

Programme description of doctoral programme in Art, Technology and Design

1. Name of programme

Art, Technology and Design

2. Subject area

The doctoral programme in Art, Technology and Design constitutes a PhD subject area, Art, Technology and Design. It holds research within an emerging research area shaped by dynamic encounters between artistic and scientific approaches, as well as between three different perspectives: art, technology and design. The research area is essentially interdisciplinary through its focus on intersecting perspectives and concrete materialisations. Research projects in the subject area have a critical and analytic approach that is applied both to material and performative experimentations and in discursive, theoretical investigations. Research projects have a strong transdisciplinary potential in their capacity to include collaborations with external partners from e.g. business, culture and public sector, and government.

3. The overarching aims and objectives of the doctoral programme

The aim of KTH's education on PhD level is to provide society with qualified researchers with the ability to contribute to a sustainable development of society. The doctoral programme in Art, Technology and Design is run by KTH in collaboration with Konstfack (University College of Arts, Crafts and Design).

Established through a partnership between two schools of higher education, the programme provides an arena for encounters between different cultures of knowledge and methods of research, innovation and production within art, technology and design. The overarching goal of the doctoral programme is to combine research and education on sustainable social development, and the adjustments such a development entails, with a radical rethinking of the relation between the individual, society and the environment. In challenging conventions within established knowledge areas, in holding a transdisciplinary scope, and by combining the practices of making with advanced epistemological and methodological perspectives, research and education within the programme aim to contribute with a strong innovative force. Artistic methods may, for example, be used for detailed studies of everyday phenomenon that disclose their connections to larger contexts of habitual patterns. Underlying perceptions and mechanisms may thus be brought forth and made accessible for productive re-evaluations. Current research in design has, for instance, pointed to the conventional coding in terms of gender in everyday objects, and investigated aspects of their foundational effects on e.g. identity formation, action patterns and consumerist culture. By centring on human experience through a rethinking of design and sound-art perspectives, recent research on urban sonic environments contributes to new ways of planning and constructing the forms of future inhabitation in a denser urban environment.

The aim of the education in the doctoral programme is to give the student good knowledge in the subject area and the ability to pursue independent research, teaching, and development and consultative work in different areas of society, besides contributing to the development of advanced artistic practices. The aim of the doctoral degree is further to develop the PhD student's ability to critically and independently plan, finance, initiate and lead such work.

See further <http://intra.kth.se/regelverk/utbildning-forskning/forskarutbildning/mal->

for-utbildningen-pa-forskarniva-1.36192

4. The size and recruitment of the doctoral programme

The expected number of PhD students in the programme during the build-up phase is approximately 30 full time PhD students. Approximately 8 new PhD students will be admitted every year. The student target group is primarily persons with a degree in Architecture, Civil Engineering, Master in Art, Arts and Crafts, Design or Technical subject. Also other educational backgrounds may be suitable.

The programme will admit students according to KTH's regulations. The application procedure includes mandatory interviews.

In general, PhD candidates to the programme should be strongly motivated for PhD studies, have the ability to work independently and for critical analysis, as well as a good capacity for collaboration and communication. The applicant should have good knowledge of both spoken and written English. Knowledge in Swedish is not necessary, but may facilitate the successful completion of the PhD studies.

KTH's general rules for admittance to PhD studies are applied.

The recruitment and announcement of PhD student follow KTH's regulations:
<http://intra.kth.se/regelverk/utbildning-forskning/forskarutbildning/antagning/antagningsordning-for-utbildning-pa-forskarniva-vid-kth-1.27236>

At KTH and Konstfack there are today at least 20 main supervisors with the appropriate background for participation in the programme.

5. Financing

The financing of the doctoral programme, including quality evaluation and PhD positions, is through university funds, external funds, stipends and through other financing such as participation in PhD schools and cooperation with businesses.

For PhD students with (external) stipend there are special rules, see
<http://intra.kth.se/regelverk/utbildning-forskning/forskarutbildning/studiefinansiering/tillampning-av-finansieringsmojligheter-for-doktorander-vid-kth-1.27237>

6. Courses

The doctoral programme contains a mandatory course package of 30 university credits. Besides providing basic epistemological and methodological insights, both at a comprehensive level and for the particular research area, the complete set of courses offered are of great importance for the development of the programme's orientation and for defining the research area. The course package is divided between courses that are primarily based on lectures, seminars and literature, and courses organised as seminars and workshops that focus on emerging analytical and experimental methods in alignment with the progress of the individual research projects carried out within the programme. Included in the course package is an introductory course to university teaching with a special focus on art and design.

