



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

LTJ Faculty

## ***General regulations regarding PhD education in the subject TECHNOLOGY***

### **Purpose and objectives**

The aim of the education is to acquaint the PhD student with the general scientific tools and research methods that are typical of the subject area Technology. PhD students at the LTJ Faculty are trained in research, development work and problem-solving within higher education, industry and the public sector. They will also be prepared for tasks relating to teaching and administration within these sectors. For more information, see the Higher Education Ordinance, Annex 2 Qualifications ordinance, Section 4 Qualification descriptors.

A doctorate is obtained in the subject Technology within one of the following specialist areas: Work Science, Building Technology, Animal Husbandry.

PhD education within the subject Technology can lead to a doctorate or a licentiate degree. The licentiate degree can be credited towards a doctoral degree.

### **Entry requirements**

To be admitted to a PhD education in the subject Technology, the student must fulfil the general entry requirements according to the Swedish Higher Education Ordinance Chapter 7 Section 39, as well as the specific entry requirements according to the Higher Education Ordinance Chapter 7 Section 40.

The general entry requirements include a first degree at Master's level or a full course portfolio of 240 higher education credits, of which at least 60 credits must be at Master's level, or equivalent qualifications obtained in some other way in Sweden or abroad. If the applicant seeks an exception from the general entry requirements, this must be done in writing and must be justified by the applicant and the prospective principal supervisor. The Faculty Board decides if an exception can be granted.

The special entry requirements for the subject Technology are the equivalent of at least 90 higher education credits in courses relevant to Technology. Of these, at least 30 credits must be at Master's level.

## Selection and admission

The selection of PhD students with student financing must follow SLU's decision on admission requirements (Journal No ua Fe.2012.4.4-3467).

For every admission round, the department responsible must propose and recommend admission of a suitable candidate. For PhD students with student financing arranged, the proposal and recommendation are based on the selection made. For PhD students with other forms of financing, the proposal and recommendation are made based on the department's assessment of the candidate's suitability in relation to the assessment criteria.

The following documents must accompany proposals from the department on admission of a PhD student:

- Proposal and recommendation from the department regarding the suggested candidate.
- Certificates of examinations completed at Master's level or, if an exception has been granted, an explanatory statement justifying why the candidate should be admitted, to be presented to the Faculty Board.
- Individual study plan drawn up according to the faculty/university format, including documentation regarding financing of the PhD education.
- Collaboration agreements or a commitment section drawn up according to the faculty/university format.
- Certificate of sufficient knowledge of English according to SLU's admission regulations.

## Contents

A doctorate degree comprises 240 higher education credits. A licentiate degree comprises 120 higher education credits. This corresponds to four and two years of full-time studies respectively. The education is normally divided into two main elements: scientific work and course-related studies. The scope and composition of the scientific work and course-related studies are described below:

### **Doctor of Philosophy** 240 credits

Doctoral thesis 150–180 credits

Courses 60–90 credits, of which

Subject courses constitute at least 30 credits

General courses constitute at least 12 credits

The other 18-48 credits are elective (either as subject or general courses or as other activities – see below).

**Licentiate** 120 credits

Licentiate thesis 75–90 credits

Courses 30–45 credits, of which

Subject courses constitute at least 15 credits

General courses constitute at least 6 credits

Thesis work

Working with the thesis involves formulating issues and/or hypotheses, drawing up foundations for research by for example planning trials, artistic activities, reading up on the literature, performing experiments, developing methods, taking specimens, inventories, analyses and reporting (essays), that is work whose results will be reported in the thesis. In addition to this, the work also includes seminars, workshops, conferences, study visits etc. These activities are a natural part of life as a scientist and are necessary and important in order to build scientific competence. The thesis may be submitted as a compilation thesis or as a monograph. The thesis should be written in Swedish or English. Rules for the final review and preliminary examination of monographs are described in SLU's guidelines for third-cycle education (Journal No ua Fe.2012.4.0-3218).

A doctoral thesis in the form of a compilation thesis should comprise 3–5 different works. The PhD student shall be the principal author of at least two of them. All the works shall be of such a standard that they may be published as international scientific publications in refereed journals and be of a normal standard for the research area. It is desirable that at least two essays have been published or accepted for publication. A preliminary examination of all the works to be included in a thesis and of the extent and contents of the summarising chapter is required before the public defence. If fewer than two works are published or accepted for publication, an external preliminary examination is required, and if no works at all are accepted, the preliminary examination will follow the procedure described in SLU's guidelines for third-cycle education.

