

**REGULATION****Decision-maker**
President**Valid from**
2024-01-30**Revised as of**
Click or tap here to enter the date.**Reference number**
V-2023-0909 3.2.3**Entity responsible for supervision and questions**
School of Architecture and the Built Environment

General syllabus for education at third-cycle level in the subject Sustainability Studies.

This regulatory document has been decided by the President (V-2023-0909) pursuant to chapter 6 sections 26-27 of the Higher Education Ordinance. The regulatory document is valid with effect from 30-01-2024. The regulatory document regulates the main content of the education, requirements for special qualifications and the other regulations that are needed. The School of Architecture and the Built Environment is responsible for review and questions about the governing document.

1 Content of the education

1.1 The name of the subject in Swedish and in English translation

Hållbarhetsstudier, Sustainability Studies

1.2 Subject description

Sustainability Studies is an interdisciplinary subject that studies the opportunities, challenges and obstacles related to how societies can be designed and organised to promote more sustainable and just development. Such work uses many different fields of knowledge. It focuses on exposing and understanding challenges that are serious enough to require long-term, pervasive changes - globally and/or for Sweden - as well as proposing and evaluating solutions to such challenges. It can also include improving our understanding of environmental and other sustainability issues of strategic importance to an industry, business, government, sector or civil society. This research applies a range of approaches, from actor-centred to systems-analytical perspectives that consider technology development, infrastructure and change processes in a social context. Broader studies of the social, spatial, cultural, economic and political aspects of sustainable development may also be included. The subject draws on knowledge from futures studies for sustainable development, sustainability and environmental assessment tools, sustainable urban and rural development, environmental economics, environmental systems analysis, human geography, environmental sociology and policy analysis, living labs, sustainable business models, ICT4S, environmental justice, political ecology, critical design, engineering sciences and systems ecology.

1.3 Specialisations

The subject has no specialisations.

1.4 Organisation of the education

1.4.1 Activities for fulfilment of outcomes for the education according to the Higher Education Ordinance (HF)

Below are described activities for the doctoral student's fulfilment of the learning outcomes for third-cycle education according to the Higher Education Ordinance (HF) and KTH's goals. The individual study plan specifies the activities for each individual doctoral student.

Learning outcomes: Knowledge and understanding

For the Degree of Doctor the doctoral student shall:

- Demonstrate broad knowledge and a systematic understanding of the research field as well as advanced and up-to-date specialist knowledge in a limited area of this field.

General and systematic understanding of the subject is developed in the compulsory courses Methods in Sustainability Science and Seminars in Sustainability Studies for Doctoral Students, basic and advanced course. In addition, this understanding is developed through supervision and seminar participation. The student demonstrates their achievement of this ability through summative assessment in the mentioned courses, through presentations at seminars and by writing a background section in the introductory chapter of their thesis. Specialised knowledge is developed through individual reading and research as well as through discussions with the supervisor and others. This is mainly demonstrated in the articles included in the thesis.

- Demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular.

General knowledge of scientific method is acquired through the compulsory course Introduction to the Philosophy of Science and Research Methodology. More specialised methodological knowledge is acquired through the compulsory course Methods in Sustainability Science. Such knowledge is also acquired through supervision and participation in seminars and conferences.

For a Degree of Licentiate, the doctoral student shall:

- 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 in particular.

General and systematic understanding of the subject is developed in the compulsory course Seminars in Sustainability Studies for Doctoral Students, basic course. In addition, this understanding is developed through supervision and seminar participation. The student demonstrates their achievement of this ability through summative assessment in the mentioned course, through presentations at seminars and by writing a background section in the introductory chapter of the licentiate thesis. Specialised knowledge is developed through individual reading, according to the supervisor's suggestions and instructions, as well as through discussions with the supervisor and others. It is mainly demonstrated in the articles included in the licentiate thesis.

Learning outcome: Competence and skills

For the Degree of Doctor the doctoral student shall:

- Demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically.

Supervision is designed to ensure that the graduate student gradually becomes more independent in analysing the data generated in their own research. The student's ability to critically review the research findings and observations of others is developed, both in the subject's seminars and in courses. This includes the courses Methods in Sustainability Science, Seminars in Sustainability Studies for Doctoral Students (basic and advanced courses) and Introduction to the Philosophy of Science and Research Methodology.

- 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.