The current list of courses is to be found on the webpage of the doctoral programme. The course list is revised annually by the programme council. Attached to this document is a study plan that states the mandatory elements of the programme. The main reading courses are held every two years, or more frequently if necessary. In many cases the teaching may be coordinated with similar courses at an advanced level, where the difference between courses consists in a few lectures and reading assignments, and the examination on PhD level is characterised by higher requirements in terms of independence and creativity. Courses held within the programme are registered at KTH but are given partly or entirely both at KTH and Konstfack. PhD candidates can also take certified courses at other universities. The main supervisor is responsible for the individual candidates course plan through his or her engagement with the individual study plan. Possible exceptions from the mandatory courses shall be motivated and be approved by programme director before handing in the individual study plan to the Director of doctoral studies.

7. Organisation of the programme

The programme is based on a collaboration between KTH and Konstfack, which makes it essential that Konstfack is distinctly represented in the organisation. The programme is lead by a Programme Director from KTH in close collaboration with an assisting Programme Director from Konstfack and a programme council consisting of supervisors from both institutions and subject areas, as well as PhD candidates from both institutions. See detailed description of organisation in attachment.

8. Programme activities

During the build-up stage of the programme it is of vital importance to offer a collection of courses and activities that support the development of a strong research environment for the PhD candidates, supervisors and researchers in the subject area. The mandatory course package forms part of this and, together with courses given at advanced (graduate) level, its programme for workshops, lecture series, conferences and exhibitions.

On a yearly basis, the doctoral programme organises a workshop/conference/exhibition with the participation of the PhD candidates in the programme, supervisor and invited speakers, allowing for presentations of the PhD candidates' work and for discussions on the development of the programme. The mandatory course package in the programme is a central element in the programme's activities. Faculty seminars are organised on a regular basis throughout the year, allowing both researchers and PhD candidates to present on-going research and to provide international outlooks.

An introductory meeting is held twice a year, allowing for presentations of the most important aspects of the programme and giving different research orientations the opportunity to briefly present their activities.

9. Quality enhancement

The programme is set in a process of continuous improvement through the evaluation of courses and the progress of the candidates, and through assessments of the quality of supervision and dissertations. The courses on PhD level are evaluated according to KTH's regulations, which states that course evaluations are to be made and the results published every time a course is held.

The progress of the PhD candidates is evaluated annually as follows, in connection with the annual workshop/conference/exhibition:

- Each PhD candidate writes a self-evaluation that forms the basis for a seminar discussion on partial results with supervisors and PhD candidates in the programme, allowing for an assessment of the quantity and quality of the student's progress and supervision;
- The individual study plan is revised and registered.

The programme council, PA and assistant PA follow the local and international discussion in their subject areas and on PhD level education generally, and continuously adjust the programme accordingly.

The quality of the dissertation is assured through the distribution forms described in the study plan. As part of PhD studies the candidate should perform annual evaluations as described above. A final seminar with an external examiner is held prior to the PhD thesis defence. According to KTH's regulations, an internal quality controller certifies the quality before the dissertation is permitted to be publically defended. Finally, a balancing of assessments between the parties (evaluation committee, supervisors and chair) is carried out at the public defence. The quality requirements for a dissertation are stated in more detail in the study plan for the subject area.

10. Facilities / Infrastructure

The PhD programme will have access to very advanced laboratories and specialized workshops at KTH and at Konstfack as well as exhibition spaces of high quality and unique character.

11. Context

The doctoral programme will cooperate with existing practices at KTH and Konstfack that have neighbouring profiles and specializations in art, technology and design. At KTH, these include the strong research environments in Architecture (ABE), centre formations such as Centre for Sustainable Communications (ABE/CSC), Centre for Opera and Technology (CSC), Design Faculty (ITM), Product innovation Engineering Program (ITM PIE-p), VinnExcellence Centre for Hierarchic engineering of industrial materials (ITM HERO-M). Konstfack is currently in the process of developing a new research structure, described in its research strategy, that e.g. involves investments in new simulation laboratories and workshops that are of central importance for the doctoral programme.

12. National and international networks

The preparatory work the doctoral programme has been made by reference to existing national research schools (ResArc, Design Faculty, Artistic research school, APULA) and international doctoral programme of high repute in art, performance, design and architecture. Referenced programmes include examples at Aalto University (Finland), Bartlett UCL (UK), Cresson in Grenoble (France), Danish Design school, Harvard DDes (USA), IIT (USA), Royal College of Art (UK), Princeton (USA), SintLucas/Leuven (Belgium), TU Delft (Netherlands), RMIT (Austria). Interesting environments/centres such as Institute of Making (UK) and MIT Centre for Art, Design and Science have also been taken into consideration.

