



UPPSALA
UNIVERSITET

Translation of Subject Curriculum (Study Plan) for Third-cycle (PhD) Education

Engineering Sciences (without specialization)

Swedish title: Teknisk fysik (utan inriktning)

TNTEKF16 (Department of Materials Science and Engineering)

Swedish curriculum adopted by the Board of the Faculty of Science and Technology (Third-cycle Educational Board) on 2008-07-02.
Revised 2014-12-12 and 2020-01-15.
Translation approved 2020-01-15.

The Study Plan for third-cycle studies consists of three parts: a general part, this subject specific study plan, and each doctoral student's individual study plan.

Objective

The doctoral student should by means of supervision and thesis work be well prepared to pursue research on a scientific sound basis. The doctoral student shall after accomplished third-cycle education be familiar with scientific methods within the subject, reach deep knowledge within the specific research area for the thesis, and broad knowledge within a wider frame related to the thesis, which also may include relevant knowledge of applications in industry and other societal institutions and organizations.

The doctoral student shall also be able to present her/his own goals and results orally and in writing to different target groups in English and, in the case of Swedish-speaking doctoral students, in Swedish.

Subject description

The subject engineering physics comprises a broad research field where content emanates from needs of technical solutions in different sectors in society. The subject is interdisciplinary with integration of physics, but also chemistry, biology and life science. The research area can also be boarder-crossing to social sciences such as economics, political science and sociology. At Uppsala University there is a number of specializations in engineering physics with their own study plans. In those cases when the doctoral studies do not



UPPSALA
UNIVERSITET

follow one of these specializations, admission to doctoral studies can be made to engineering physics without specialization. The need for engineering physics without specialization can be needed for doctoral students in graduate schools or research centers with a thematic or other type of interdisciplinary character.

Eligibility

Basic Eligibility

The basic eligibility for third-cycle education is described in the general part of the curriculum statement.

Special Eligibility

Special eligibility is assigned to a candidate who has taken courses within all relevant areas in the subject with sufficient breadth and depth. Thus, special eligibility is considered a candidate with one of the following:

- a) has obtained a Master's degree in engineering (Swedish "Civilingenjörsexamen") from a Swedish Technical University/College and hence taken courses within the relevant areas of the subject
- b) in a different way has gained knowledge principally to the same extent as in a), irrespectively of the country of study

Admission

Applicants for third-cycle program in engineering sciences must file an application to the head of the Department of engineering sciences. Admissions to places in third-cycle programs take place normally six times per year.

Upon admission to postgraduate education, the Swedish title of the degree is to be specified in the application. According to decision (TEKNAT 2012/215), postgraduate education in Engineering Sciences (without specialization) shall lead to a *teknologie doktorsexamen*. The English rendering will be a licentiate/doctorate degree of philosophy.

In connection with the admission it must be stated how the doctoral student plans to finance both her/his personal maintenance and her/his research.



UPPSALA
UNIVERSITET

Program structure

In connection with the admission, each doctoral student and her/his supervisor shall draw up an individual study plan after consultation with the professor in charge of the third-cycle program. The plan is to be approved by the head of the department (by delegation of the Faculty Board), in connection with the admission.

The individual study plan shall be reviewed jointly by the doctoral student and her/his supervisor, annually, and be provided with a summary of the achieved results and the plans for the coming year. Significant changes and any disagreement on the individual study plan shall be reported to the head of the department or, if deemed necessary, to the Board for Third-cycle education.

Courses

The third-cycle studies may include different kinds of courses, such as lectures, literature studies, practical training, field studies, etc. The courses are intended to provide a wider insight into the subject as a complement to the competence acquired during research. The courses should also support the learning of skills in methodology, research presentation (oral and written) and publication.

A course in research ethics of at least 2 higher education credits is mandatory for licentiate and doctoral degree. A course in university educational theory is also mandatory for doctoral students who teach at basic and advanced level.

The doctoral students within the subject are recommended to take courses in scientific writing and an introduction course to doctoral studies.

Requirements for doctoral degree

The requirements for the doctoral degree consist of passed examinations in the courses included in the approved individual study plan of each doctoral student, as well as a passed public defense of the degree project. The studies awarded a doctoral degree comprise 240 higher education credits (four years of full-time studies), of which the doctoral thesis comprises a minimum of 120 higher education credits and the course part a minimum of 60 higher education credits.



UPPSALA
UNIVERSITET

Requirements for licentiate degree

A doctoral student who has acquired at least 120 higher education credits (two years of full-time studies) is eligible for a licentiate degree. The requirements consist of passing the examinations included in the program stage and receiving a passing grade on an academic paper of at least 60 higher education credits. The part of the course amounts to a minimum of 30 higher education credits.

Other

Research in engineering physics without specialization almost always involves collaboration with researchers from other disciplines. Good ability to cooperate and learn relevant knowledge from other disciplines is therefore necessary. The relevance of the research for societal needs also require good ability to communicate scientific results so that stakeholders outside the academia can assimilate new knowledge.

Further information can be obtained from <http://www.teknik.uu.se/>.