Supervision is conducted in a way that encourages critical and independent thinking in doctoral students. This ability is developed through supervision as well as through the student's own research work and the compulsory course Seminars in Sustainability Studies for Doctoral Students. Writing the introductory chapter of the graduate thesis is central in particular, as the doctoral student must demonstrate their abilities in respect of this outcome. The outcome is examined through the courses and completed thesis work.

- Demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research.

The study plan is used at regular supervision sessions to plan the doctoral students' research work. We also use the seminars for continuous monitoring and discussion of the doctoral students' work. Supervisor meetings are organised to discuss the progress of doctoral students and to identify supervision and other necessary measures.

- 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.

Doctoral students present their research in research contexts as well as to clients and stakeholders. A full-time doctoral student should make one external presentation annually.

- Demonstrate the ability to identify the need for further knowledge.

In connection with the annual revision of study plans, the doctoral student is encouraged to present proposals for how further research should be planned. These suggestions are discussed with the principal supervisor as part of the study-plan process. As supervision continues, great importance is attached to the doctoral student's ability to identify himself or herself what needs to be done to drive the research forward.

- 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.

Doctoral students are given the opportunity to participate both in scientific conferences and in meetings with external stakeholders. They are also given ample opportunity to gain teaching experience and to participate in research projects in co-operation with industry and/or government. Doctoral students can be given the opportunity to take the course Basic Communication and Teaching (3.0 credits) as part of the programme.

For a Degree of Licentiate, the doctoral student shall:

- 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.

This is mainly developed through supervision and the student's own research work. In addition, we seek to involve doctoral students in discussions where research issues are identified and future research is planned. This applies to internal meetings as well as to meetings with colleagues from other universities and with clients relevant to our research.

- Demonstrate ability in both national and international contexts to present, discuss research, and research findings in speech and writing and in dialogue with the academic community and society in general.

Doctoral students present their research in research contexts as well as to clients and stakeholders. A full-time doctoral student should make one external presentation annually.

- Demonstrate the skills required to participate autonomously in research and development work and to work autonomously in some other qualified capacity.

Doctoral students are given the opportunity to participate both in scientific conferences and in meetings with external stakeholders. They are also given ample opportunity to gain teaching experience and to participate in research projects in co-operation with industry and/or government. Doctoral students can be given the opportunity to take the course Basic Communication and Teaching (3.0 credits) as part of the programme.

Learning outcomes: Judgement and approach

For the Degree of Doctor the doctoral student shall:

- Demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics.

Research seminars address issues of scientific integrity and research ethics. The compulsory course Scientific Theory and Research Methodology includes elements on research ethics. Introduction to Research Ethics for Doctoral Students (1.5 credits) is also taken.

- 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.

Issues regarding the potentialities and limitations of science are continuously addressed in supervision and seminars. Doctoral students are expected to address issues of societal relevance in their theses. In addition, these issues are addressed in the compulsory doctoral course in Scientific Theory and Research Methodology.

For a Degree of Licentiate, the doctoral student shall:

- Demonstrate the ability to make assessments of ethical aspects of his or her own research.

Research seminars address issues of scientific integrity and research ethics. The compulsory course Scientific Theory and Research Methodology includes elements on research ethics. Introduction to Research Ethics for Doctoral Students (1.5 credits) is also taken.

- Demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

Issues regarding the potentialities and limitations of science are continuously addressed in supervision and seminars. Doctoral students are expected to address issues of societal relevance in their theses. In addition, these issues are addressed in the compulsory doctoral course in Scientific Theory and Research Methodology

- Demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

In connection with the annual revision of study plans, the doctoral student is encouraged to present proposals for how further research should be planned. These suggestions are discussed with the principal supervisor as part of the study-plan process. As supervision continues, great importance is attached to the doctoral student's ability to identify himself or herself what needs to be done to drive the research forward.

KTH's outcome in sustainable development

For both the Degree of Licentiate and the Degree of Doctor, the doctoral student shall:

- Demonstrate with knowledge and skills the ability to be able to contribute to sustainable societal development towards an equal, inclusive and climate-neutral society.

This outcome is achieved through participation in outreach activities, dissertation work and participation in seminars, which, by the nature of the subject, largely address these issues. For the Degree of Doctor, course participation (Methods in Sustainability Science

7.5 credits and Introduction to Gender Equality, Diversity and Equal Opportunities (JML) for PhD Students, 0.5 credits) also contributes to this outcome.

