

This document is a translation of the Swedish original. In the event of any discrepancy between the translated document and the Swedish original, the original shall prevail.

General syllabus for doctoral (third-cycle) studies in Engineering Acoustics at Luleå University of Technology

Decided by the Chair of the Board of Faculty of Science and Technology on 17 January 2023.

1. Subject description

Swedish name: Teknisk akustik

English name: Engineering Acoustics

Engineering Acoustics comprise method development and modelling regarding generation, propagation, perception and effects of sound and vibration. Applications are mainly within automotive, residential environment and industrial processes.

2. Programme aim and intended learning outcome

The aim of the doctoral (third-cycle) studies in Engineering Acoustics at the University is to give the doctoral student specialised knowledge in Engineering Acoustics, in-depth knowledge of different research methods and a good understanding of the challenges related to research and its practical application. The overall objective of the programme is that the doctoral student develops into a critical and autonomous researcher in Engineering Acoustics, able to plan and carry out research projects. The doctoral student shall fulfil all the qualitative targets specified in the Higher Education Ordinance as well as in the locally decided qualitative targets, if any (see attached Annex A).

3. Admission requirements and selection

3.1 General entry requirements

An applicant meets the general entry requirements for doctoral (third-cycle) studies if he or she has been awarded a Master's (second-cycle) qualification, has satisfied the requirements for courses comprising at least 240 credits, of which at least 60 second-cycle credits, or has acquired substantially equivalent knowledge in another way, in Sweden or elsewhere (Higher Education Ordinance (2010:1064) Chapter 7 Section 39).

3.2 Specific entry requirements

In addition to the requirement for basic qualifications, Master of Engineering Science or equivalent with specializations related to sound and vibration, dynamics, applied mechanics, applied physics, electro engineering or signal analysis.

3.3 Selection

In selecting among applicants who meet the requirements, their ability to benefit from the course or the study programme shall be considered. However, the fact that an applicant may be credited

For each subject in which doctoral (third-cycle) courses and study programmes are offered, a general study syllabus is required (Higher Education Ordinance (2010:1064) Chapter 6 Section 26). The general study syllabus must include the details specified in this template. The admission of a doctoral student presupposes that the Chair of the relevant Faculty Board has adopted a general study syllabus for the doctoral (third-cycle) subject area. The relevant Head of Department is responsible for proposing a general study syllabus to the Chair of the relevant Faculty Board in accordance with the established template. Text in italics describes how to complete the template and should thereafter be deleted.

for previous courses and study programmes or for professional or vocational experience may not alone give the applicant priority over other applicants (Higher Education Ordinance (2010:1064) Chapter 7 Section 41). The University's local guidelines in the Admissions procedure for doctoral (third-cycle) studies must also be applied.

The following criteria will be used in the selection of applicants for doctoral (third-cycle) studies in Engineering Acoustics. Experience of education on advanced level, professional experience within the areas of: acoustics, vibrations, society noise, audiology, audio engineering, psychoacoustics, signal analysis, electro, sonochemistry and fluid mechanics.

4. The degree

The doctoral (third-cycle) studies lead to a Degree of Doctor. Within Engineering acoustics, a student admitted to doctoral studies has the right to be awarded a licentiate degree after having completed at least 120 credits of the programme leading to a Degree of Doctor.

4.1 Degree requirements

For a Degree of Doctor, the doctoral student shall

- have been awarded a pass grade for courses of at least at least 60 credits
- have been awarded a pass grade for a research thesis (doctoral thesis) of at least 150 credits.

The thesis and the courses shall together amount to 240 credits for a Degree of Doctor.

For a Degree of Licentiate, the doctoral student shall

- have been awarded a pass grade for courses of at least at least 30 credits.
- have been awarded a pass grade for a licentiate thesis of at least at least 75 credits.

The thesis and the courses shall together amount to 120 credits for a Degree of Licentiate.

4.2 Titles of degree

- After the completion of the Degree of Doctor in Engineering Acoustics the doctoral student is awarded the title Doctor of Philosophy in Science
- [After the completion of the Degree of Licentiate in Engineering Acoustics, the doctoral student is awarded the title Degree of Licentiate of Science

A request of a title of degree other than the stipulated may be submitted in accordance with laid down guidelines.

5. Programme structure and implementation

5.1 Programme scope and structure

The doctoral (third-cycle) programme includes two blocs; courses and thesis work. The programme comprises four years (two years for the licentiate degree). In case the doctoral student has a doctoral studentship and carries out departmental duties to a certain extent (no more than 20% of the whole programme), a corresponding prolonged period may be approved.

