



## General syllabus for third-cycle subject

Subject	Adopted	Registration number	Ks-kod
<b>Philosophy</b>	<b>10 May 2017</b> <i>Revised 4</i> <i>March 2019</i>	<b>V-2019-0207</b>	<b>3.2.3</b>

## General syllabus

**Established by the Faculty Council/Education Committee: 10/05/2017**

Revised: 04/03/2019

### **The name of the subject in Swedish and translated into English**

*Also indicated whether the subject has any specialisations.*

Filosofi (Philosophy)

### **Subject description Main content of the programme**

The third-cycle philosophical research and education is conducted at KTH with a focus on engineering science. This means that activities aim to gain new philosophical insights within areas and questions of particular importance to technology and engineering science. These include philosophy of science as well as epistemological and logical problems within engineering and its fundamental sciences. They also include decision theory as well as moral and social philosophy aspects of using technology, including risks and safety. Special emphasis is placed on interdisciplinary cooperation with other fields represented at KTH.

### **Programme objectives based on the Higher Education Ordinance, Annex 2, Qualifications Ordinance.**

*Each doctoral student's individual study plan shall be designed to guarantee the possibility of attaining the qualitative targets in the Higher Education Ordinance and KTH's objectives. Attainment shall be evaluated for each individual doctoral student. This shall be done annually by monitoring the individual study plan. The latter shall comment on progression vis-à-vis the objectives based on the programme's courses and student's thesis work. Other activities, such as supervision and external activities in line with education and public outreach shall also be factored into this.*

*State the programme elements for promoting goal attainment. Other details are to be given in an appendix to the subject's study plan.*

#### Knowledge and understanding

*For a Degree of Doctor, the doctoral student must*

- demonstrate broad knowledge within and a systematic understanding of the research area as well as deep and up-to-date specialist knowledge within a defined part of the research area, and*
- demonstrate familiarity with scientific methodology in general and with the methods of the specific research area in particular.*

The overarching goals "knowledge and understanding" are attained primarily through participation in courses and one's own supervised research.

#### Skills and abilities, including communication ability

*For a Degree of Doctor, the doctoral student must*

- demonstrate skills in scientific analysis and synthesis and ability to independently and critically consider and assess new and complex phenomena, questions and situations,*
- demonstrate ability to critically, independently, creatively and with scientific meticulousness identify and formulate questions as well as plan and conduct research and other qualified tasks using adequate methods within given time frames and review and evaluate such work,*
- write a thesis to demonstrate their ability to make significant contributions to knowledge development through their own research,*

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- demonstrate ability in both national and international contexts, verbally and in writing, to confidently present and discuss research and research findings in dialogue with the scientific community and society in general.
- demonstrate an ability to identify needs for further knowledge, and
- demonstrate ability, both in research and education and in other qualified professional contexts, to contribute to society's development and support the learning of others.

The overarching goals “competence and skills” are attained primarily through thesis work, but with support in the courses and seminar activities. Herein is included training in reading, understanding and criticising scientific texts and in arguing for or against findings and standpoints, both one's own and those of others. Communicating and discussing findings is trained specifically in the mandatory course 1N5105 Essay in Popular Science and through presentations at conferences.

### Judgement and approach

*For a Degree of Doctor, the doctoral student must*

- demonstrate intellectual independence and scientific integrity as well as the ability to make ethical research assessments, and
- demonstrate a profound insight into the possibilities and limitations of the discipline, its societal role and the responsibility people bear for how it is used.

The overarching goals “judgement and approach” are attained in collegial contexts and in courses and thesis work. The ability to make assessments based in research ethics is trained through the supervised thesis work and through participation in the compulsory course 1N5113/1N5114 Theory of Science and Research Method. Intellectual independence is trained and examined both through article publication and during the thesis work.

### Sustainable development

*For a Degree of Doctor, the doctoral student must*

- demonstrate knowledge of, and an ability to make relevant environmental and ethical assessments in order to be able to contribute to sustainable societal development.

