



General syllabus for the doctoral programme in programme in the subject of medical biosciences

Approved by the Faculty Board on 14 December 2012

Responsible department:

Department of Anatomy, Physiology and Biochemistry

The Faculty's doctoral programme is comprehensively regulated by the following documents. The numbers are used to indicate references to these documents in the text:

1. The Higher Education Ordinance (SFS 1993:100 et seqq.)
2. Admission regulations for third-cycle (doctoral) education (Journal no. SLU ua Fe.2012.4.4-3467)
3. Guidelines for third-cycle (doctoral) education (Journal no. SLU ua Fe.2012.4.4-3218)

The doctoral programme in medical biosciences is offered with a choice of specialisations in anatomy, physiology or biochemistry.

1. Purpose and objectives

The doctoral programme results in a licentiate degree or a doctoral degree. The licentiate degree may be credited towards a doctoral degree. The content and scope of the doctoral programme must be such that upon completion of the doctoral degree, the student will be able to perform independent research and will have fulfilled the objectives specified in the Higher Education Ordinance (1), Appendix 2. The objective of this doctoral programme is to acquaint the student with the general tools of science, as well as the research methods typical for the subject.

The specialisation *anatomy* comprises macroscopic, microscopic and functional anatomy in animals.

The specialisation *physiology* comprises the study of the physiological processes of the whole animal and of organ systems.

The specialisation *biochemistry* comprises the study of the biochemical processes that enable life and of the molecular mechanisms that cause disease in animals and humans.

2. Entry requirements

To be eligible for admission to the doctoral programme, the applicant must fulfil both the general entry requirements (Higher Education Ordinance, Chapter 7 Section 39) and the specific entry requirements (Higher Education Ordinance, Chapter 7 Section 40). The applicant's knowledge of the English language is documented through Eng B in the national upper secondary school programme in English or an approved, comparable language test (TOEFL, IELTS or Cambridge ESOL) in accordance with the requirements set out at:

www.universityadmissions.se (2).

The specific qualification for medical bioscience is that the student has knowledge which corresponds to at least 180 higher education credits in one of the following subjects: veterinary medicine, agriculture, natural sciences, biology or medicine. The student must have demonstrated the ability to work independently through an advanced study project corresponding to at least 15 higher education credits. Applicants with a different, comparable educational background may be eligible; this will be decided by the head of department on a case-by-case basis.

3. Selection and admission

The selection requirements that apply for admission to the doctoral programmes can be found in Chapter 7 of the Higher Education Ordinance (1) and in the SLU admission regulations (2).

4. Scope, content and planning

The scope, content and planning of the doctoral programme are regulated by the Higher Education Ordinance (1), Chapter 6, and by the SLU guidelines (3). It involves full-time studies corresponding to 240 higher education credits for a doctoral degree or at least 120 higher education credits for a licentiate degree.

The programme contains two main elements: research and coursework.

Research

The doctoral student is required to perform research during his/her education which is reported in a doctoral thesis, the content of which is described in SLU's guidelines (3). The thesis must be a compilation thesis, written in English.

A doctoral thesis must contain at least three and preferably no more than five composite papers, at least one of which must be accepted by or published in a peer-reviewed international scientific journal. The composite papers must be of such quality that they are eligible for publication in a peer-reviewed international scientific journal. The student must be the lead author of at least two of the papers, and should also be the lead author of the paper which has been accepted for publication/published.

A licentiate thesis must contain at least one and preferably no more than two composite papers. The composite papers must be of such quality that they are eligible for publication in a peer-reviewed international scientific journal. The student must be the lead author of at least one of the composite papers.

Coursework

For the doctoral degree, coursework must correspond to 30–70 higher education credits and must include both the applicable basic courses and individually selected subject courses. The courses should be included early on in the programme and be adapted in scope and specialisation to the student's scientific field. For the licentiate degree, credit totals are halved.

Basic courses will provide fundamental knowledge and insights on research ethics and methodology, research information, pedagogy and oral presentation. In addition, courses on basic statistics, laboratory animal science, as well as scientific writing and publication should be included.

Subject courses are intended to give depth and breadth to the student's knowledge of his/her subject, specialisation and research area. These courses will provide an introduction to the research area and good knowledge of the subject. Subject courses are chosen following a discussion between the student and supervisor, allowing leeway for the student to select courses based on his/her personal interests. Subject courses may well be taken at a foreign university

Furthermore, the student is required to follow relevant international research through independent literature study and participate in seminar series. Over the course of the first year of the programme, the student must write an introductory essay, written in accordance with the SLU guidelines for doctoral education (3). In addition, the student is expected to attach himself/herself to the relevant graduate school, as well as being an active participant in seminars and conferences that are connected to his/her research and education.

5. Supervision

Matters concerning supervision are regulated by the Higher Education Ordinance (1), Chapter 6, the SLU admission regulations (2) and guidelines (3) for doctoral education. The supervisory group must be composed of supervisors who have sufficient skills and knowledge in the subject (and the possible specialisation) to ensure that the programme is of good quality.

6. Follow-up

The programme must be followed up at least once per year. The yearly follow-up is conducted by the student and his/her supervisors. The follow-up is registered in LADOK, and the individual study plan is entered in the journal and archived by the department.

The introductory essay, written by the student in his/her first year, is approved by the principal supervisor and this is documented in the individual study plan.

In connection with the half-time follow-up, the student must deliver a half-time seminar. The half-time follow-up is documented in a half-time report that is sent to the Faculty, together with the current study plan. In the half-time report, the student and the supervisors summarise and comment on substantial changes that have been made to the original study plan, as well as the commitments and responsibilities of the student and the supervisors. In addition, the department submits an assessment of whether the student has completed 50 per cent of the programme and of whether the conditions will allow the programme to be completed according to the current plan.

7. Examination

Matters concerning examination, public defence of the thesis and the licentiate seminar are regulated by the Higher Education Ordinance (1), Chapter 6, and by the SLU guidelines (3) for doctoral education.

8. Title of qualification

The title of the qualification is determined by the degree that the student has obtained to fulfil the entry requirements, for example, Doctor of Philosophy in Veterinary Medicine for veterinarians, Doctor of Philosophy in Agriculture for agronomists and Doctor of Philosophy in Biology for a biologist.