



General Syllabus for Third-Cycle Programmes in Environmental Science

This syllabus is for programmes leading to a Degree of Doctor and for programmes leading to a Degree of Licentiate. This document is subordinate to the Swedish Higher Education Ordinance and Södertörn University's local *Regulations for Third-Cycle Education at Södertörn University* (reg. no. 134/3.1.1/2014).

1. Description

Environmental Science is a broad interdisciplinary and multidisciplinary subject that investigates environmentally-related processes and problems, as well as societal interactions with natural values and natural resources. Environmental Science includes studies of ecological and biological processes, as well as how climate processes affect ecosystems of space and time, manmade environmental problems, as well as environmental policy, governance and sustainability challenges. Knowledge of subjects in both the natural and social sciences is essential for the understanding of environmental and sustainability challenges.

2. Qualitative targets

Third-cycle (doctoral) studies must provide proven knowledge and practical experience through the student's own research in Environmental Science and aim to educate autonomous and critical researchers who have the ability to contribute to knowledge development in the subject. A Degree of Doctor of Philosophy in Environmental Science from Södertörn University will provide the prerequisites for continued high quality research and qualified work in higher education, business and the public sector.

The qualitative targets for this programme, under the Qualifications Ordinance, Annex 2 of the Higher Education Ordinance (1993:100), are as follows:

Degree of Licentiate

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 research project and other qualified tasks within predetermined time frames in order to contribute to the formation of knowledge and 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 skills 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 science, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify their personal need for further knowledge and take responsibility for their academic development.

Thesis

- For a Degree of Licentiate the third-cycle student shall have been awarded a pass grade for a research thesis of at least 60 credits.

Doctoral degree

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 for reviewing and assessing 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 timeframes and to review and evaluate such work,
- demonstrate through a documented research project the ability to make a significant contribution to the development 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 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 through other qualified professional capacities.

Judgement and approach

- demonstrate intellectual autonomy, integrity and disciplinary rectitude as well as the ability to make assessments of research ethics, and
- demonstrate deep insight into the possibilities and limitations of knowledge, its role in society and the responsibility of the individual for how it is used.

Thesis

- For the Degree of Doctor the third-cycle student shall have been awarded a pass grade for a research thesis (doctoral thesis) of at least 120 credits.

3. Admission

3.1 General

Admission is to third-cycle (doctoral) education that is conducted as four years of full-time study and concludes the award of a doctoral degree. Admission may, in exceptional circumstances, be for only two years of full-time study that concludes the award of a Licentiate degree. Admission to third-cycle education that concludes with a Licentiate degree is to be considered an exception from the normal procedure. A doctoral student who has been admitted to a Licentiate programme and then applies to continue on a doctoral programme will be considered in competition with other applicants.

The announcement of vacant doctoral positions takes place nationally and internationally, preferably on fixed dates during the year and is dealt with by the Faculty Board. All announcements of vacant doctoral positions in Environmental Studies must be approved by the steering committee for doctoral education. In cases where the doctoral studentship is affiliated with the Baltic and East European Graduate School (BEEGS), a

representative from the Centre for Baltic and East European Studies (CBEES) is co-opted. Admission on a doctoral studentship is prepared by the subject of Environmental Science and Environmental Studies research area for doctoral education, which rank the applicants based on the selection criteria stated in the general syllabus. In cases where the doctoral studentship is financed via BEEGS, a representative from CBEES is co-opted to the evaluation process. The Faculty Board decides on admission or rejection based on the proposal put forward by the steering committee for Environmental Studies after the overall assessment of the application made by the subject of Environmental Science.

3.2 Entry requirements

For admission to a third-cycle programme in Environmental Science, the applicant must fulfil both the basic and specific entry requirements and thus have the necessary skills to benefit from the third-cycle programme.

General entry requirements

General entry requirements (Chapter 7, Section 39 of the Higher Education Ordinance) for third-cycle education are met if the applicant

1. has been awarded a second-cycle qualification,
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. acquired substantially equivalent knowledge in some other way in Sweden or abroad.

