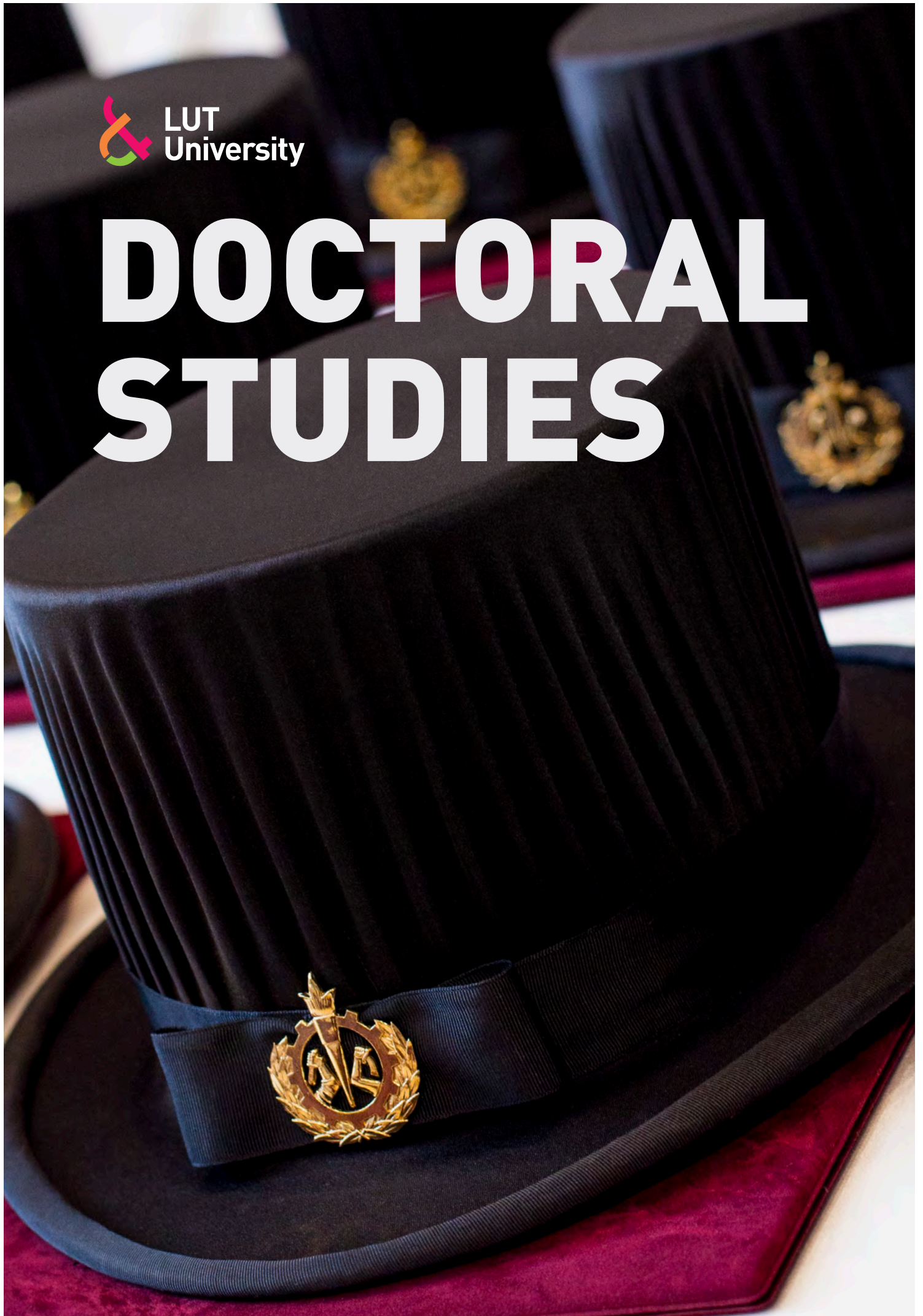


DOCTORAL STUDIES



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BE CURIOUS. BE ONE OF US.

LUT University has pioneered as a science university combining technology and business since 1969. LUT consistently places high in world university rankings.

Clean energy, water and air are life-giving resources for which we at LUT University seek new solutions with our expertise in technology, business and social sciences. We help society and businesses in their sustainable renewal. LUT University strongly promotes entrepreneurship stemming from its scientific research.