The sustainable development objectives are attained through the supervised thesis project, in which sustainability-related research questions connected to the thesis subject are identified and discussed, and through completion of the compulsory third-cycle courses 1N5113/1N5114 Theory of Science and Research Method and 1N5103 Philosophy of the Technological Sciences, which include sustainable development as one of several themes. Students are also trained in reasoning around environmental and sustainability-related questions at the compulsory third-cycle seminars.

## **The subject has no specialisations.**

*(If the subject includes specialisations, the contents will be repeated in full for each specialisation below).*

## **Specific entry requirements**

*Subject knowledge requirements and any language requirements are specified here*

To be admitted to the third-cycle programme within Philosophy, the applicant must have passed courses resulting in at least 60 higher education credits at minimum second-cycle level within Philosophy or other subjects deemed directly relevant. These entry requirements can also be considered fulfilled by an applicant who has acquired essentially the equivalent knowledge in a different order.

Doctoral students are expected to read and write scientific English and to speak English fluently.

## **Selection rules**

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 demonstrated via attached documents and, potentially, an 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.

## **Contents and examination of course element**

Third-cycle courses must include proficiency tests, which can be written or oral. The examination must be designed so that the examiner can be convinced that the student has absorbed the full course content.

The Degree of Licentiate comprises a course element between 45 and 60 credits and a dissertation component of 60 and 75 credits which make up a combined total of 120 credits. The Degree of Doctor comprises a course element of 90 credits and a thesis of 150 credits, which make up a combined total of 240 credits.

The course elements for both the licentiate and doctorate degree consists of compulsory and elective courses. The elective courses must be chosen in consultation with the principal supervisor and be included in the individual study plan. They are intended to provide broad knowledge, primarily in conjunction to the work with the student's dissertation/thesis. The courses are to be taken in the order agreed by the student and their principal supervisor in the individual study plan.

The completion of a doctoral degree should, either through courses in the third-cycle programme or otherwise, entail a profound knowledge within the areas of philosophy of science, logic and/or other formal methods as well as moral philosophy.

## **Compulsory courses**

Compulsory courses corresponding to 30 credits for a Degree of Licentiate and 45 credits for a Degree of Doctor. The compulsory courses are listed below.

- 1N5105 Essay in Popular Science 30 credits
- 1N5102 Philosophical Texts 12 credits
- 1N5113 Theory of Science and Research Method, Technological and Natural Sciences 7.5 credits or 1N5114

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- AK3006 Seminar Participation in Philosophy, Part 1 7.5 credits
- 1N5103 Philosophy of the Technological Sciences 7.5 credits
- AK3007 Seminar Participation in Philosophy, Part 2 7.5 credits

Compulsory courses for a Degree of Licentiate are AK3006, 1N5113 (or 1N5114) along with at least 7.5 credits from the other courses that are compulsory for the Degree of Doctor.

### **Elective courses**

Additional courses comprising 30 credits are elected, from third-cycle philosophy courses and literature courses within the field of the dissertation/thesis corresponding to at least 15 credits.

### **General philosophy courses (30 credits)**

The general philosophy courses can be taken as an Individual reading course in philosophy A–E, course codes FAK3106–FAK3115. Examples of fields that may be covered by the general philosophy courses include: theory of knowledge, philosophy of science, logic, moral philosophy, philosophy of mathematics, philosophy of data and information science, decision theory, value theory, language philosophy, philosophical aesthetics, political philosophy or environmental philosophy.

### **Literature courses within the subject of the dissertation/thesis (15 credits)**

The literature is determined in the individual study plan following suggestions from the principal supervisor in consultation with the student. This may include courses from other science disciplines, which contribute to the student's orientation in engineering and natural science/mathematics relevant to the dissertation/thesis. The literature on the subject of the dissertation/thesis can be completely or partially replaced by philosophical literature that contributes to the student's general knowledge in philosophy and their methodological competence.

### **Training in higher education teaching**

Doctoral students teaching on a first-cycle or second-cycle programme must have completed introductory training in higher education teaching comprising at least 3 credits. The course is also recommended for doctoral students who do not teach.