The higher education institution may permit an exemption from the general entry requirements for an individual applicant, if there are special grounds (Ordinance 2010:1064).

Specific entry requirements

The specific entry requirements are fulfilled by a student who has passed courses worth at least 90 credits, including a degree project worth at least 15 credits at second-cycle level, within Environmental Science or a related subject that is of central importance to the research area.

3.3 Selection

The basis for selection among eligible applicants is the ability to benefit from third-cycle programmes. A Curriculum Vitae must be appended to the application, as well as the texts and other documents to which the applicant wishes to refer and, where relevant, a research plan for the proposed thesis. The application is assessed on the basis of the following overarching criteria:

1. the applicant's merits and competence,
2. the quality of the individually proposed research project,
3. the suitability and feasibility of the individually proposed research project as a doctoral project,
4. the funding plan,
5. whether issues of research ethics have been considered,
6. whether sufficient collected supervisory capacity exists to provide good and professional supervision and the relevant expertise.

The application will also be assessed on the following subject-specific criteria:

- autonomy and originality in the formulation of problems, analysis and presentation of previous work
- theoretical and methodological stringency in previous work and, where relevant, in the research plan or equivalent
- research experience or relevant professional activity in the field of Environmental Science
- good skills in the English language and any other languages that important for work on the thesis
- a multidisciplinary or interdisciplinary background relevant to Environmental Science
- communication and cooperation skills
- in association with admission to BEEGS, the research plan will also be assessed for its relevance to the graduate school's specific geographic area; its focus on the Baltic Sea region or Eastern Europe.

Priority may be given to the underrepresented gender in cases where applicants have equivalent merits. Before a decision is taken, the most suitable applicants will be interviewed by an assessment group consisting of representatives from the subject of Environmental Science with the area of Environmental Studies.

The transfer of credits from previous studies may not take place during the admissions process, in order for it not to influence selection. Any credit transfer must always be initiated by the student and considered individually for each course in relation to the degree requirements for third-cycle programmes. Cases regarding credit transfers from previous studies are evaluated and decided upon by the steering committee for doctoral education.

3.4 Supervision

Supervision at Södertörn University must be characterised by high quality and provide doctoral students with a good education. Supervision may include discussions about work and the manuscript, reading and discussion of working texts, text reviews, discussions about experiments, planning seminars and public defences. Supervision also includes drawing up and reviewing an individual study plan. Supervision must be provided continually and be needs-based. The supervisor and doctoral student must meet to review and plan studies at least once per semester.

The doctoral student normally has their workplace at Södertörn University. As soon as employment starts, a principal supervisor and an assistant supervisor are appointed by the head of school on the proposal of the subject and the steering group for Environmental Studies. The interdisciplinary nature of Environmental Studies may mean that the doctoral student will benefit from having additional assistant supervisors. The principal supervisor must be a professor or a researcher with docent-level expertise. The assistant supervisor(s) must be researchers with a doctoral degree. The principal supervisor and assistant supervisor(s) must have completed a course in third-cycle supervision or be assessed as having the equivalent expertise; at least one of the supervisors should be employed at Södertörn University. Supervisors from an academic school other than the one at which the doctoral student is employed must be offered access to the supervisory collegiate and equivalent bodies.

The doctoral student is entitled to supervision during the prescribed programme of 240 credits. At Södertörn University, supervision is normally compensated with a maximum of 480 clock hours for the entire period of study, which is divided between the principal supervisor and the assistant supervisor(s). More detailed terms for supervision and each supervisor's tasks must be stated in the doctoral student's individual study plan. A request to change supervisor must be sent to the head of school by the doctoral student.

4. Format of the programme

4.1 General

The doctoral programme covers four years of full-time study, a total of 240 credits. It has one course-based section worth 60 credits and thesis work that is worth 180 credits. The doctoral student is also entitled to the award of a Degree of Licentiate (120 credits, of which 30 credits are from courses and 90 credits are for a thesis) as part of the third-cycle programme. In cases where a Licentiate degree is not awarded, the doctoral student must hold a seminar to mark the half-way point of their studies. Before the doctoral student's third-cycle programme concludes with a public defence of the thesis, a seminar is held at which the supervisory collegiate are able to review the thesis. Where admission is to a Licentiate programme, a Degree of Licentiate is awarded.

