

# **GENERAL STUDY PLAN FOR RESEARCH EDUCATION (THIRD LEVEL HIGHER EDUCATION) IN ANIMAL SCIENCE WITH SPECIALISATION IN NUTRITION AND MANAGEMENT at the Faculty of Natural Resources and Agricultural Sciences at SLU**

## **1. Objective and purpose of the programme**

The objective of the programme is to familiarise research students with general scientific tools, as well as the research methods that are typical of animal science with specialisation in nutrition and management. Animal science is the study of species used in the service of humanity, including wildlife that provides a greater understanding of domesticated species. The goal of research and education in animal science is to raise the level of knowledge needed to ensure sustainable use of domesticated animals. The specialisation of nutrition and management focuses on exploring the usefulness of forage during various life and production phases, as well as the correlation between the husbandry of animals and their production, performance, reproduction, health, product quality and environmental impact. The purpose is to meet the qualifications for research education specified by Chapter 6, Sections 4-5 of the Higher Education Ordinance (HEO).

Students are also to acquire knowledge about, and an attitude to, ethical issues associated with research in the subject. In addition, students are to obtain education in, and experience of, pedagogy and research information.

Research education can lead to both a degree of Licentiate and a degree of Doctor. The degree of Licentiate can be credited toward continuing studies for a degree of Doctor.

## **2. Eligibility**

People are eligible for admission to research education who have taken a second level (Master level) qualification and meet the requirements for basic eligibility (Chapter 7, Section 39 of HEO (2006:1053)), i.e., at least 240 higher education credits, including 60 credits at the second level (Master level) or acquired essentially the same knowledge in some other way, either in Sweden or abroad. The Faculty Board may exempt an individual applicant from the requirement for basic eligibility if special grounds exist. In such cases, SLU demands that the applicant has taken a first level (Bachelor level) qualification and presents a written account of an independent project the scope of which is equivalent to 15 higher education credits and the content of which corresponds to the knowledge and skills required for a degree project toward a degree of Master, or a relevant independent project of similar difficulty and extent. The project should be written in English.

Those who are admitted must also meet the special eligibility requirements adopted for the subject (Chapter 7, Section 40 of HEO (2006:1053)).

Special eligibility in animal science normally requires knowledge equivalent to at least 120 higher education credits in biological subjects, at least 30 of which focus on animal science. The student must have shown the ability to work independently, such as by completing an in-depth project corresponding to at least 12 higher education credits. Following a proposal by the head of

the department, the Faculty Board makes an individual assessment concerning whether the student is eligible on the basis of another comparable programme.

### **3. Selection and admission**

Applicants are to be selected on the basis of their ability to benefit from the research education programme (Chapter 7, Section 41 of HEO (2006:1053)). The head of the department to which the applicant wishes to be admitted as a research student proposes admission to the Faculty Board. The board makes admissions decisions.

### **4. Scope, content and organisation**

#### ***4.1 Scope***

The programme for a degree of Doctor consists of four years of full-time studies (240 higher education credits). Two years of full-time studies (120 higher education credits) are required for a degree of Licentiate.

#### ***4.2 Content***

The programme contains two primary components: a scientific project and course-related studies.

##### *Scientific project*

During the period of education, the research student is to conduct an independent research project. The thesis should be in compilation form and be written in English. A licentiate thesis must contain 1-2 papers of sufficient quality as to be publishable in an international scientific journal that uses a peer review system. A doctoral thesis must contain 3-5 papers, at least one of which has been accepted or published by an international scientific journal that uses a peer review system. The research student shall be the primary author of at least one paper but should be the primary author of two papers.

If the papers of the thesis have multiple authors, the contribution of the research student must be clearly specified in the thesis.

##### *Coursework*

The coursework shall consist of 45-120 higher education credits for a degree of Doctor and 25-60 higher education credits for a degree of Licentiate. Coursework shall include suitable basic courses (approximately 1/3 of the course credits), as well as individually selected courses on special subjects (approximately 2/3 of the course credits).

Basic courses are general courses for all research students, regardless of subject or specialisation. It is recommended that the basic courses cover most of the following subjects:

- Laboratory animal science
- Theory of science, research methodology and information search
- Biometry
- Teaching methods and oral presentation
- Scientific writing and publication

The purpose of courses on special subjects is to provide the research student with greater depth and breadth in the selected subject, specialisation and area of research. The courses shall offer an introduction to the area of research, as well as solid knowledge of the subject. Such courses are selected following discussion between the research student and supervisor, as well as based on the student's personal interests to the extent possible.

