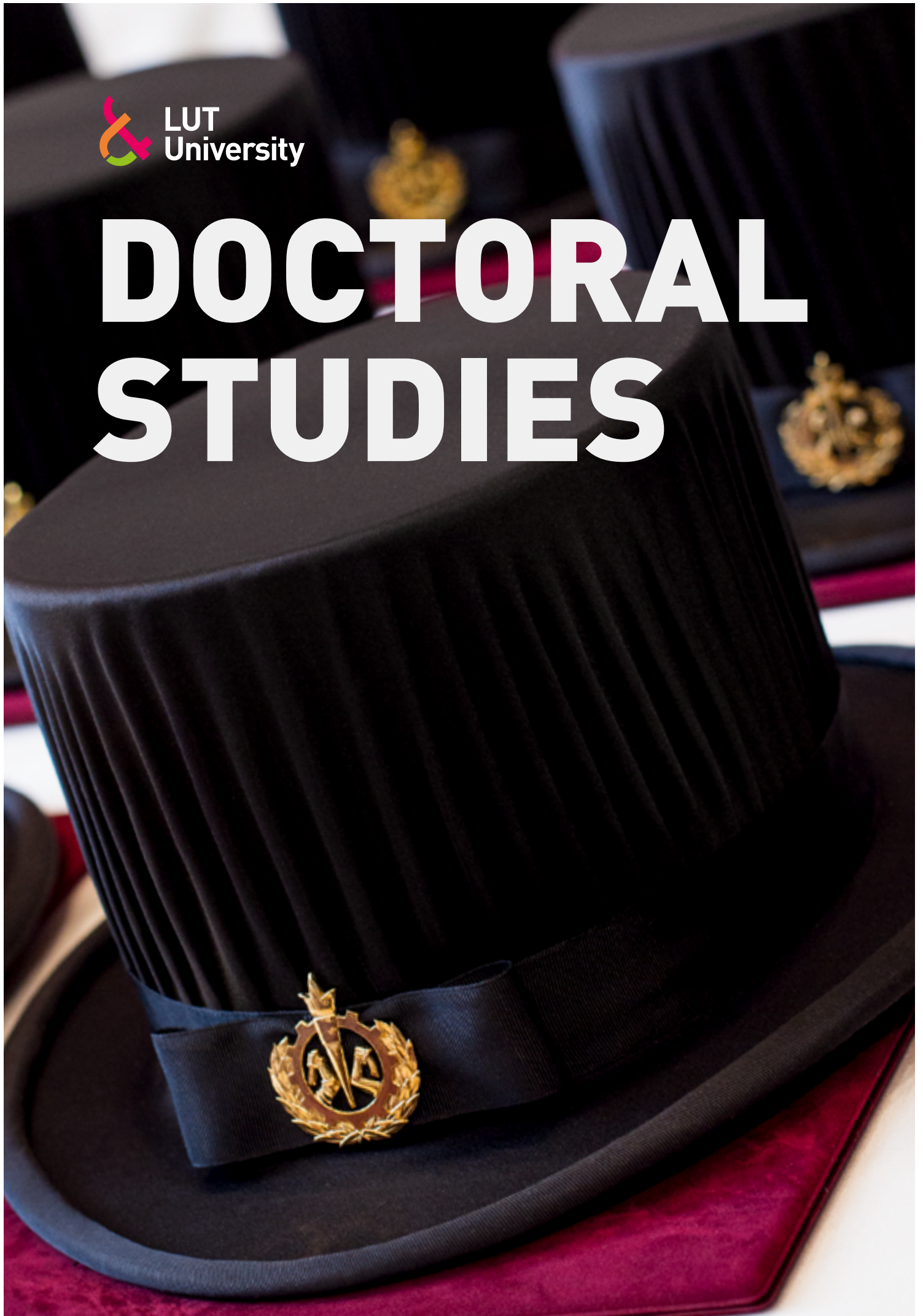


DOCTORAL STUDIES



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BE CURIOUS. BE ONE OF US.

LUT University has pioneered as a science university combining technology and business since 1969. It has been recognised in international rankings as one of the world's top universities.

Clean energy and water, a circular economy and sustainable business are pivotal questions for humankind. LUT University applies its expertise in technology and business to seek solutions to these questions. We help society and businesses in their sustainable renewal.

LUT University strongly promotes entrepreneurship stemming from its scientific research.