## **Qualification requirements**

### **Degree of Doctor**

*A Degree of Doctor comprises 240 credits. At least 120 credits must consist of the doctoral thesis.*

#### **Thesis**

*Quality requirements and possible other requirements for the thesis.*

The thesis is a compulsory part of the third-cycle programme. This part of the programme aims to allow the student to develop the ability to make independent contributions to research and an ability for scientific cooperation, inside and outside their own subject.

The thesis must contain new research results that the student has developed independently or in collaboration with others. The scientific main results must meet the quality requirements for publication in internationally recognised peer-reviewed journals. The doctoral student's contribution to the texts with multiple authors included in the thesis must be distinguishable.

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The doctoral thesis must be written in English. It must normally be designed as an aggregation of scientific articles, along with a separately written summary. A doctoral thesis must contain enough material for at least four regular articles that can be published in internationally recognised peer-reviewed journals.

The doctoral thesis is normally based on the licentiate dissertation.

### **Courses**

A Degree of Doctor requires 90 credits obtained through courses.

### **Degree of Licentiate**

*A Degree of Licentiate comprises at least 120 credits. At least 60 credits must consist of the dissertation.*

### **Dissertation**

*Quality requirements and possible other requirements for the dissertation.*

The dissertation is a compulsory part of the third-cycle programme. This part of the programme aims to allow the student to develop the ability to make independent contributions to research and an ability for scientific cooperation, inside and outside their own subject. The dissertation must contain new research results that the student has developed independently or in collaboration with others. The scientific main results must meet the quality requirements for publication in internationally recognised peer-reviewed journals. The doctoral student's contribution to the texts with multiple authors included in the dissertation must be distinguishable.

The licentiate dissertation must be written in English. It must normally be designed as an aggregation of scientific articles, along with a separately written summary. A licentiate dissertation must contain enough material for at least two regular articles that can be published in internationally recognised peer-reviewed journals.

The doctoral thesis is normally based on the licentiate dissertation.

### **Courses**

A Degree of Licentiate requires between 45 and 60 credits obtained through courses.

Appendix

Qualitative targets, including KTH's objectives, as per the Higher Education Ordinance (Appendix 2 – Qualifications Ordinance) for concretising the subject and information on how the programme has been structured to help the doctoral student reach the targets.

**Degree of Doctor**

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Doctor, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
<p><i>demonstrate broad knowledge in and a systematic understanding of the field of research and deep and up-to-date specialist knowledge in a delimited part of the field of research</i></p>	<p>Broad knowledge in and a systematic understanding of the field Philosophy may for example involve the doctoral student being able to relate their own thesis work to the research field and adjacent research fields.</p> <p>Demonstrate deep and up-to-date specialist knowledge in the delimited field of research that concerns the thesis work can for example involve reading and discussing relevant literature that specifically concerns their own research.</p>	<p>General and systematic understanding of the subject is developed within the compulsory courses 1N5113/1N5114 Theory of Science and Research Method and 1N5103 Philosophy of the Technological Sciences, as well as the elective courses, such as 1N5117 Decision Theory and AK2004 Philosophy of Risk. Training is also provided through supervision and seminar participation. The student demonstrates attained ability via examination in said courses, presentations at seminars and by writing the background section to the summarising, introductory chapter of their thesis.</p> <p>Specialist knowledge is developed through individual study as per the supervisor's suggestions and instructions and through discussions with the supervisor and others. This is primarily presented in the papers in the thesis.</p>
<p><i>demonstrate familiarity with scientific methodology in general and with the methods of the specific research area in particular.</i></p>	<p>Familiarity with scientific method in general may for example concern the doctoral student understanding and being able to describe what characterises philosophical method, the importance of meticulousness, a systematic</p>	<p>General knowledge of scientific methodology is acquired through the compulsory course 1N5113/1N5114 Theory of Science and Research Method. It is also acquired through supervision and participation in seminars and</p>