The special course (Forage Evaluation in Ruminant Nutrition) that the department offers for research students should be included. In addition, at least one course should cover one of the following topics: Nutrition – Forage, Nutrition – Metabolism, Analytical Methods, Animal Husbandry and Breeding.

By means of independent literature studies, the student should follow relevant international research. In addition, the student is expected to actively participate in seminars and conferences that are related to the research and research education programme.

#### **4.3 Organisation**

The individual study plan (Chapter 6, Section 36 of HEO (2006:1053)) for research education is drawn up in consultation between the research student and supervisor/supervisor group during the application process for admission. The faculty's guidelines for research education specify what should appear in the individual study plan. Evaluation and any modifications of the plan are to be on an annual basis. The research student and supervisor shall attest in writing that they have read the plan and any modifications to it. The study plan signed by the research student and supervisor is subsequently ratified in writing by the head of the department.

Evaluations shall be performed when 50% and 75% of the net period of studies has been used (see Appendix 1).

### **5. Examination**

A doctoral thesis must be defended orally in public and assessed by a grading committee consisting of three or five members appointed by the Faculty Board. A licentiate thesis is to be defended orally at a public seminar and approved by a grading committee appointed by the Faculty Board. The grading committee consists of three members.

The faculty's guidelines for research education specify the provisions that apply to the examination of doctoral theses and licentiate theses at the Faculty of Natural Resources and Agricultural Sciences.

The degrees of Doctor and Licentiate require that the student receives a grade of Pass on examinations and the thesis.

### **6. Supervision**

Anyone admitted as a research student is entitled to supervision throughout the period of study, i.e., full-time studies toward a degree of Doctor for four years. Each student is assigned at least two supervisors, one of whom is the principal supervisor (Chapter 6, Section 31 of HEO (2006:1053)). Without a decision having been made in each individual case, the

principal supervisor must have documented qualifications as a docent and hold a position at SLU. At least one of the assistant supervisors must hold a position at SLU.

The supervisor group consists of the principal supervisor and one or more assistant supervisors. The supervisors assist the research student on both practical and theoretical issues, while continually monitoring the progress of studies in cooperation with the student. The supervisors are also to help the student select literature and courses. The student must keep the supervisors up to date about the progress of studies so that corrections can be made when needed.

## **7. Additional information**

Additional information about research education appears in Swedish Code of Statutes 2006:1053, including information about study grants in 1995:938 with amendments 1998:81 (reprint), as well as 1998:161 and 2006:1053. Information about research education at SLU appears in Guidelines for research education (third level programmes) in the Faculty of Natural Resources and Agricultural Sciences (Reg. no. SLU ua 40-1244/08).

### **Evaluations when 50% and 75% of the net period of studies has been used**

#### ***Half-time revision when 50% of the net period of studies has been used***

Research students admitted to education for reaching the degree of Doctor shall make a half-time revision when 50% of the net period of studies has been used. The revision can be made later if there are valid reasons for the delay.

The half-time revision consists of an open seminar in the common seminar series of the department, and of an evaluation meeting. The principal supervisor is responsible for announcing the seminar and engaging the evaluation committee, consulting the director of research education at the department. The seminar should take no longer than one hour. It should include a summary of research performed so far and opportunities for discussion and questions.

A proposal for a revised individual study plan shall be present at the half-time revision, and a final revised version shall be established after the evaluation meeting. The half-time revision shall be performed in collaboration by the research student, the head of the department, the supervisor group and the person responsible for the research education at the department. The head of the department may delegate the responsibility to some other person. Other principal supervisors at the department are welcome to attend the revision. Minutes shall be taken at the half-time revision, where the responsible persons make an assessment to whether the studies are proceeding in accordance with the individual study plan, and as to the feasibility of further plans for study to the doctoral examination. The head of the department and the principal supervisor approve the half-time revision by signing the minutes. The minutes shall be filed at the department. A template for the revision is supplied by the faculty.

#### ***Evaluation when 75% of the net period of studies has been used***

The evaluation at 75% follows the same procedures with a seminar and an evaluation meeting as for the 50% evaluation. The difference is that the research student is expected to sum up and discuss his/her results more deeply during the seminar than at the 50% evaluation. The research student shall present a detailed plan for the last year of studies at the evaluation meeting, focusing at remaining experiments, writing of papers, publication of papers, and the actual thesis.