The course offering is coordinated with neighbouring doctoral programmes at KTH and with local and national research schools. International research schools are organised in a number of subject areas within different international organisations. The course offered at these schools may be relevant to include as part of the PhD candidates study plan.

An extended stay at a well-known research group with a relevant research profile is a natural part of PhD studies and should be included in the study plans. The exchange is based on the supervisors and PhD candidates networks and together with other universities within the frame of “joint doctoral programs” such as Erasmus Mundus and EIT.

Attachment 1. Study plan for doctoral programme in Art, Technology and Design

1. Description of subject area

The PhD subject area Art, Technology and Design holds research within an emerging research area shaped by dynamic encounters between artistic and scientific approaches, as well as between three different perspectives: art, technology and design. The subject is advanced and developed within the framework of the doctoral programme in Art, Technology and Design. In being established through a partnership between KTH and Konstfack, the programme provides an arena for encounters between different cultures of knowledge and methods of research, innovation and production within art, technology and design. The overarching aim of the doctoral programme is to combine research and education on sustainable social development, and the adjustments such a development entails, with a radical rethinking of the relation between the individual, society and the environment. In challenging conventions within established knowledge areas, in holding a transdisciplinary scope, and by combining the practices of making with advanced epistemological and methodological perspectives, research and education within the programme aim to contribute with a strong innovative force.

Artistic methods may, for example, be used for detailed studies of everyday phenomenon that disclose their connections to larger contexts of habitual patterns. Underlying perceptions and mechanisms may thus be brought forth and made accessible for productive re-evaluations. Current research in design has, for instance, pointed to the conventional coding in terms of gender in everyday objects, and investigated aspects of their foundational effects on e.g. identity formation, action patterns and consumerist culture. By centring on human experience through a rethinking of design and sound-art perspectives, recent research on urban sonic environments contributes to new ways of planning and constructing the forms of future inhabitation in a denser urban environment.

The research area is essentially interdisciplinary through its focus on intersecting perspectives and concrete materialisations. Research projects in the subject area have a critical and analytic approach that is applied both to material and performative experimentations and in discursive, theoretical investigations. Research projects have a strong transdisciplinary potential in their capacity to include collaborations with external partners from e.g. business, culture and public sector, and government.

2. Aim of education

The overarching aim of the doctoral programme according to KTHs directives:
The purpose of KTH doctoral studies is to provide society with competent researchers who can contribute to its sustainable development.

The goal of KTH doctoral studies is for doctoral students to become independent and excellent researchers. After completing their studies, doctoral students will be able to:

- describe and explain theories and empirical results in the field in question

- formulate specific research issues in the field in question
- use scientific method and develop new knowledge through their own scientific studies
- critically analyze and evaluate the methods and results from own and others' scientific studies
- present and discuss research findings in the scientific community

The more specific aims of the doctoral programme is to strengthen the development of knowledge and innovation towards a more sustainable development of society by way of education and excellent research from the outset of art, technology and design. The PhD candidates are trained to become independent researchers who upon the completion of their studies will have a good capacity to contribute to scientific and artistic education, as well as in professional contexts; a good capacity to formulate concrete and relevant research problems within the subject area, and a good capacity to communicate relevant research findings to professionals in the arts, in the fields of technology and design, and to members of the general public.

3. The general structure of the programme

The education on PhD level consists of a course part and a dissertation part. The course part may consist of lectures, literature studies, experiments, artistic practices and formulations, essay writing, problem solving and active participation in seminars, exhibitions and conferences. Courses can be taken within the programme as well as in cooperation with other national and international institutions. The main part of the courses should normally be taken during the first half of the education. The main supervisor is responsible for the individual candidates course plan through his or her engagement with the individual study plan. Possible exceptions from the mandatory courses shall be motivated and be approved by programme director before handing in the individual study plan to the Director of doctoral studies.

The education on PhD level is conducted through guidance by a main supervisor together with at least one assisting supervisor. The progress of the PhD candidate should be assessed at least once yearly in conjunction with the revision of the individual study plan, made by the PhD candidate and the main supervisor. The individual study plan is subject to approval by the Director of doctoral studies.

PhD candidates are assumed to have an interest in and the ability to participate in graduate and undergraduate education. Candidates must fulfil the requirement of taking an introductory course in university pedagogy. Teaching assignments should not expand on the maximum 25% prolongation of the designated time for PhD studies. Candidates should be encouraged to locate parts of their education at a university abroad.

Obtaining a licentiate degree as part of the PhD degree is permitted. The licentiate degree consists of a course part consisting of between 30 to 60 university credits, and a dissertation part consisting of between 60 to 90 university credits, so that together they make up altogether 120 university credits.