LUT University's international community consists of over 9,000 members. Our campuses are in Lappeenranta and Lahti, Finland. We are one of the world's top universities for climate action.

eLUT – student website

The eLUT website is a collection of all the practical information you need to know about your studies. There you can also find the most important news and current issues for students.

elut.lut.fi/en

LUT DOCTORAL SCHOOL PRINCIPLES IN BRIEF

Admission procedure and criteria

- » The procedure follows the same basic steps in all schools.
- » The admission criteria are transparent and informed in detail to potential applicants on the eLUT website for students.

Supervision

- » Doctoral students receive highly qualified supervision, which supports their work, helps them integrate into academia, and improves the general quality of dissertations and research.
- » The university organises training for supervisors annually.
- » At least two independent supervisors are appointed for each doctoral student, and a supervisory group is assigned where applicable.
- » It is essential to make sure that supervisors have enough time to allocate to the students they supervise and sufficient expertise in the research field in question.
- » A supervision plan is included in the doctoral study plan that applicants compile with their supervisors-to-be. In the supervision plan, the student and the supervisors agree on each party's rights, obligations, and practical issues regarding supervision.
- » It is the supervisors' duty to ensure that the student is familiar with the obligations and ethical practices related to the research process.

- » At least twice a year, the supervisors and the doctoral student have a target discussion, in which the student presents an updated doctoral study plan.
- » The supervisors and the student also go through the progress the student has made and agree on future targets for the next period. In addition, they fix an appointment for the next target discussion. A doctoral research assessment tool helps in target discussions.

Monitoring and support of studies

- » Doctoral studies are designed to be completed in a target time of three to four years.
- » Study attainments included in a doctoral degree may date back no more than seven years. On special grounds, the head of the doctoral programme may decide to approve older study attainments. Supplementary studies will not expire.
- » Part-time studies are also possible, in which case the duration of the studies is tailored to correspond to 3-4 years of full-time study. The doctoral study plan takes into consideration the expiry of studies after seven years.
- » Students update their original doctoral study plan regularly and maintain their personal study plan in the Sisu system. LUT Doctoral School verifies that the degree includes the required studies before the beginning of the dissertation process.
- » LUT Doctoral School supports networking between its students by offering courses and workshops they

can all take together. LUT's doctoral programmes promote cooperation with their national networks.

- » To enhance the internationalisation of doctoral students, LUT Doctoral School recommends for example international collaboration in publications and supervision arrangements, studying at partner universities and participating in research exchange.
- » All information on doctoral education, including the application process, is available in Finnish and English on the eLUT website for students.
- » The student services of LUT Doctoral School offers guidance for doctoral applicants and students. It works in close cooperation with the management and supervisors at LUT's schools.

Responsible conduct of research

- » The university offers training in research integrity for both students and supervisors.
- » The principles of the responsible conduct of research and of dealing with conflicts of interest must be followed at all stages of the dissertation process.
- » In handling alleged violations of the responsible conduct of research, the university observes the guidelines prepared by the Finnish National Board of Research Integrity TENK (RI-guidelines: The Finnish code of conduct for research integrity and procedures for handling alleged violations of research integrity in Finland).
- » The university has appointed research integrity advisers. They may also be contacted for an ethical review or statement.

Feedback

- » LUT Doctoral School gathers feedback from doctoral students during their studies. Doctoral graduates are

asked for feedback on the doctoral education and services offered by LUT University.

- » In addition, feedback is provided by doctoral student representatives of LUT Doctoral School steering group.
- » LUT Doctoral School steering group handles all feedback and agrees on the necessary actions to address it.
- » Possible requests for rectifications or complaints regarding studies are handled according to the LUT Degree Regulations.

Quality management

- » The university has common dissertation regulations.
- » LUT University's dissertation committee handles all dissertation manuscripts and decides on starting examination processes and appointing preliminary examiners according to LUT's selection principles.
- » The quality assessment of doctoral education is part of the external quality system audit of LUT University.