1.4.2 Compulsory courses

Compulsory courses for both the Degree of Licentiate and Degree of Doctor:

- 7.5 credits in theory of science and research methodology. There are several ways to earn these credits:
 1. Philosophy of Science and Research Methodology, Engineering and Natural Sciences (7.5 credits). Or Scientific Theory and Research Methodology, Social Sciences (7.5 credits). Third cycle
 2. Introduction to Theory of Science and Research Methodology, Engineering and Natural Sciences (4.5 credits) OR Introduction to Theory of Science and Research Methodology, Social Sciences (4.5 credits). Third cycle
- PLUS
- Supplementary course in Theory and Methodology of Science (3.0 credits) OR Self-reflexive Methodology for the Scientific Study of Complex Social Phenomena (3.0 credits). Third cycle
3. Corresponding theory-of-knowledge course, e.g., Philosophy of Science (7.5 credits) at the Department of Philosophy, Stockholm University. Third cycle
 4. Doctoral students who have earned 7.5 theory-of-knowledge credits in prerequisite courses and study programmes need only take Supplementary Course in Theory and Methodology of Science (3.0 credits) OR Self-reflexive Methodology for the Scientific Study of Complex Social Phenomena (3.0 credits). Third cycle
- Introduction to Research Ethics for Doctoral Students (1.5 credits)
 - Introduction to Gender Equality, Diversity and Equal Opportunities (JML) for PhD Students (0.5 credits)
 - Seminars in Sustainability Studies for Doctoral Students, basic course (1.5 credits)

For the Degree of Doctor, the following is also required:

- Methods in Sustainable Science, Third Cycle (7.5 credits)
- Seminars in Sustainability Studies for Doctoral Students, advanced course (1.5 credits)

1.4.3 Recommended courses

Courses beyond the compulsory courses are decided by the doctoral student in consultation with the supervisor. Some recommended courses are listed below.

- Basic Communication and Teaching for Doctoral Students (3 credits)
- Futures Studies for Sustainability, Third Cycle (7.5 credits)

- Literature Course in Strategies for Sustainable Development, Third Cycle (7.5 credits)
- Life Cycle Assessment, advanced course, Third Cycle (7.5 credits)
- Scientific Writing for Environmental Strategies Research, Third Cycle (7.5 credits)

1.4.4 Conditional elective courses

The programme does not include any conditional elective courses, but courses beyond the compulsory courses are decided by the doctoral student in consultation with the supervisor.

1.4.5 Requirements for the degree

Degree of Doctor

A Degree of Doctor comprises 240 credits. At least 120 credits must consist of the doctoral thesis, and courses should make up at least 60 credits.

Thesis

Quality requirements and possible other requirements for the thesis.

The thesis should normally be written in English, with a summary in Swedish. A doctoral thesis can be based on a licentiate thesis.

A doctoral thesis must include new theoretical and/or empirical research results in the domain which the student has developed through theoretical or empirical research. It must also include a review describing previous research in the chosen domain. Whether the doctoral thesis is presented as a monograph or as a compilation of scientific articles, it must be of such quality that the doctoral student's own contributions are judged to be sufficient to form the basis of at least four articles which can be published in internationally recognised peer-reviewed journals. The introductory chapter of a compilation thesis, of which the doctoral student shall be the sole author, shall summarise the articles included and place them in a common context. This introductory chapter normally consists of 30 to 60 pages and need not contain new scientific contributions. As a guideline for the size of the introductory chapter, it should correspond to a total of 4 to 6 weeks of full-time work including the printing process.

Courses

The doctoral student shall have completed courses of at least 60 credits, of which 45 credits must be at third-cycle level and no more than 10 credits can be at first-cycle level.

Degree of Licentiate

A Degree of Licentiate comprises at least 120 credits. At least 60 credits must consist of the academic thesis, and courses should make up at least 30 credits..

Thesis

Quality requirements and possible other requirements for the licentiate thesis.

The thesis should normally be written in English, with a summary in Swedish.