The PhD degree consists in a course part consisting of between 60 to 90 university credits, of which 30 are mandatory, and a dissertation part consisting of between 150 and 180 university credits, so that together they make up 240 university credits.

4. Courses

The doctoral programme contains a mandatory package of 30 university credits.¹ Besides providing basic epistemological and methodological insights, both at a comprehensive level and for the particular research area, the complete set of courses offered are of great importance for the development of the programme's orientation and for defining the research area. The course package is divided between courses that are primarily based on lectures, seminars and literature, and courses organised as seminars and workshops that focus on emerging analytical and experimental methods in alignment with the progress of the individual research projects carried out within the programme. Included in the course package is an introductory course to university teaching with a special focus on art and design.

The current list of courses is to be found on the webpage of the doctoral programme. The course list is subject to annual revisions by the programme council. The mandatory courses are held every two years, or more frequently if necessary. In some cases the teaching may be coordinated with similar courses at an advanced level, where the difference in course level is regulated through the number of lectures or seminars and the quality requirements for assignments. The examination on PhD level is generally characterised by higher requirements in terms of independence and creativity. Courses held within the programme are registered at KTH but are given partly or entirely both at KTH and Konstfack. PhD candidates can also take certified courses at other universities.

4.1 Mandatory courses (30 credits)

Epistemology and research methods in Art, Technology and Design, 7,5 credits

The course provides a basic introduction to epistemology and an orientation to knowledge paradigms in different scientific traditions; advanced epistemological and methodological insights in current research in the subject area Art, Technology and Design; and discusses cases of radical rethinking concerning the relation between the individual, society and the environment from the basis of historical and philosophical examples.

Concepts, theories and experimental practices in Art, Technology and Design, 7,5 credits

The course provides an orientation in the emerging field of research known internationally in terms of "practice-based research in the arts", "arts and technology studies" and "research by design", and draws on completed Ph D projects to advance in-depth understandings of methods of investigation and presentation of findings that is of particular interest to the profile of the subject area. A particular emphasis is put on different forms of academic writing and examples of revaluation and experimental approaches are highlighted and discussed.

Introduction to university teaching: Art and design education, 5 credits

The course provides a basic orientation in university pedagogy and specialisation in teaching methods for education in art and design.

Rethinking research practices in Art, Technology and Design, 10 credits

The course is carried out as seminars and/or workshops based on the on-going research projects of the course participants. The course carries two equally important elements. One concerns the material and performative aspects and matters to do with the artistic articulation pertaining to individual PhD projects that are discussed by reference to detailed studies of relevant cases within the subject area. The other element puts emphasis on the discursive aspects of the participants' work, discussing the framework of their PhD projects in terms of

¹ The mandatory courses proposed here are yet to be developed, and must be formalised as part of the upcoming institution process of the programme.

criticality, theory, relevance and significance by reference to selected key writings in the area. Results and discussions generated by the course are documented in a digital archive.

4.2 Elective courses (30-60 credits for PhD degree)

Additional courses are set individually in relation to the specific PhD candidate's knowledge needs. These courses can be offered at Konstfack or KTH within the framework of the doctoral programme and/or in collaboration with courses on advanced level at these universities. The PhD candidate may also follow course at other universities in Sweden or abroad. The course plan is regulated in the individual study plan.

5. Seminars, exhibitions and conferences

The PhD candidate is expected to take an active part in seminars and other programme activities throughout his or her time of education. The programme organises a yearly event with presentations of the participants' work in the form of lectures, performances, exhibitions or as otherwise appropriate. In these activities all PhD students within the programme are expected to participate. A regular participation in national and international symposia and conferences is considered an important prerequisite for pursuing a PhD education within the programme.

6. Thesis / Dissertation

The thesis / dissertation is an obligatory part of the education at doctoral level. The aim of the education is to provide PhD candidates with the proper training that enables him or her to make independent contributions to scientific and artistic collaborations within and beyond the research area.

The outset for thesis and dissertation work within the programme are different practices for investigation and artistic articulation/formulations, both material and written, which are presented on an on-going basis throughout the doctoral studies in e.g. exhibitions, texts, and published articles. The public defence can either be based on a dissertation composed of parts / compilations, provided these are assessed as holding a sufficiently high quality, and are held together by a frame narrative; alternatively from the basis of a dissertation consisting of a coherent final presentation of research result in the form of a monograph. It is essential that the work manifests a capacity for reflection that relates to cutting edge research in the subject area and current discussions in the field.