FURTHER INFORMATION:

elut.lut.fi/en/doctoral-studies



Jari Hämäläinen
Vice Rector,
research and innovation



LUT DOCTORAL SCHOOL

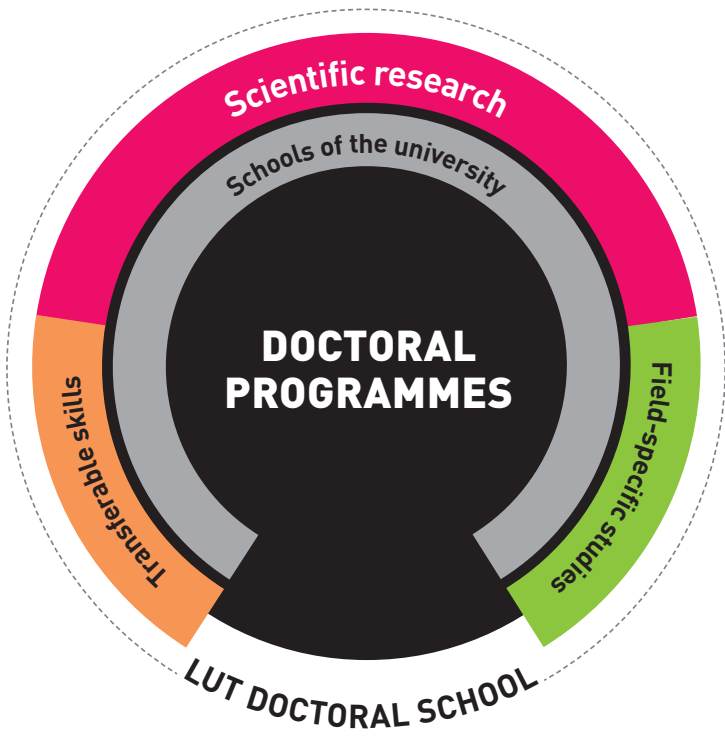
Aims and structure

The main objective of LUT Doctoral School (LUT DS) is to provide an environment for high-quality, research-oriented doctoral education for all LUT doctoral students. It facilitates the networking of its students by for example offering joint courses, lectures and workshops.

LUT DS consists of the university's doctoral programmes and operates at the university level. It spreads good practices among the doctoral programmes and gives recommendations concerning doctoral education. LUT DS is headed by the vice rector for research and innovation together with the doctoral school steering group.

The university's three schools are home to the doctoral programmes covering all of the disciplines of the university. The schools play an important role in the admission procedure and the dissertation process.

The doctoral programmes of the schools take care of the practical implementation of doctoral education and also participate in national doctoral education networks. The heads and vice-heads of the doctoral programmes are members of the doctoral school steering group.



1 GENERAL INFORMATION ON DOCTORAL STUDIES

Doctoral studies provide students with in-depth knowledge of their research field, enabling them to apply scientific research methods and generate new scientific knowledge independently and with due criticism. In addition to scientific research and studies, doctoral students will further strengthen their transferable skills from previous studies.

Completing a doctoral degree at LUT University

Education leading to a doctoral degree at LUT University is planned and organised for specific research fields. The doctoral degree requires approximately 3-4 years of full-time studies. The licentiate degree usually requires two years of full-time studies. The scope of doctoral studies is 30 ECTS cr.

LUT AWARDS THE FOLLOWING POSTGRADUATE DEGREES:

- » Licentiate of Science (Technology), Doctor of Science (Technology)
- » Licentiate of Science (Economics and Business Administration), Doctor of Science (Economics and Business Administration)
- » Licentiate of Social Sciences, Doctor of Social Sciences
- » Doctor of Philosophy

DOCTORAL EDUCATION IS OFFERED IN THE FOLLOWING RESEARCH FIELDS:

- » Economics and Business Administration
- » Computational Science, Green Chemical Technology,

Industrial Engineering and Management, Social Sciences, Software Engineering, Technical Physics

- » Electrical Engineering, Energy Engineering, Energy Market and Solar Economy, Mechanical Engineering, Sustainability Science

Doctoral students choose their research field when they apply for the right to complete doctoral studies.

At least two supervisors are appointed for all doctoral candidates. The primary supervisor must be an LUT professor, LUT docent, LUT employee holding a docentship at another Finnish university or associate professor on the tenure track at LUT University. A person with a doctoral degree can be appointed as the second supervisor.

From application to graduation

The path towards a doctoral degree can be divided into three different sections:

- 1) applying for the right to study and starting studies
- 2) research work and completing studies
- 3) dissertation process.

It is essential to see the "big picture" from the very beginning so that the studies and research work can be scheduled without unintentional delays.