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Doctor, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
	<p>approach and scientific integrity.</p> <p>Familiarity with methods in Philosophy can for example relate to the doctoral student understanding and being able to use conceptual analysis, argumentation analysis and formal methods.</p>	<p>conferences.</p>
<p><i>demonstrate skills in scientific analysis and synthesis and ability to independently and critically consider and assess new and complex phenomena, questions and situations,</i></p>	<p>An ability to conduct scientific analysis and synthesis may for example involve the doctoral student being able to independently analyse philosophical theories and arguments, placing them in relation to their own earlier research, and continue building on them in their own research.</p> <p>An ability to independently critically review and assess new and complex phenomena, questions and situations may for example involve the doctoral student being able to review others' scientific works and discussing different ways to explore complex phenomena and suggest how these insights can be used in their own research.</p>	<p>Supervision is structured so that the student increasingly becomes more independent in analysing the data generated by their own research. The ability to critically review the research results and observations of others is practiced at the department seminars and courses. This includes the courses AK3006 Seminar Participation in Philosophy, Part 1 and AK3007 Seminar Participation in Philosophy, Part 2.</p>
<p><i>demonstrate ability to critically, independently, creatively and with scientific meticulousness identify and formulate questions as well as plan and conduct research and other qualified tasks using adequate methods within given time frames and review and evaluate such work</i></p>	<p>This may for example relate to the doctoral student independently planning the implementation of a substudy, including the formulation of questions, and suggesting methods of data collection and/or analysis.</p>	<p>This is practiced primarily through supervision and independent research. In addition, we strive to have doctoral students participate in discussions to identify research questions and plan future research. This relates to both internal meetings and meetings with colleagues from other universities as well as other</p>

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Doctor, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
		<p>external parties of importance to our research.</p>
<p><i>write a thesis to demonstrate their ability to make significant contributions to knowledge development through their own research</i></p>	<p>This objective is attained by the doctoral student authoring and defending an academic thesis.</p>	<p>In addition to the individual study plans, we use the supervision meetings to plan the doctoral students' research. We also use seminars for continuous follow-up and discussion of the doctoral students' work. Supervisor meetings are used to discuss the doctoral students' progress and to identify supervisory measures and other actions that are required to further assist the doctoral students in attaining this central goal in the third-cycle education</p>
<p><i>demonstrate ability in both national and international contexts, verbally and in writing, to confidently present and discuss research and research findings in dialogue with the scientific community and society in general.</i></p>	<p>This may for example relate to the doctoral student presenting their own research results at seminars in the department, at national and international conferences, and to the doctoral student presenting research results by writing scientific articles and conference contributions.</p>	<p>We attach great importance to doctoral students presenting their research not only in research contexts, but also to stakeholders and other interested parties. Our principle is that a full-time doctoral student must give an external presentation, for example at an international conference at least once a year</p>
<p><i>demonstrate ability to identify needs for further knowledge</i></p>	<p>An ability to identify needs for further knowledge may for example involve the doctoral student suggesting literature, courses or conferences that are considered necessary to advance in the thesis work.</p>	<p>In conjunction with the annual review of their study plan, the doctoral student is encouraged to present their own proposals for how to plan the continued research. These proposals are discussed with the principal supervisor as part of the work to review the study plan. The continuing supervision places great emphasis on the doctoral student independently identifying what needs to be done to move their research</p>