The normal case is that studies are conducted on a full-time basis. However, the doctoral student may participate in the work of the academic school to a maximum of 20% of the total period of study; this is then compensated for with an equivalent extension to the period of study. In exceptional cases (e.g. projects with external parties) studies may be conducted on a part-time basis that is at least 50% of full-time. The period of study may be extended in exceptional circumstances. These may include sick leave, military service, positions of trust with union organisations and parental leave.

4.2 Individual study plan and funding plan

The individual study plan must be drawn up when the doctoral student starts their employment, and must be approved by the steering committee for doctoral education no later than five months after this date. The Faculty Board is sent the written decision for information purposes. The individual study plan is drawn up in consultation between the doctoral student and their principal supervisor; it must clarify all the parties' obligations, specific targets for the doctoral student and the scope of the supervision.

A funding plan must be appended to the individual study plan to clarify the financial responsibility for the doctoral student's entire period of study. The head of school must ensure that a funding plan that covers the entire period of study is drawn up before a decision is taken about admission. The funding plan describes the financing for third-cycle studies, both variable and fixed resources, semester by semester. In general, for students with a funding source other than Södertörn University, an agreement must be signed with the party providing the funding (company, public authority, other higher education institution, etc.). In cases where funding is provided through employment with another employer, the manager of that organisation must approve the entire study plan and thus certify that third-cycle studies can take place as described.

The individual study plan must be reviewed annually; the doctoral student must submit a signed account of the previous semester and a detailed plan for their continuing third-cycle studies. The steering committee for doctoral education approves the presentation of the review and revision. The Faculty Board is informed in the form of a memorandum. After revising the individual study plan, the doctoral student and principal supervisor must confirm in writing that they have received any changes made, by signing the new version. In the intervening semester, the supervisor and doctoral student update the individual study plan and report to the steering committee for doctoral education if there are considerable deviations or problems. The steering committee for doctoral education sends this in writing to the Faculty Board and the relevant head of school for information purposes.

Validated, reviewed and revised individual study plans are kept in the university's central archive. This is done by the relevant administrative function at the academic school at which the steering committee is located. The first individual study plan that is drawn up must be registered (a unique registration number for each doctoral student) and must follow all the reviews and revisions to the study plan.

Significant deviations from the individual study plan may entail the doctoral student being expelled from access to university resources. The principal supervisor must, in association with the Faculty Board's review of the individual study plan, assess whether the doctoral student is following the individual study plan. Written notice is given of any deviations and these must be investigated without delay. If the deviation is significant and continues during the subsequent semester, it must be reported in writing to the head of school and director of studies. The head of school must give the doctoral student the opportunity to make a written statement regarding the supervisor's report, and then decide whether a proposal for the withdrawal of resources will be submitted to the Faculty Board. The supervisor's report and the doctoral student's statement must be appended to the proposal to withdraw resources, which must be motivated. The vice-chancellor is obliged to decide on the withdrawal of resources and to provide the doctoral student with instructions as to how they can appeal the decision to the Higher Education Appeals Board. An application to regain the right to supervision and other resources shall be submitted to the head of school, who transfers the case and their own statement to the vice-chancellor for a decision.

4.3 Thesis

Within the scope of the third-cycle programme, the student shall write a scholarly work that is published in the form of a doctoral or Licentiate thesis. This publication must present the doctoral student's ability to perform the described research task to a satisfactory scholarly level and in an autonomous manner. The doctoral/Licentiate thesis must be of a quality that is equivalent to the requirements for publication in a recognised academic journal with a review process.