A licentiate thesis must include an application of existing scientific knowledge or new theoretical or empirical research results in the domain which the student has developed through theoretical and/or empirical research. Den ska också innehålla en översikt över tidigare forskning inom det valda ämnesområdet. Whether the licentiate thesis is presented as a monograph or as a compilation of scientific articles, it must be of such quality that the doctoral student's own contributions are judged to be sufficient to form the basis of at least two standard articles which can be published in internationally recognised peer-reviewed journals. The introductory chapter of a licentiate thesis, of which the doctoral student shall be the sole author, shall summarise the articles included and place them in a common context. This introductory chapter normally consists of 20 to 40 pages and need not contain new scientific contributions. As a guideline for the size of the introductory chapter, it should correspond to a total of 2 to 3 weeks of full-time work including the printing process.

Courses

The doctoral student shall have completed courses of at least 30 credits, of which 15 credits must be at third-cycle level and no more than 10 credits can be at first-cycle level

1.4.6 Other elements in the education to promote and ensure goal attainment

Supervisors play a key role in organising, motivating and providing feedback on the studies in general and the thesis in particular. Supervision must support doctoral students in achieving the outcomes of the programme.

For doctoral students not including a licentiate thesis in their degree plan, a half-time seminar must be held. The half-time seminar must have an external reviewer. The reviewer shall be informed of all the doctoral student's work to date on the proposed doctoral thesis and shall give an oral opinion regarding how far the doctoral student has progressed. Taking this into account, the principal supervisor then makes his/her assessment and enters it into the individual study plan. A half-time or a licentiate seminar must have been held in order for the doctoral student to be deemed to have completed 50 per cent of the requirements of the doctoral programme.

The doctoral student must also hold a seminar before being promoted to the 80-per cent salary grade for doctoral student employment. At such an 80-per cent seminar, the doctoral student must present all the work produced thus far on the intended doctoral thesis and give an account of the courses taken. Supervisors must make a statement, either confirming achievement of the 80-per cent salary grade or indicating what is required to do so. This statement must be entered in the individual study plan.

Before commencing a formal advance review of the thesis, the principal supervisor should dispatch information to all principal supervisors in the subject stating the titles of planned articles and a brief description the timetable, and then discuss the timetable for completion with at least one supervisor in the subject who is not involved in the thesis. No documentation is needed for this discussion.

The external advance review must be planned to allow sufficient time (normally, at least two weeks) for the doctoral student to address the reviewer's comments.

In this subject, compilation theses are by far the most common form of thesis. However, monograph theses are accepted. Students choosing to write a monograph thesis must include a specific quality-audit plan in the individual study plan.

2 Admission to education at third-cycle level (qualification etc.)

Admission to education at third-cycle level is regulated in Chapter 7, Section 40 of the Higher Education Ordinance and in the admission regulations at KTH. KTH's regulations on specific prerequisites and such abilities in other respects as are needed to assimilate the education in the relevant subject at the doctoral level are set out below.

2.1 Specific prerequisites

To be admitted to the third-cycle education in **Sustainability Studies**, the applicant must have passed courses resulting in at least 60 credits at minimum second-cycle level in a **subject deemed to be directly relevant to Sustainability Studies**. These entry requirements can also be considered fulfilled by an applicant who has acquired essentially equivalent knowledge in another order.

In order to be admitted to third-cycle education in **Sustainability Studies**, the applicant must have knowledge of English equivalent to English 6.

2.2 Assessment criteria for testing the ability to assimilate the education

The following assessment criteria apply for testing the ability to assimilate the education:

Selection for third-cycle education is based on assessed ability to assimilate such education. The ability assessment is primarily based on having passed courses and programmes that satisfy the entry requirements. Particular consideration is given to the following:

1. Knowledge and skills relevant for thesis work and the subject.
These can be shown through attached documents and a possible interview
2. Assessed ability to work independently
 - a. ability to formulate and tackle scientific problems
 - b. ability to communicate well in speech and writing
 - c. maturity, judgement and ability to analyse critically and independently

The assessment may be based, for example, on degree projects and discussion of these at a possible interview.

3. Other experience relevant for third-cycle education, e.g. professional experience.
These can be demonstrated through attached documents and, potentially, an

interview.

3 The other regulations needed

3.1 Transitional regulations

Doctoral students admitted under a previous syllabus within the subject of Planning and Decision Analysis, specialisations Environmental Strategic Studies or Strategic Sustainability Studies, are entitled to switch to the subject Sustainability Studies or continue the syllabus under which they have been

admitted. When changing to Sustainability Studies, doctoral students can choose between following compulsory course requirements of Sustainability Studies or the previous subject. The choice should be reflected in the first individual study plan following the switch.

Requests to change to a new syllabus are made to the director of third-cycle education at the school.