

GENERAL STUDY PLAN FOR TRAINING AT RESEARCH LEVEL IN BUILDING MATERIAL

TFN 2019-10-11

1 Subject area

Building materials include sustainable building materials and their application, recycling and reuse and applied building physics, with a particular focus on Arctic conditions,

2 Organization of the training

Postgraduate education in building materials completed with a licentiate degree comprises at least two years of net study time (120 higher education credits) and consists of a course component of 50-60 higher education credits and a licentiate thesis of 60-70 higher education credits,

Postgraduate education in building materials that conclude with a doctorate degree which comprises of four years of the net study time (240 higher education credits) and consists of a course section of 80-100 higher education credits and a dissertation of 140-160 higher education credits.

The program covers four years of full-time study, These are preferably carried out within an employment as a doctoral student With at least 80% time for education, Normally, teaching and institutional services of a maximum of 20% are also included, The composition of the program of research projects and courses is determined in the individual study plan (ISP) for each doctoral student,

For each doctoral student, an individual study plan (according to a set template) is drawn up in which the individual presentation of the study program appears, The individual study plan must be followed up by supervisors and doctoral students. The head of the department controls the individual study plan at least once a year as delegated by the Rector,

The course part consists of broader courses aimed at providing a solid insight into the area of building material, and partly individual courses aimed at studying the latest research within the doctoral student's own research area. A number of compulsory and elective courses are listed in the "PhD Student Handbook".

It is desirable, but not mandatory, that the licentiate and doctoral dissertations contain both experimental and theoretical studies. Parts of the licentiate work can be parts of the dissertation

for the doctoral degree, The quality of the parts included in the licentiate and doctoral dissertations must be so high that international publication in journals / conference proceedings with peer review is possible,

The research work is communicated with the scientific community and other external parties with articles in scientific journals and at scientific conferences as well as through participation in conferences and collaborative projects.

3 Eligibility and selection

3.1 Basic eligibility

Basic qualifications for postgraduate education: 1) passed a degree at an advanced level 2) completed course requirements of at least 240 higher education credits, of which at least 60 for the higher education credits, or 3) acquired in other ways locally or abroad an equivalent knowledge, The university may grant an exemption from those requirements for an individual applicant, if there are special reasons. University Regulations 7:39 (2010: 1064). See also LTU's local guidelines in the admission order for postgraduate education.

3.2 Special eligibility

Masters degree / Master's degree in one of the ITIQjor faculties of the Technical Faculty Board (or equivalent), as well as

3.3 Selecton

Selection of applicants who meet the requirements must be made with regard to their ability to take up the education, However, the mere fact that an applicant is deemed to be able to receive previous education or professional activity for the education must not, upon selection, give the applicant preference over other applicants Hf7:41 (2010: 1064). See also LTU's local guidelines in the admission order for postgraduate education.

The following criteria apply to selection for postgraduate education in building materials:

- Knowledge relevant to the current project • The quality of the degree project
- Personal characteristics relevant to postgraduate education
- Very good knowledge of oral and written communication in English.

4 Exams included in the program

The training consists of courses and a scientific work, Exams included in the postgraduate education are assessed as passed / failed. Grades on courses and licentiate theses are determined by a specially appointed teacher (examiner). A doctoral dissertation is decided by a specially appointed examination committee.

4.1 Course

A number of compulsory and elective courses are listed in the "PhD Student Handbook which can be found on the website. The compulsory courses include the basics of building materials

and tribology as well as methodology courses that are central to research in building materials. It is also desirable for students to gain knowledge and skills in the following areas:•

- Leadership
- Project management
- Sustainability based on all three aspects (environmental, social, economic)
- Students admitted to postgraduate education in building materials are also encouraged to gain international experience by, for example, staying at a foreign university for a short time, attending international conferences and collaborating with researchers from other parts of the world.

The goal fulfilment is verified through examination, which is stated in the respective syllabus.

