doctoral student shall have been awarded a pass grade for a scientific thesis of at least 60 credits.

Implementation

Third-cycle studies are conducted within the framework of a doctoral project and in accordance with an individual study syllabus. The individual study syllabus will indicate how the doctoral student's research work will be conducted, which courses are to be included and other commitments. Changes to the specialisation and implementation of the research work, third-cycle courses or other commitments are to be documented in the individual study syllabus.

The doctoral student's progress in respect of courses implemented/planned and their research work is to be followed up at least once a year. The principal supervisor is responsible for implementing this follow-up.

A half-time seminar (Part II of the compulsory third-cycle course) – where the scientific work is summarised and presented by the doctoral student – is compulsory and is to be announced publicly. The date of the half-time seminar will be no later than the date on which, according to the individual study syllabus, there remains a period of study corresponding to two years of full-time study before the award of the Degree of Doctor. The doctoral student must have taken Part I of the compulsory third-cycle course (eight credits) to be able to hold a half-time seminar.

The thesis' articles are reviewed by an examining committee in preparation for the public defence of the doctoral thesis. The examining committee may, for example, propose changes and additional information that affect the date of the public defence. The thesis is to be published by 'nailing' (including electronic publication of the thesis) no later than three academic semester weeks before the public defence.

An examining committee is appointed in preparation for the licentiate seminar that is to be afforded access to the licentiate thesis and component articles/manuscript no later than three weeks before the seminar.

Qualifications

A person meets the general entry requirements for third-cycle studies if he or she:

1. has been awarded a second-cycle qualification, or
2. has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second-cycle, or
3. has acquired substantially equivalent knowledge in some other way in Sweden or abroad.

A person meets the specific entry requirements for third-cycle studies if he or she:

- has successfully completed the English B/6 course or is considered to have acquired equivalent knowledge through previous studies (this assessment is made in accordance with the recommendations of the Swedish Council for Higher Education).

Selection

In selecting between applicants who meet the general and specific entry requirements, their ability to benefit from third-cycle studies shall be taken into account. The assessment shall attach particular importance to documented qualifications for:

- specific knowledge and skills within the subject area and related research fields
- experience of scientific theory and relevant research methodology
- scientific analysis and presentation verified through thesis, degree project, scientific journals or the like.

Degree

As a rule, a doctoral student is admitted with the objective of obtaining a Degree of Doctor. Students can only be admitted to third-cycle studies with the objective of obtaining a Degree of Licentiate if the applicant so wishes. An applicant, who has been admitted to third-cycle courses for the Degree of Doctor may complete their studies with a Degree of Licentiate.

The successful completion of the public defence of a doctoral thesis and a registered third-cycle course component, comprising at least 30 credits, are required for the Degree of Doctor.

The successful completion of a licentiate seminar and a registered third-cycle course component, comprising at least 15 credits, is required for the Degree of Licentiate.

A degree certificate is issued for third-cycle studies taken and successfully completed following a request from the doctoral student. The Degree of Doctor in Pharmaceutical Sciences is referred to as a PhD (Pharmacy). A Degree of Licentiate in Pharmaceutical Sciences is referred to as a Licentiate (Pharmacy).

Transitional provisions

Those who meet the general entry requirements for third-cycle studies before 1 July 2007 will also be considered to meet the general entry requirements for third-cycle courses after that, however, until no later than the end of June 2015. (Higher Education Ordinance, Transitional Provisions, 2006:1053, Section 11)