5.2 Individual study plan and supervision

For each subject in which doctoral (third-cycle) courses and study programmes are offered, a general study syllabus is required (Higher Education Ordinance (2010:1064) Chapter 6 Section 26). The general study syllabus must include the details specified in this template. The admission of a doctoral student presupposes that the Chair of the relevant Faculty Board has adopted a general study syllabus for the doctoral (third-cycle) subject area. The relevant Head of Department is responsible for proposing a general study syllabus to the Chair of the relevant Faculty Board in accordance with the established template. Text in italics describes how to complete the template and should thereafter be deleted.

An individual study plan outlining the implementation of the studies is drawn up for each doctoral student. The plan is established in consultation with the supervisor is decided by the Head of Department by delegation of the Vice-Chancellor. The plan is reviewed and revised at least once a year.

The Head of Department shall appoint at least two supervisors, one of whom is appointed principal supervisor, for each doctoral student. The person appointed principal supervisor shall have at least qualifications required for appointment as a docent and be employed by the University. A principal supervisor who no longer meets the job requirements may continue as supervisor until the doctoral student completes his or her studies, by an individual agreement with the relevant department. The doctoral student is entitled to supervision during the studies, unless the Vice-Chancellor has decided otherwise in accordance with the Higher Education Ordinance (2010:1064) Chapter 6 Section 30. A doctoral student who so requests may have another supervisor (Higher Education Ordinance (2010:1064) Chapter 6 Section 28). The request does not need a justification.

5.3 Courses

The individual study plan shall specify the courses to be included in the doctoral student's education. The goal attainment is examined according to the examination procedure specified in the course syllabus. Credits may be transferred in accordance with the local guidelines in the Admissions procedure for doctoral (third-cycle) studies.

Examples of courses that should be included in the postgraduate education are Introduction to third-cycle studies, engineering acoustics, advanced structural acoustics and/or psychoacoustics, theory of science, scientific writing, experimental research planning and statistics, programming and/or Multiphysical simulation.

Knowledge regarding equality and research ethics is mandatory and available within the general syllabus.

5.4 Thesis

The thesis may take the form of either a single coherent work (a monographic thesis) or a compilation comprising a number of scientific articles interrelated by an introductory summary chapter (a compilation thesis). Quality and scope requirements for the research activities do not differ between the two alternatives. The scientific articles or, as appropriate, the monograph must be of such quality that they meet reasonable requirements for publication in a peer-reviewed scientific forum.

For the doctoral degree, a summary thesis is required containing a summary of the research work of at least 40 pages and at least four scientific articles, of which 2 are accepted, and at least one conference article presented at a scientific conference with proceedings. Alternatively, a monograph with a scope of at least 150 pages is required, as well as at least one published scientific article within the framework of the thesis work and at least one conference article presented at a scientific conference.

For each subject in which doctoral (third-cycle) courses and study programmes are offered, a general study syllabus is required (Higher Education Ordinance (2010:1064) Chapter 6 Section 26). The general study syllabus must include the details specified in this template. The admission of a doctoral student presupposes that the Chair of the relevant Faculty Board has adopted a general study syllabus for the doctoral (third-cycle) subject area. The relevant Head of Department is responsible for proposing a general study syllabus to the Chair of the relevant Faculty Board in accordance with the established template. Text in italics describes how to complete the template and should thereafter be deleted.

For the licentiate degree a summary of the research work of at least 20 pages and at least two scientific articles, of which one is accepted, and one conference article presented and published at a scientific conference, is required.

The introductory summary chapter shall include a separate section describing the doctoral student's contribution to the articles.

The doctoral thesis shall be defended at a public defence seminar. The grades for the thesis are either 'pass' or 'failed'. When grading the thesis, the content and the defence of thesis shall be taken into account. The grade of a doctoral thesis is decided by an examining committee, appointed anew for each thesis.

A doctoral student wanting to be awarded a Degree of Licentiate shall, after consultation with his or her supervisor, request approval from the responsible Head of Department. The doctoral student defends his or her licentiate thesis at a licentiate seminar after which the thesis is graded 'pass' or 'failed'. When grading the thesis, the content and the defence of the thesis is taken into account. An examiner, appointed by the Head of Department, grades the licentiate thesis.

6. Entry into effect and interim regulations

The previous general syllabus will cease to apply for third-cycle students who are admitted to studies at third-cycle level after 2023-01-17.

If agreed between the third-cycle student and the supervisors, the new general syllabus, LTU dnr 5165-2022, may be used as a steering document for a previously admitted third-cycle student.

It must be documented in the third-cycle student's individual study plan which general syllabus that applies.

For each subject in which doctoral (third-cycle) courses and study programmes are offered, a general study syllabus is required (Higher Education Ordinance (2010:1064) Chapter 6 Section 26). The general study syllabus must include the details specified in this template. The admission of a doctoral student presupposes that the Chair of the relevant Faculty Board has adopted a general study syllabus for the doctoral (third-cycle) subject area. The relevant Head of Department is responsible for proposing a general study syllabus to the Chair of the relevant Faculty Board in accordance with the established template. Text in italics describes how to complete the template and should thereafter be deleted.