FURTHER INFORMATION:

elut.lut.fi/en/doctoral-studies

APPLYING FOR & STARTING STUDIES

ABOUT ONE MONTH

Discussion with the supervising professors concerning the start of doctoral studies and defining possible supplementary studies

Preparation of the application
➤ research plan
➤ doctoral study plan
➤ required attachments

Submission of the application

DECISION ON THE RIGHT TO STUDY

Research work and completing studies

Research work, publishing articles, attending conferences, possible exchange period abroad, completion of doctoral studies (30 ECTS cr)

WRITING OF DISSERTATION

Dissertation process

Submission of the manuscript
Dissertation Committee

Appointment of preliminary examiners
Dissertation Committee

Preliminary examination

Granting permission to print the dissertation, choosing the opponent(s) and custos
Academic Council

Assessment of the dissertation
Academic Council

Public examination of the dissertation

Publishing dissertation, press information

Custos and opponent will agree the date for the public examination.

DOCTORAL DEGREE

CONFERMENT CEREMONY

ABOUT 3-4 YEARS

ABOUT 3-4 MONTHS

2 ADMISSION, SUPERVISION AND FUNDING

LUT University aims to attract skilled, motivated students who have the aptitude for a career in research and other demanding expert tasks, who are committed to their doctoral studies and research and who have sufficient skills in research.

Admission criteria

- » A completed Master's or comparable degree in technology, business, social sciences, or another field of science which provides a sufficient basis for further studies.
- » An applicable education completed abroad which in the awarding country gives eligibility for corresponding higher education. As a rule, at least four-year education is required including a Master's thesis or corresponding final thesis.
- » Advanced studies completed in the field suitable for the dissertation research or equivalent information obtained otherwise. If needed, the doctoral programme may decide on possible supplementary studies for each case individually.

- » The foregoing also applies to applicants who have already obtained a doctoral or licentiate degree from another field of study. In addition, applicants must complete a sufficient amount of studies in their research field.
- » An applicant who has completed a licentiate degree in the same field is required only to complete a doctoral dissertation in the research field in question.

In addition to the educational background of the applicant, the following issues also have an impact on the selection of doctoral students:

- » the applicant's knowledge and skills (for example success in previous studies, sufficient language skills)
- » the research topic (relevance of the topic to the university's research strategy, quality and feasibility of the research plan)
- » the applicant's commitment to completing the degree
- » the academic supervision capacity



SUPERVISION

Finding supervisors

Each doctoral candidate is supervised by at least two supervisors, so one of the first tasks for applicants is to find supervisors for their doctoral studies. When applicants have an initial idea of their research topic, they should continue by collecting and reviewing information on the university and the research area in question. It is also useful to examine publications by the university's researchers to learn more about their research focuses.

Supervision plan

For the studies to progress smoothly, it is important to make sure that all parties involved understand the matters in the same way (the student, supervisors and other possible co-operating parties, for example the employer).

One aim of the supervision plan is to describe the responsibilities of all parties and to help to avoid possible pitfalls especially in practical issues.

FUNDING

Doctoral students have different alternatives to finance their studies. Common solutions include an employment relationship at the university and/or applying for different

grants and scholarships. It is essential to discuss funding issues with the supervisors at the very beginning of the application process.

It is also possible to combine doctoral studies with work outside of the university. However, this is often the most demanding way to complete the degree due to the limited possibility to concentrate on research. In such cases, it is extremely important to negotiate with the employer and the supervisors about how to allocate time for doctoral research and about other practical issues.

APPLICATION PROCEDURE

After initial preparation and contact with the university, applicants get in touch with their supervisors-to-be to settle basic issues such as supervision, funding and the choice of the research field. With their supervisors, applicants prepare a doctoral study plan which is appended to the application.

More information on the specific requirements of LUT's doctoral programmes and research fields and on submitting an application is available in eLUT.

FURTHER INFORMATION:

elut.lut.fi > Doctoral studies >

Application processes of doctoral programmes





3 STUDIES AND RESEARCH

DOCTORAL STUDIES

Doctoral students complete their studies (a total of 30 ECTS cr) for example in the form of doctoral-level courses offered by LUT/other universities, doctoral training network seminars, literature studies and also studies that develop transferable skills necessary for a researcher.

When starting the journey towards a doctorate, it is useful to go through some dissertations in the field in question to learn what is expected from a dissertation. Additionally, doctoral students should attend public examinations of dissertations.

Students update and check their doctoral study plans regularly with the supervisors. The final check of doctoral studies is done by LUT Doctoral School before the

dissertation manuscript is submitted for its preliminary examination.