A licentiate thesis in the form of a compilation thesis should comprise two works, of which the PhD student shall be the principal author of at least one. All the works shall be of such a standard that they may be published in refereed international scientific publications. It is desirable that at least one essay has been published or accepted for publication.

The thesis shall describe the PhD student's work in an international scientific context, provide a synthesis of the scientific work as well as contain a summary where the results are put in relation to the literature in the field.

Courses*Subject courses*

Subject courses provide in-depth subject study and/or complementary studies. Subject courses can be both theoretical and methodological. Subject courses shall have a course syllabus which describes entry requirements, purpose, contents, teaching format, time planning and what is needed in order to pass the course. Finally, a subject course

shall contain an element of independent performance/knowledge examination, where the new knowledge/proficiency is tested and applied using a suitable format.

### *General courses*

A general course is a course which provides general competence of a kind required by virtually all PhD students in the faculty. The decision regarding which courses are general courses is made by the PhD Education Board. In principle, all courses for which the faculty receives funding from the PhD Education Council are general courses. The funded general courses given at the faculty are the following: Introductory course for PhD students, Philosophy of science, Research ethics, How to write and publish a scientific paper, Popular science writing, Teaching in higher education - basic course, Research design, Treatment of data, Information retrieval and methods for scientific communication and various courses in leadership and project management. The recommended courses are mainly the PhD-level courses at SLU arranged by this faculty or another SLU faculty, but equivalent courses at other universities are also accepted. General courses shall have a course syllabus which describes entry requirements, purpose, contents, teaching format, time planning and what is needed in order to pass the course. They shall contain an element of independent performance/knowledge examination, where the new knowledge/proficiency is tested and applied using a suitable format.

### Other activities

Activities which count as course credits, in total a maximum of 15 credits

1. Poster presentation at an international conference
2. Lecture presentation at an international conference
3. Methodology/technology training at another department
4. Scientific information

The specific content and scope of individual PhD programmes within the subject Technology will be defined in an individual study plan to be adopted before admission. The study plan should be drawn up according to SLU guidelines, using the template intended for this purpose.

## Examination

The knowledge and skills acquired by the PhD student are tested in writing or orally in conjunction with each PhD course. To receive accreditation for courses taken, the PhD student and the principal supervisor must, before a course starts, agree whether it will count towards the degree.

PhD-level courses completed before admission to the PhD education may be credited on condition that the supervisor consents to the crediting of the course and states how many credits may be credited. PhD-level courses taken at another university (in Sweden or abroad) during the PhD studies may be credited to the PhD education.

Courses at Bachelor's or Master's level taken during the PhD education may be credited if the supervisor and doctoral student agree on this. The Director of Studies for the PhD

education makes an assessment regarding the number or credits that may be credited for Bachelor's/Master's-level courses taken during the PhD education. Half of the completed credits at Bachelor's/Master's level may be credited. However, no more than 10 credits of the courses credited to the PhD education should be Bachelor's/Master's-level courses.

Bachelor's/Master's-level courses which have been completed before the PhD education has begun, and which are requested to be credited towards a PhD, may be credited, but only following an application to the PhD Education Board, where the PhD Education Board is the decision-making body for the specific application.

The thesis is defended at a public defence in accordance with the procedure described in SLU's guidelines for third-cycle education.

For graduation, approved subject-related studies and an approved thesis are required. The marking system is Pass/Fail. The degree shall be given a title corresponding to the graduate's Bachelor's degree, for example Doctor of Philosophy for a Bachelor of Arts, Doctor of Philosophy in Science for a Bachelor of Science, Doctor of Philosophy in Horticultural Science for a Bachelor of Horticultural Science and a Doctor of Philosophy in Agricultural Science for a Bachelor in Agricultural Science.

## Supervision

Any individual enrolled as a PhD student has the right to continuous supervision during their studies (see the Swedish Higher Education Ordinance and the SLU guidelines for third-cycle education). On admission, there must be at least one supervisor under the age of 61 with readership qualifications and who is employed by the faculty. It is the responsibility of the faculty to ensure that the PhD student has adequate supervision and funding. If problems arise, the person/s responsible for PhD education at the faculty (Director of Studies and Deputy Dean) must therefore be consulted and contribute towards finding an appropriate solution for the PhD student.

## More information

For more detailed information on PhD education in Sweden, please refer to the Higher Education Ordinance Chapters 5–7, the Admission regulations for third-cycle education (Journal No ua Fe.2012.4.4-3467) and the Guidelines for third-cycle education (Journal No ua Fe.2012.4.0-3218).