LUT University's international science community consists of 6 500 students and experts. Our campuses are in Lappeenranta and Lahti, Finland. We are one of the world's top 10 universities for climate action.

eLUT – student portal

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

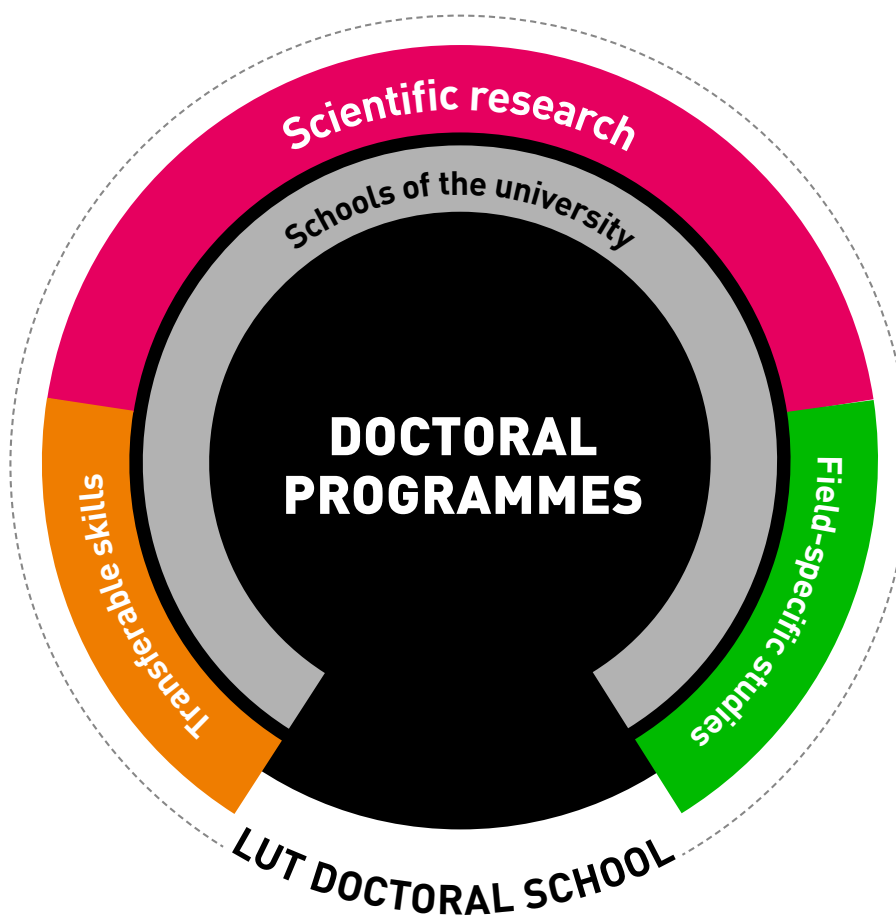
Aims and structure

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.



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 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 study and research 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 study and research 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 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 based on a proposal by the coordinating supervisor. Supplementary studies will not expire.
- » Part-time studies are also possible, in which case the duration of the studies is tailored to correspond to four years of full-time study. The study plan takes into consideration the expiry of studies after seven years.
- » Students update their original study and research 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.
- » LUT Doctoral School offers study services and 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 their responsible conduct of research, the university observes the guidelines prepared by the Finnish Advisory Board on Research Integrity (RCR-guidelines: Responsible conduct of research and procedures for handling allegations of misconduct in Finland).
- » The university has appointed a research integrity advisor. The advisor may also be contacted for an ethical review or statement.

Feedback

- » Every other year, LUT Doctoral School gathers feedback from doctoral students on supervision and 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

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 four years of full-time studies. The licentiate degree usually requires two years of full-time studies. The scope of doctoral studies is 40 ECTS credits.

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)
- » 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, 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, an LUT employee holding a docentship at another university or an 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