Meetings between doctoral students and their supervisors deal with the student's research and study achievements. It is also essential to define the future steps and set the next appointment.

All doctoral students are encouraged to include an exchange period or research visits abroad in their doctoral studies. In addition, attending international conferences or writing joint publications are ways of getting international experience and creating useful networks.

FURTHER INFORMATION:

elut.lut.fi > **Doctoral studies** > **Planning your studies**

RESEARCH PRACTICE

LUT University requires all researchers to comply with good scientific practice when conducting or publishing research. The university has issued the LUT Code of Conduct, the purpose of which is to assure that each member of the LUT community is aware of the essential requirements of for example legislation, agreements and ethics.

Through the LUT Code of Conduct, the university is also committed to the guidelines for the responsible code of conduct for research integrity and for handling alleged violations of research integrity. The guidelines have been produced by the Finnish National Board of Research Integrity. The guidelines have been produced by the Finnish Advisory Board on Research Integrity. The document defines good scientific practice and its violations.

Research articles should be published in top international scientific journals. In its strategy LUT is also committed to promote open science and increase the number of scientific co-authored publications.

All manuscripts of dissertations are checked with Turnitin, which is a tool for checking similarities between the submitted text and references in the database. In addition, it can be used for guiding academic writing. The similarity

check and the interpretation of the related report have to be done before starting the dissertation process.

DISSERTATION

A dissertation can be a monograph or an article-based dissertation consisting of refereed scientific publications on the research topic and a summary of them.

A dissertation must contribute new scientific knowledge to its field. It also has to demonstrate the author's knowledge and capability to apply scientific methods of the research area independently and with due criticism. The author's contribution must be clearly stated and sufficient.

ACADEMIC LIBRARY

LUT Academic Library has an extensive collection of literature titles and journals, both in print and in electronic format.

The library helps doctoral students with issues such as information retrieval, reference management systems, copyright matters, and publishing.

FURTHER INFORMATION:

elut.lut.fi > [Study guidance and support services](#) > [LUT Academic Library](#)

4 DISSERTATION PROCESS

The examination of a doctoral dissertation is a two-stage process including a preliminary examination and a public examination. All dissertations published at LUT follow the LUT dissertation regulations.

FURTHER INFORMATION:

elut.lut.fi > [Doctoral studies](#) > [Dissertation process](#)

DISSERTATION COMMITTEE

LUT's dissertation committee has representatives from all LUT schools. It makes decisions to initiate the dissertation process and appoint preliminary examiners.

PRELIMINARY EXAMINATION

The purpose of the preliminary examination is to establish whether the manuscript fulfils the academic requirements. The dissertation may be submitted

for preliminary examination once the author and the supervisors consider it ready. The preliminary examiners are not expected to do the work of the supervisors, but they may provide valuable comments and suggestions for the improvement of the dissertation. There are criteria concerning the selection of preliminary examiners.

PERMISSION TO PRINT AND CHOICE OF OPPONENT(S)

Based on the statements from the preliminary examiners, the academic council decides on granting permission to print the dissertation and also on appointing the opponent(s) for the public examination. There are criteria concerning the selection of opponents.

In addition to the opponent(s), the academic council appoints the custos (chair) for the public examination, who is usually the coordinating supervisor of the dissertation.





PUBLIC EXAMINATION AND ASSESSMENT

The dissertation will be defended in a public examination, which is open to the general audience as well. After the opening words of the custos and the lectio praecursoria given by the doctoral candidate, the opponent (or one of the opponents) first gives a short oral statement concerning the position and the scientific significance of the dissertation in its field. After this, the doctoral dissertation is examined and the opponents pose the doctoral candidate both general and detailed questions concerning the work. The examination usually takes two to three hours.

At the end of the public examination, the opponent (or one of the opponents) orally presents a final statement evaluating

- » the merits and the deficiencies of the work, taking into account its scientific novelty value
- » the way the work has been carried out
- » the results and documentation
- » the ability of the doctoral candidate to defend his or her work at the public examination.

After the public examination, the opponents prepare a written statement on the dissertation. The final statement shall be closed by grading the dissertation

(pass or pass with distinction). Based on the final statement(s), the academic council decides whether the doctoral dissertation can be approved and gives it a grade.

GRADUATION

On the basis of the dissertation approved by the academic council and on the doctoral studies completed, LUT's rector approves the doctorate. The certificates of Doctor of Science (Technology), Doctor of Science (Economics and Business Administration), Doctor of Social Sciences and Doctor of Philosophy entitle a person to the corresponding doctor's degree.