4, 1.1 Credit counting

According to local guidelines related to postgraduate education,

4,2 Scientific work

Scientific work in the form of a dissertation / thesis in building materials must be designed as a brief summary framework report of scientific essays (summary thesis), which the student has written alone or jointly with another person,

The process for postgraduate education in the subject of building materials is described in more detail in the "PhD Student Handbook" which is found on the subject's website. The process includes a number of seminars and documents to be delivered according to a given timetable,

The licentiate thesis is defended orally at a public licentiate seminar and is assessed as failed or approved. The assessment takes into account the content of the thesis and the defense of the thesis. The grade for a licentiate thesis is decided by an examiner appointed by the prefect,

The doctoral dissertation must be defended orally in a public defense and is assessed as failed or approved. The grading takes into account the content of the dissertation and the defense of the dissertation. Grades for a doctoral dissertation are decided by an examination committee, which is appointed for each dissertation,

5 Exam

In the subject of building materials, a doctoral student who is admitted to the doctoral degree has the opportunity to take a licentiate degree after at least 120 higher education credits has been completed within the education to be completed with a doctorate degree.

5.1 Examination objectives

Objectives according to degree description (I-IF Appendix 2 Examination order), see also Appendix.

The PhD student in building materials shall

Publish in internationally recognized journals. For the licentiate degree, at least one manuscript must be submitted for publication. For the doctoral degree, at least two articles must be accepted for publication, or already published. For the doctoral degree written as monograph form, at least one article must be submitted or published,

Present their work at international conferences of significant size and significance. For the licentiate degree, at least one oral presentation must be completed. For the doctoral degree, at least two oral presentations must be completed.

Be prepared for a professional career as a researcher, in academia or elsewhere,

More instillations on how to achieve the goals of the Higher Education Ordinance as well as the objectives Of the subject can be found in the PhD Student Handbook "which can be found on the subject's website. ✓

5.2 Name of the degree

Doctoral students who pass the licentiate degree in building materials are given the title of Licentiate of Science

Doctoral students who complete a doctoral degree in building materials are normally awarded the title of Doctor of Philosophy in Science]

Requests for other degree names are made according to established guidelines,

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 2019-10-11.

If agreed between the third-cycle student and the supervisors, the new general syllabus, dnr 4384-2019, 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.

Objectives for postgraduate education (degree program, I-IF part 2):

1 Knowledge and understanding

For the licentiate degree 120 higher education credits, (cr), the doctoral student must

- _ show knowledge and understanding in the research area, including limited general specialist knowledge, and in-depth knowledge related to the scientific methodology in general and the methods of the specific research area in particular,

For the doctoral degree 240 higher education credits (st), the doctoral student must

- _ demonstrate broad knowledge and systematic understanding of the research area, as well as in-depth and tip-t(Hlate specialist knowledge within a defined part of the research area, and _ show familiarity with scientific methodology in general and with the methods of the specific research area in particular.

2 Skill and ability

For the licentiate degree 120 credits the doctoral student must

- _ demonstrate the ability to critically, independently and creatively and with scientific accuracy identify and formulate questions, to plan and implement appropriate research methods and other qualified tasks within given time frames and thereby contribute to the development of knowledge, and to evaluate this work, _ demonstrate the ability to present and discuss research and research results in dialogue with the scientific community and society both nationally and internationally, both orally and in writing, _ demonstrate the skills required to independently participate in research and development work and to work independently in other qualified activities.

For the doctoral degree 240 credits the doctoral student must

- _ demonstrate the ability for scientific analysis and synthesis as well as for independent critical review and assessment of new and complex phenomena, problems and situations, _ demonstrate the ability to critically, independently, creatively and scientifically identify and formulate problems, and to plan and conduct appropriate research and other qualified tasks within the given time frames and to review and evaluate such work; _ with a dissertation, show their ability to make a significant contribution to the development of knowledge through their own research, _ demonstrate the ability to both nationally and internationally, orally and in writing with authority to present and discuss research and research in dialogue with the scientific community and society, _ demonstrate the ability to identify needs for additional knowledge _ show qualification for contributing to the development of society and supporting others in both research and education as well as in other qualified professional education,

3 Evaluation and approach

For the thentiatp degree 120 |doctoral student must

- _ demonstrate the ability to make ethical assessments in their own research, _ show insight into the possibilities and limitations of science, its role in society and people's responsibility for its use,

and ... demonstrate the ability to identify their need for further knowledge and to take responsibility for their knowledge development,



For the doctoral degree 240 credits the doctoral student must

... show intellectual independence and scientific reasonableness and the ability to make ethical assessments of the research, and ... show in-depth insight into the possibilities and limitations of science, its role in society and people's responsibility for how it is used,

4 Scientific essay

For the licentiate degree 120 credits the doctoral student must ...have received a scientific paper of at least 60 higher education credits

For the doctoral degree 240 credits the doctoral student must

- have received a scientific dissertation (doctoral dissertation) of at least 120 higher education credits,