The thesis / dissertation should contain new research findings developed by the PhD candidate, or in collaboration with others, through theoretical, artistic and/or empirical research activities. The scope of the thesis / dissertation is not regulated in terms of word count or similar measures. By way of useful comparison, a measure applied to other programmes at KTH is relevant: "The scientific results shall for doctoral degree meet the quality criteria for publication of at least four articles in internationally recognized journals with referee system (for licentiate degree at least two articles) or equivalent." A defining element of this doctoral programme is that scientific results, besides their publication in e.g. peer-reviewed articles, may well be developed and communicated in other forms and media such as exhibitions, enactments, prototypes, performances, film, etc. For any such cases, adequate documentation and discussion on result are of utmost importance.

The theses / dissertations at KTH are normally written in English, but if the subject area motivates that the thesis / dissertation is written in another language, a special permit may be issued by the Director of doctoral studies.

7. Prerequisites for admittance and recommended qualifications

KTH's general prerequisites for admittance to doctoral programmes are applied.

The primary target group is students with a degree in Architecture, Civil engineering, Master degree from Design, Art, Arts or Technical formation. Other educational backgrounds may also be suitable.

Recruitment / announcement and admittance of PhD candidates according to KTH's rules:

<http://intra.kth.se/regelverk/utbildning-forskning/forskarutbildning/antagning/antagningsordning-for-utbildning-pa-forskarniva-vid-kth-1.27236>

8. Rules for selection of applicants

The programme will recruit PhD candidates both through announcement of PhD positions and through scholarships. The admittance is preceded by obligatory interviews. In general, PhD candidates to the programme should be strongly motivated for PhD studies, have the ability to work independently and for critical analysis, as well as a good capacity for collaboration and communication. The applicant should have good knowledge of both spoken and written English. Knowledge in Swedish is not necessary, but may facilitate the successful completion of the PhD studies. More specifically, PhD candidates in the programme are expected to have the capacity for critical reflection around their choice of research in relation to topics of broader relevance for society; to perspectival encounters between the subject areas art, technology and design; and to central questions provoked by the necessary shift towards a more sustainable society.

9. Examination

Courses on doctoral level should include either written or oral tests on knowledge. The examination should be designed to ensure that the examiner is convinced about the student's capacity to absorb the course content.

Regarding the rules for examination of the thesis/dissertation part of licentiate and doctoral degree, see KTH's general rules.

Attachment 2: Supervisors

Main supervisors

Professors and associate professors at KTH and Konstfack with a PhD degree, good experience of supervising and research profile within the profile of the programme.²

Tim Anstey (KTH-ABE)
Roberto Bresin (KTH-CSC)
Magnus Bårtås (Konstfack)
Leif Dahlberg (KTH-CSC)
Katja Grillner (KTH-ABE)
Annette Göthblad (Konstfack)
Hedvig Hedqvist, (KTH-CSC)
Björn Hellström (Konstfack)
Anders Houltz, (KTH-ABE)
Rolf Hughes (Konstfack)
Kia Höök, (KTH-CSC)
Sara Ilstedt Hjelm (KTH-ITM)
Alex Jonsson, (KTH-CSC)
Gunnar Karlsson, (KTH-EE)
Kaj Lindecrantz, (KTH-STH)
Bruce Lyne (KTH-CHE)
Helena Mattsson (KTH-ABE)
Håkan Nilsson (Konstfack)
Margareta Norell-Bergendahl (KTH-ITM)
Magnus Rönn (KTH-ABE)
Sverker Sörlin (KTH-ABE)
Christina Zetterlund (Konstfack)
Bo Westerlund (Konstfack)
Nina Wormbs (KTH-ABE)

Assistant supervisors

This list could be made very extensive since the choice of assistant supervisors is frequently governed by the specific needs of expertise on the basis of individual PhD projects. The list should therefore be understood as additional examples of teachers and researchers who are active at KTH and Konstfack and whose profile and experience make them eligible for supervision assignment; frequently these will also in the near future become associate professors and be able to perform as main supervisors in the programme:

Gunilla Bandolin (Konstfack)
Ulrika Karlsson (KTH-ABE)
Hélène Frichot (KTH-ABE)
Charlie Gullström (KTH-ABE)
Catharina Gabrielsson (KTH-ABE)

² The lists of main supervisors and assistant supervisors are the result of a preliminary inventory at KTH and Konstfack. During the next phase of the development of the programme potential supervisors should be invited to a joint starting-up work during which the list will be up-dated.

Ramia Mazé (Konstfack)
Jonas Runberger (KTH-ABE)
Meike Schalk (KTH-ABE)
Oliver Tessman (KTH-ABE)
Gerhard Eckel (KTH-CSC)