CONFERMENT CEREMONY

At regular intervals the university arranges a conferment ceremony at which doctors are awarded the right to wear the doctoral regalia: the doctoral hat and sword (the latter only for those with a doctorate in business administration, social sciences or philosophy).

The right to wear the regalia can be acquired only by attending the conferment ceremony.

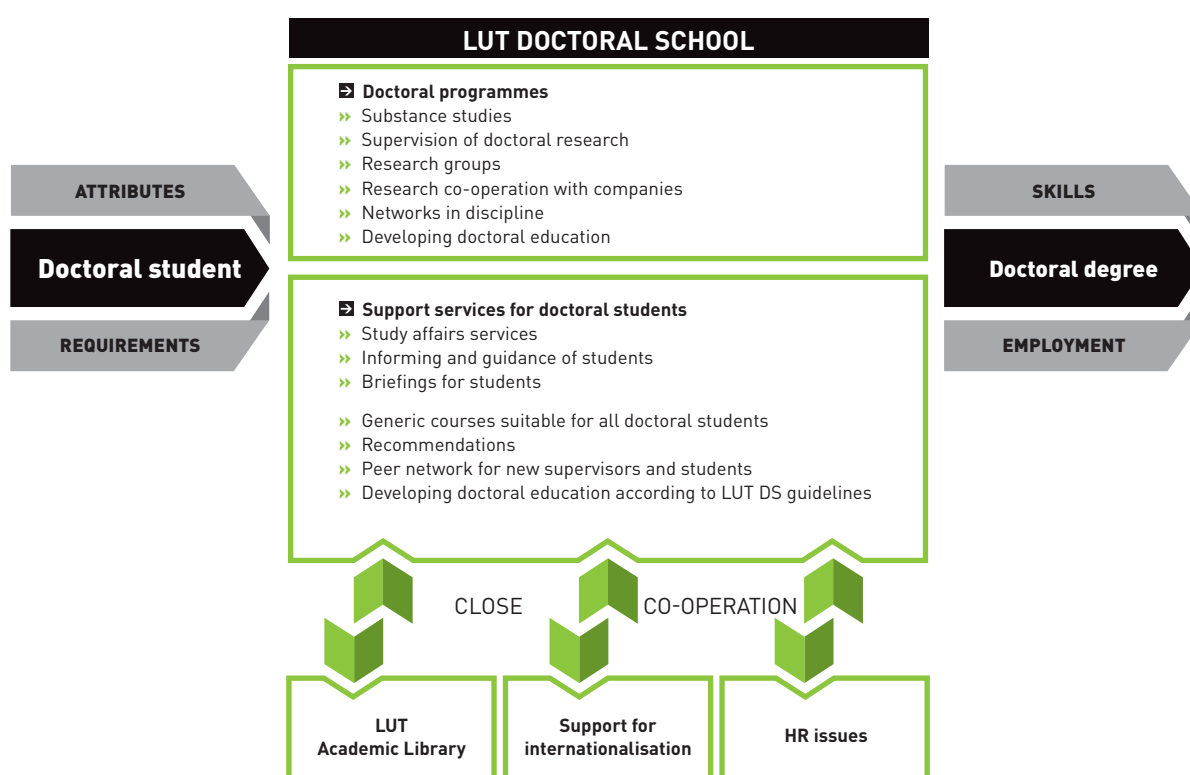
FURTHER INFORMATION:

elut.lut.fi > Doctoral studies > Graduation

5 SUPPORT FOR DOCTORAL STUDENTS

LUT Doctoral School together with the doctoral programmes offers guidance and support for doctoral students. The doctoral programmes are responsible for supervision and education in their own field.

LUT DS coordinates doctoral education at the university and co-operates with the schools and doctoral programmes of the university in issues connected to doctoral studies.



The student services of LUT Doctoral School help applicants and doctoral students with

- » applications for doctoral studies
- » study-related issues
- » changing/adding a supervisor

and offers guidance on

- » submitting a dissertation manuscript to the dissertation committee
- » appointing preliminary examiners
- » obtaining permission to print a dissertation
- » appointing opponents
- » the approval and grading of a dissertation
- » degree certificates and graduation.

FURTHER INFORMATION:

elut.lut.fi > Doctoral studies > Study guidance and feedback - Doctoral studies



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