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<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Doctor, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
		<p>forward.</p>
<p><i>demonstrate ability, both in research and education and in other qualified professional contexts, to contribute to society's development and support the learning of others.</i></p>	<p>Prerequisites, both in research and education and in other qualified professional contexts, to contribute to society's development and support others' learning may for example involve the doctoral student being involved in teaching on foundation courses or presenting research findings for the general public. It may also involve the doctoral student identifying aspects of the research that can contribute to a better society.</p>	<p>Doctoral students are afforded opportunities to participate in both scientific conferences and in meetings with external interested parties. When possible, they are also afforded opportunities to gain teaching experience. Doctoral students are offered the possibility, as part of their programme, to take the course LH3000 Basic Communication and Teaching 3.0 credits.</p>
<p><i>demonstrate intellectual independence and scientific integrity as well as the ability to make ethical research assessments</i></p>	<p>Intellectual independence and scientific integrity and an ability to make research-ethical assessments may for example involve the doctoral student discussing ethical aspects that concern scientific activities in general and their own research in particular. It may also involve the doctoral student carrying out research tasks meticulously and systematically, arguing for their own research ideas and acting in accordance with ethical guidelines.</p>	<p>Supervision as well as research seminars bring up issues relating to scientific integrity and research ethics. The research ethics elements is part of the compulsory course 1N5113/1N5114 Theory of Science and Research Method</p>
<p><i>demonstrate a profound insight into the possibilities and limitations of the discipline, its societal role and the responsibility people bear for how it is used</i></p>	<p>Demonstrating a profound insight into science's possibilities and limitations, its role in society and people's responsibility for how it is used may for example involve the doctoral student reflecting on and discussing science's possibilities and limitations, both in general and in relation to their own research, and discussing how the findings can</p>	<p>Questions relating to the possibilities and limitations of science are discussed continuously during supervision and seminars. The doctoral students are expected to bring up questions relating to social relevance in the introductory chapter of their thesis. These issues are also addressed in the obligatory third-cycle course 1N5113/1N5114 Theory of</p>

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Doctor, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
	<p>and should be used.</p>	<p>Science Research Method and in the elective third-cycle course 1N5115 Introduction to Research Ethics.</p>
<p><i>(KTH's objectives for MHU) demonstrate knowledge of, and an ability to make relevant environmental and ethical assessments in order to be able to contribute to sustainable societal development.</i></p>	<p>Having demonstrated knowledge of and ability to assess for example environmental or ethical questions so that they after the awarding of the degree can contribute to sustainable development of society may for example involve the student being able to reflect on and discuss environmental, sustainability and ethical aspects that concern the implementation of their own research and possibly also its focus.</p> <p>It may also involve the doctoral student contributing, where possible, to reducing environmental impact in the implementation of their own research (as regards travelling, meetings and material and energy consumption).</p>	<p>Questions relating to sustainable development are always relevant to the research area, and will be brought up in supervision, seminars and third-cycle courses. These are brought up, for example, in the compulsory third-cycle courses 1N5113/1N5114 Theory of Science and Research Method and in 1N5103 Philosophy of the Technological Sciences.</p> <p>The doctoral student is encouraged to participate in the environmental work of the school/department in the annual appraisals.</p>

**Degree of Licentiate**

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Licentiate, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
<p><i>demonstrate knowledge and understanding within the research field, including current specialist knowledge within a part thereof, as well as advanced knowledge of general scientific methods and the methods of the specific research field in particular</i></p>	<p>This may for example concern the doctoral student being able to relate their own thesis work to the field of research and adjacent fields, and understanding and being able to describe what characterises philosophical method, the importance of meticulousness, a systematic approach and scientific integrity.</p>	<p>General and systematic understanding of the subject is developed within the compulsory courses 1N5113/1N5115 Theory of Science and Research Method, as well as the elective courses, such as 1N5117 Decision Theory and AK2004 Philosophy of Risk. Training is also provided through supervision and seminar participation. The student demonstrates attained ability via examination in said courses, presentations at seminars and by writing the background section to the summarising, introductory chapter of their dissertation. Specialist knowledge is developed through individual study as per the supervisor’s suggestions and instructions and through discussions with the supervisor and others. This is primarily presented in the papers in the dissertation.</p>
<p><i>demonstrate ability to critically, independently, creatively and with scientific meticulousness identify and formulate questions as well as plan and conduct limited research and other qualified tasks using adequate methods within given time frames, thereby contributing to knowledge development, and review and evaluate such work.</i></p>	<p>This may for example relate to the doctoral student independently planning the implementation of a substudy, including formulation of questions, suggesting analysis methods; the doctoral student being able to independently analyse concepts and arguments and interpret their own results in relation to previous research; and the doctoral student being able to review the scientific works of others and discuss different ways of exploring complex phenomena and</p>	<p>This is practiced primarily through supervision and independent research. In addition, we strive to have doctoral students participate in discussions to identify research questions and plan future research. This relates to both internal meetings and meetings with colleagues from other universities as well as other external parties of importance to our research.</p>