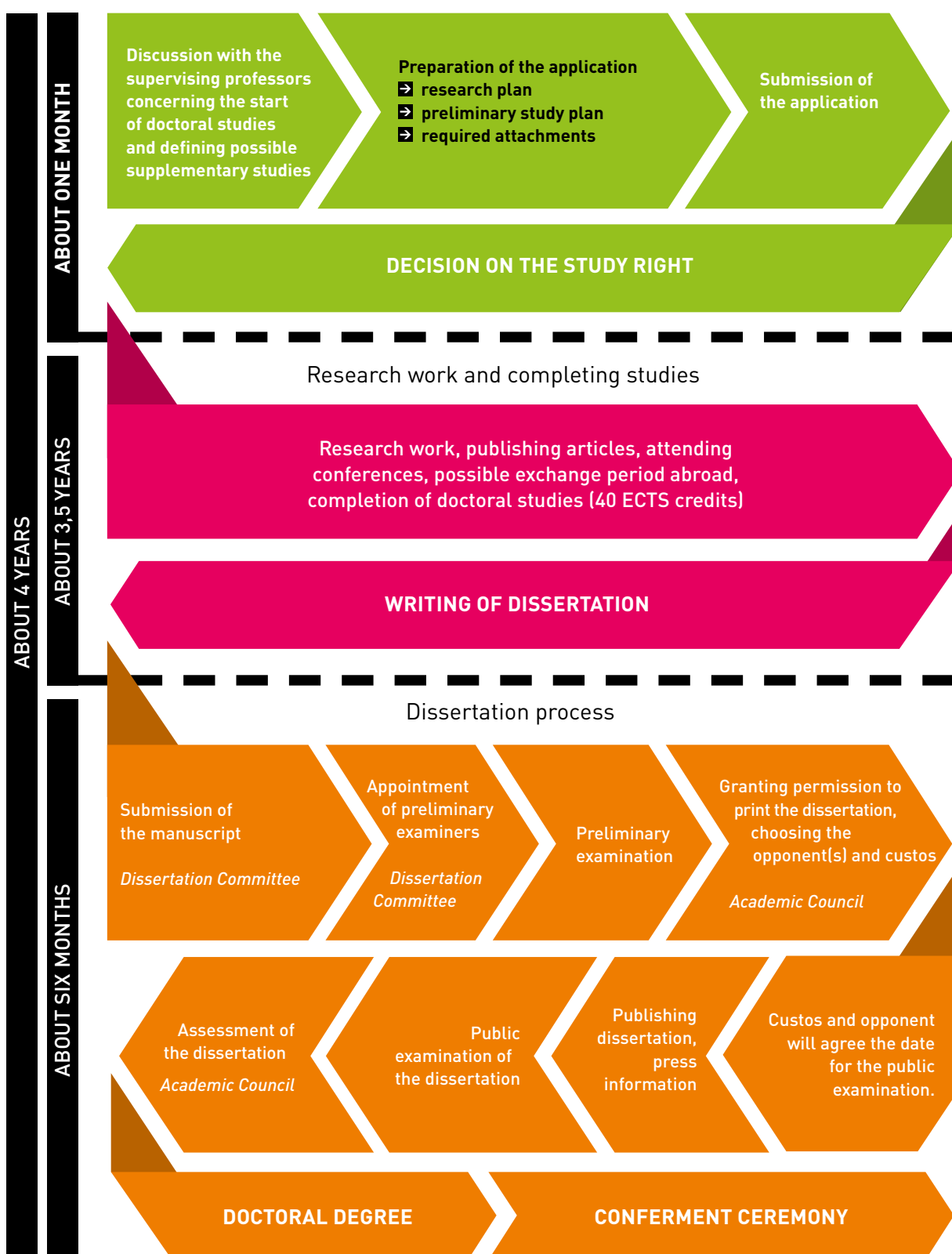
The path towards a doctoral degree can be divided into three different sections:

- 1) applying to 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.fi/en/doctoral-studies

APPLYING FOR & STARTING STUDIES



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, 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 research field or equivalent information obtained otherwise. If the applicant has not completed the required Master's level (advanced) courses, the doctoral programme decides 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 and/or financial resources

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 research staff 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.

FURTHER INFORMATION:

[elut.fi > Doctoral studies >](#)

[Application processes of doctoral programmes >](#)

[Application and attachments](#)

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 postgraduate study plan which is appended to the application.

The plan includes

- » a research plan
- » a plan for publication, financing and supervision
- » a plan for doctoral studies
- » a career plan

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.fi > Doctoral studies >](#)

[Application processes of doctoral programmes](#)

3 STUDIES AND RESEARCH

DOCTORAL STUDIES

Doctoral students complete their studies (a total of 40 ECTS credits) for example in the form of doctoral programme courses or other postgraduate courses, courses offered by LUT or another university or by taking examinations on scientific literature in the field.

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 study and research 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 conduct of research and for handling alleged misconduct. 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 classified by the Finnish Publication Forum (referred to in Finnish as JUFO). The aim of the Publication Forum has been to create a system in which scientific publication activity can be evaluated on the basis of quality, not only quantity. The classification is suited for the evaluation of large publication quantities, such as all works published by a university, but not for the evaluation of an individual researcher. It can also be used for comparisons between publications in the same discipline but not for interdisciplinary comparisons.

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 plagiarism 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. Regardless of the form, all LUT dissertations must be based on peer-reviewed publications.

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.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. The process officially starts when the student submits the dissertation manuscript and the application for starting the dissertation process to LUT Doctoral School.