Doctoral thesis

The thesis is worth 180 credits. The thesis shall either be a unified piece of scholarly work (monograph thesis) or a compilation of academic works to which a summarising discussion has been added (compilation thesis). It is the scholarly quality and the doctoral student's autonomous contribution to knowledge development that is assessed, not the number of articles in the thesis. The articles may have been co-authored, but the doctoral student's individual efforts must then be clarified in the summarising chapter. The doctoral thesis should be written in Swedish, Norwegian, Danish or English. If the doctoral student intends to use a language in the thesis that deviates from these guidelines, an application for this must be submitted to the Faculty Board. A thesis that is not written in English should include a summary in English. An abstract in English is to be appended to the thesis. If a thesis has been written in a language other than Swedish, Norwegian or Danish, it should include a summary in Swedish.

Licentiate thesis

The thesis is worth 90 credits. The Licentiate thesis shall be a monograph or a summary of one to two scholarly articles. If the articles have been co-authored the student's individual contributions must be described in the summary.

4.4 Courses

The courses are provided by Södertörn University or other higher education institutions. There should be a written syllabus which states the intended course learning outcomes, content and credits. For courses studied at other higher education institutions, the Director of Doctoral Studies for Environmental Science decides the number of credits to be transferred to the doctoral student. The courses are divided into obligatory and elective courses.

Degree of Doctor

The Degree of Doctor has one course-based section that is worth 60 credits. Obligatory courses in Environmental Science are:

- Research Design and Methodology in Environmental Studies, 7.5 credits
- Thesis Essay in Environmental Science, 7.5 credits
- For doctoral students who teach and have not previously gained the equivalent educational skills, there is a basic educational course of no more than 7.5 credits.
- Introductory course: Contemporary Research into the Baltic Sea Region and Eastern Europe, 7.5 credits (obligatory only for doctoral students at BEEGS)

Courses that are part of the doctoral student's programme must be specified in the individual study plan.

Degree of Licentiate

Admission to third-cycle programmes for the purpose of earning a Degree of Licentiate must be seen as an exception from the normal procedure and should therefore be considered with special care. Decisions regarding this are taken by the Faculty Board and may not be delegated. A doctoral student who has been admitted to a Licentiate programme and then applies to continue on a doctoral programme will be considered in competition with other applicants.

The Degree of Licentiate has one course-based section that is worth 30 credits. Obligatory courses in Environmental Science are:

- Research Design and Methodology in Environmental Studies, 7.5 credits
- Introductory course: Contemporary Research into the Baltic Sea Region and Eastern Europe, 7.5 credits (obligatory only for doctoral students at BEEGS)

Courses that are part of the Licentiate student's programme must be specified in the individual study plan.

5. Qualification requirements

In order to graduate, the doctoral student must receive a Pass grade on the courses and on the doctoral/Licentiate thesis. The director of doctoral studies for Environmental Science checks and approves, with the help of the principal supervisor, that all formal requirements for the award of a doctoral or Licentiate degree have been fulfilled.

Degree of Doctor

The doctoral thesis must be presented and defended orally in public. The scholarly quality of the thesis is reviewed by an external reviewer who is responsible for a thorough discussion, as well as by an examining committee. The external reviewer must be someone who does not work at Södertörn University, unless there are exceptional circumstances (primarily reasons of expertise).

The chairman of the public defence, external reviewer and examining committee are appointed by the Faculty Board according to a proposal from the area of Environmental Studies. The members of the examining committee are each asked to inform the university in writing, at least six weeks before the public defence, if the doctoral student is advised not to publicly defend the thesis and, if so, the reasons for this. The doctoral student must immediately be informed of such a decision.

A doctoral thesis is graded as either Pass or Fail, which is decided by the examining committee at the meeting immediately following the public defence; consideration is paid to both the content and the oral defence of the thesis.

Degree of Licentiate

The Licentiate thesis is presented orally at a public seminar that is led by an examiner. The board for the area of Environmental Studies appoints an examiner from the subject with docent-level expertise, as well as

a discussion panel consisting of an external seminar leader and two discussants from the subject. The task of the discussion panel is to review the presented Licentiate thesis and lead a constructive discussion during the seminar. The Licentiate thesis is graded as either Pass or Fail, which is decided by the examiner.