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Licentiate, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
	<p>suggest how such insights could be applied in their own research.</p>	
<p><i>demonstrate ability in both national and international contexts, verbally and in writing, to clearly present and discuss research and research findings in dialogue with the scientific community and society in general.</i></p>	<p>This may for example relate to the doctoral student presenting their own research results at seminars in the school, at national and international conferences, and to the doctoral student summarising research results by writing scientific articles and conference contributions.</p>	<p>We attach great importance to doctoral students presenting their research not only in research contexts, but also to stakeholders and other interested parties. Our principle is that a full-time doctoral student must give an external presentation, for example at an international conference, at least twice up until the licentiate degree.</p>
<p><i>demonstrate such skills as are required to independently participate in research and development work and to work independently in other qualified activities</i></p>	<p>This may for example relate to the doctoral student formulating assignments and projects to a greater extent, reflecting on how they can contribute to other qualified activities.</p>	<p>Doctoral students are given the opportunity to perform the third task by participating in activities involving contact with other qualified activities. When possible, they are also afforded opportunities to gain teaching experience.</p>
<p><i>demonstrate the ability to make research ethical assessments in their own research.</i></p>	<p>This may for example relate to the doctoral student being able to discuss ethical aspects concerning academic activities in general and their own research in particular. It may also involve the doctoral student carrying out research tasks meticulously and systematically, arguing for their own research ideas and acting in accordance with ethical guidelines.</p>	<p>Supervision as well as research seminars bring up issues relating to research ethics. The research ethics elements is part of the compulsory course 1N5113/1N5114 Theory of Science and Research Method.</p>
<p><i>demonstrate an insight into the possibilities and limitations of the discipline, its societal role and the responsibility people bear for how it is used</i></p>	<p>This may for example relate to the doctoral student reflecting on and discussing the possibilities and limitations of science, both in general and in relation to their own research, and discussing how results can and should be used.</p>	<p>Questions relating to the possibilities and limitations of science are discussed continuously during supervision and seminars. The doctoral students are expected to bring up questions relating to social relevance in the introductory chapter of their thesis. These</p>

<p><b>Objectives based on the Higher Education Ordinance, Annex 2 – Qualifications Ordinance</b></p> <p><i>For a Degree of Licentiate, the doctoral student must</i></p>	<p><b>Concretisation and adaptation of targets to the third-cycle subject area</b></p>	<p><b>Programme elements that promote goal attainment</b></p>
		<p>issues are also addressed in the obligatory third-cycle course 1N5113/1N5114 Theory of Science Research Method and in the elective third-cycle course 1N5115 Introduction to Research Ethics.</p>
<p><i>demonstrate the ability to identify their need for further knowledge and to take responsibility for their own knowledge acquisition.</i></p>	<p>This may for example involve the doctoral student suggesting literature, courses or conferences that are considered necessary to advance the thesis work.</p>	<p>In conjunction with the annual review of their study plan, the doctoral student is encouraged to present their own proposals for how to plan the continued research. These proposals are discussed with the principal supervisor as part of the work to review the study plan. The continuing supervision places great emphasis on the doctoral student independently identifying what needs to be done to move their research forward.</p>
<p><i>(KTH's objectives for MHU) demonstrate knowledge of, and an ability to make relevant environmental and ethical assessments in order to be able to contribute to sustainable societal development</i></p>	<p>This may relate to the doctoral student being able to reflect on and discuss environmental, sustainability-related and ethical aspects that concern the implementation of their research and possibly its focus.</p> <p>It may also involve the doctoral student contributing, where possible, to reducing environmental impact in the implementation of their own research (as regards travelling, meetings as well as material and energy consumption).</p>	<p>Questions relating to sustainable development are always relevant to the research area, and will be brought up in supervision, seminars and third-cycle courses. These are brought up, for example, in the compulsory third-cycle courses 1N5113/1N5114 Theory of Science and Research Method and in 1N5103 Philosophy of the Technological Sciences.</p> <p>The doctoral student is encouraged to participate in the environmental work of the school/department in the annual appraisals.</p>