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 AND ASSESSMENT CRITERIA

The purpose of the preliminary examination is to establish whether the manuscript fulfils the academic requirements. The dissertation should not be submitted for preliminary examination unless 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.

The preliminary examiners should pay attention to the following points:

- » the scientific value of the work
(for example: novelty, significance)
- » scientific correctness, methodology and objectivity
- » the doctoral candidate's contribution, considering also his or her role in joint publications
- » coherence (in other words, does the manuscript compose a coherent, unified entity?)
- » clarity of the research questions and objectives
- » logical organisation, presentation and language.

FURTHER INFORMATION:

elut.lut.fi > Doctoral studies > Dissertation process -
Dissertation committee & preliminary examination

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. The criteria for choosing opponents are the same as for preliminary examiners.

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.

The doctoral candidate may print the dissertation after the academic council grants permission. At LUT University, dissertations are recommended to be published in the publication series Acta Universitatis Lappeenrantaensis. More information can be obtained from LUT Academic Library.

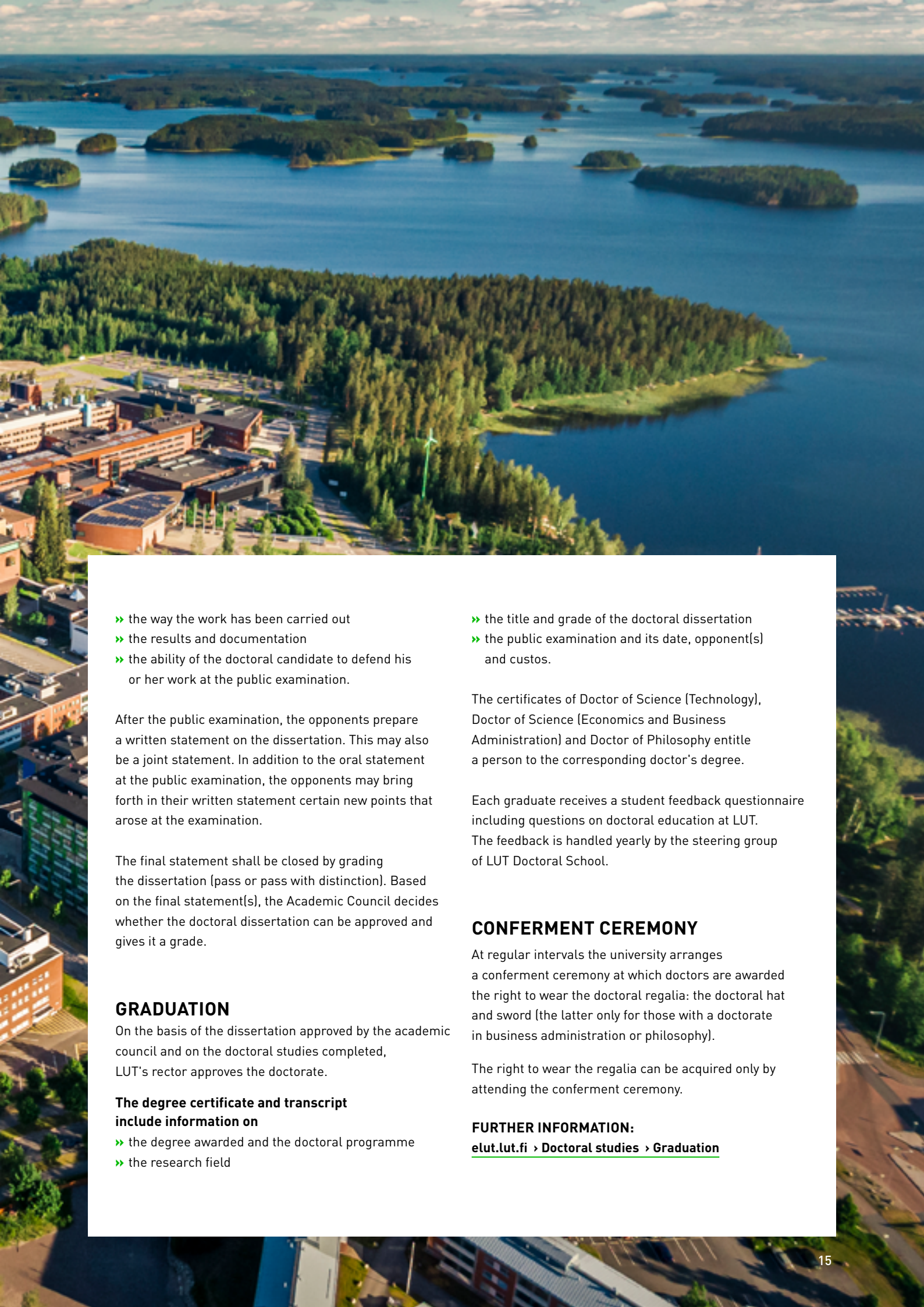
PUBLIC EXAMINATION AND ASSESSMENT

The dissertation must be on public display for ten calendar days before the public examination, the date and place of which the custos and the opponent(s) agree on together.

