



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

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## GOVERNING DOCUMENT

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# General syllabus for the doctoral programme in the subject of: **BIOMETRICS**

Valid as of 01/07/2016

Department to which the study plan applies  
ENERGY AND TECHNOLOGY

Subject code:  
NJBOM00

The objectives and design of courses in this subject may vary between faculties (see point 4. Miscellaneous).

The subject of biometrics (“biometri”) includes the following:  
statistics/mathematical statistics with a focus on planning, modelling and validation  
of trials processes; biomathematical modelling focusing on understanding  
mechanisms and interactions in biological systems, processes and their  
surroundings; environmetrics and geoinformatics with a focus on landscape  
systems and processes.

[A general syllabus must indicate the following: the main content of the  
programme, specific entry requirements and any other regulations required. All  
general syllabuses must be approved by the faculty board.]

## 1. Programme content and scope

The programme has two main components: courses and the doctoral thesis.

### **Thesis work**

During the period of study, the doctoral student shall carry out independent  
research, which is presented in a compilation thesis or a monograph written in  
English.

Utskrifter av det här dokumentet är kopior och måste alltid stämmas  
av mot originalet.

Printouts of this document are copies and must always be checked  
against the original.

## Courses

The student is required to undertake coursework which corresponds to 60–120 higher education credits (HEC) for a Degree of Doctor, or 30–60 HEC for a Degree of Licentiate. The number of credits will be determined when the student's individual study plan is approved. This must include suitable general courses as well as elective subject courses. Among the general courses, an introduction to theory of science is of particular importance.

According to the rules for doctoral education at SLU ([Regulations and forms for doctoral education](#) | [Medarbetarwebben](#)), all doctoral and licentiate degrees must include credits of theory of knowledge and research ethics. These courses should also cover rules on cheating and plagiarism.

## Introductory paper

Each new doctoral student must write a short introductory essay, in English, during the first 9 months of their doctoral studies. 4–5 pages should concern the subject field of their studies, and approximately 1 page should be devoted to a discussion on scientific conduct in general terms.

## 2. Specific entry requirements

Those admitted must meet the following specific entry requirements.

The specific entry requirement for doctoral studies in biometrics is knowledge corresponding to at least 60 HEC at second-cycle level in a subject relevant to the project. These 60 HEC should include a degree project corresponding to at least 30 credits. A good knowledge of English is required as the literature on this course is in English, and the thesis is to be written in English.

## 3. Overall rules for doctoral education at SLU

Third-cycle (doctoral) education is regulated by the Higher Education Ordinance (SFS 1993:100) and the Ordinance for the Swedish University of Agricultural Sciences (SFS 1993:221).

The local governing documents that regulate doctoral education at SLU level can be found on the page [Regulations and forms for doctoral education](#).

The programme is organised in a way that allows doctoral students to meet the qualitative targets for third-cycle courses and programmes specified in the *Higher Education Ordinance's Appendix 2 – Qualifications Ordinance* (see appendix 1).

## 4. Miscellaneous

When drafting the individual study plan, the doctoral student, together with the supervisor, should take into consideration the procedure for doctoral

studies at the MVM (doc. no SLU-278) in order to strengthen the environmental aspect of doctoral studies at the Department of Energy and Technology.

Each faculty offering the third-cycle subject can choose to specify specialisations or requirements in addition to the general syllabus. These requirements must be documented in an appendix.

## 5. Appendixes

Appendix 1- Higher Education Ordinance's Annex 2 – System of Qualifications

## Appendix 1.

### Higher Education Ordinance Appendix 2 – System of Qualifications.

#### ***Outcomes For the Degree of Doctor the third-cycle student shall***

##### *Knowledge and understanding*

- *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*

- *demonstrate the capacity for scholarly analysis and synthesis as well 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*

- *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.*

**Outcomes For a Degree of Licentiate the third-cycle student shall:**

*Knowledge and understanding*

- *demonstrate knowledge and understanding in the field of research including current specialist knowledge in 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*

- *demonstrate the ability to identify and formulate issues 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 predetermined time frames 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 in general, and*
- *demonstrate the proficiency required to participate autonomously in research and development work and to work autonomously in some other qualified capacity.*

*Judgement and approach*

- *demonstrate the ability to make assessments of ethical aspects of their own research;*
- *demonstrate insight into the possibilities and limitations of research, 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 ongoing learning.*