At the public examination, 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. However, the examination may not take more than four 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. This may also be a joint statement. In addition to the oral statement at the public examination, the opponents may bring forth in their written statement certain new points that arose at the examination.

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 degree certificate and transcript include information on

- » the degree awarded and the doctoral programme
- » the research field

- » the title and grade of the doctoral dissertation
- » the public examination and its date, opponent(s) and custos.

The certificates of Doctor of Science (Technology), Doctor of Science (Economics and Business Administration) and Doctor of Philosophy entitle a person to the corresponding doctor's degree.

Each graduate receives a student feedback questionnaire including questions on doctoral education at LUT. The feedback is handled yearly by the steering group of LUT Doctoral School.

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 or philosophy).

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

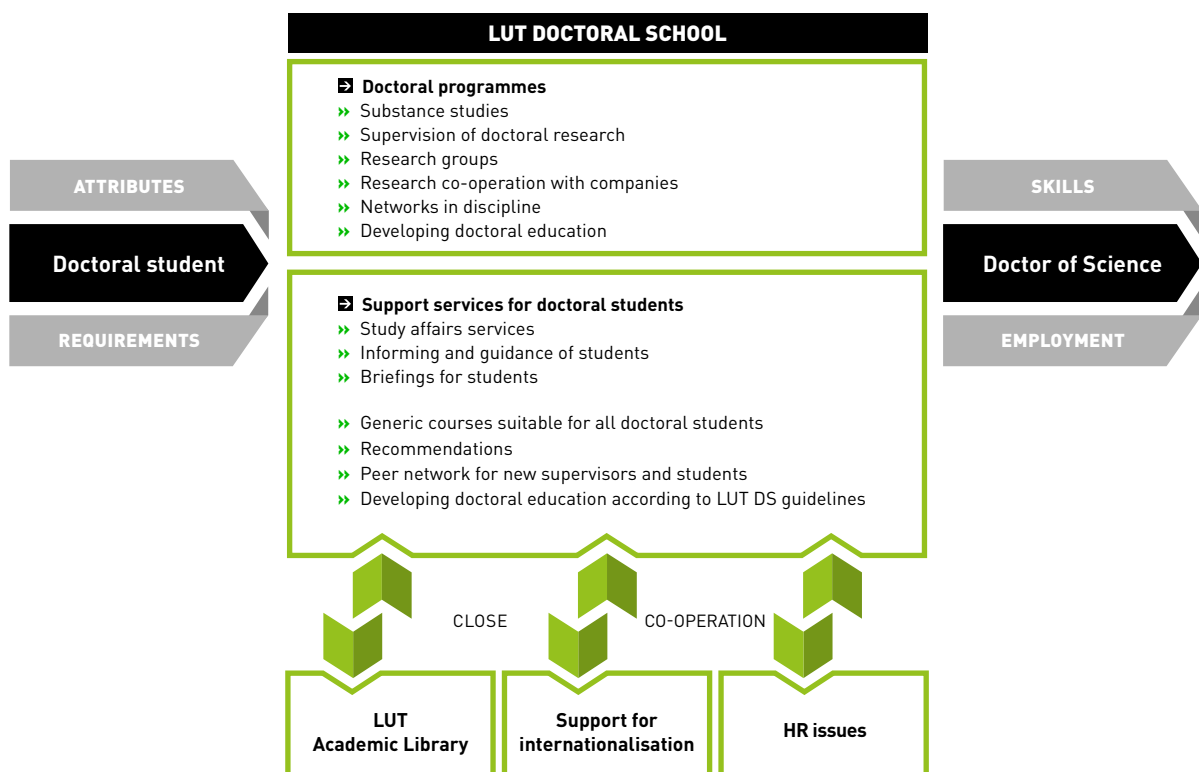
FURTHER INFORMATION:

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.



LUT Doctoral School's study affairs personnel helps 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.fi > Doctoral studies > Study guidance & feedback





LUT University
Yliopistonkatu 34
FI-53850 Lappeenranta
FINLAND

>> lut.fi

doctoral.studies@lut.fi