LULEÅ TEKNISKA UNIVERSITET

GENERAL CURRICULUM FOR EDUCATION AT THIRD-CYCLE LEVEL

IN

QUALITY TECHNOLOGY

TFN Chair 24/04 2014

Including updated subject description 2016-11-28 (re-beslut 241-16)

1 Subject Area

The scientific discipline of quality technology includes principles, ways of working, and tools for customer and sustainability driven development of products and processes. The research subject has an industrial basis, but with applications also in other sectors.

2 Programme curriculum

Education at third-cycle level in Quality Technology that concludes with a Degree of Licentiate comprises a total of two years' full time study (120 credits) and consists of a study programme that gives 40–60 credits and a licentiate thesis that gives 60–80 credits.

Education at third-cycle level in Quality Technology that concludes with a Degree of Doctor comprises a total of four years' full time study (240 credits) and consists of a study programme that gives 75–120 credits and a doctoral thesis that gives 120–165 credits.

The studies are normally conducted within the framework of employment as a third-cycle student, with an average of 80% of the time allocated for the doctoral student's education. The courses consist of compulsory courses, selective courses and courses connected to the research field. The curriculum is shown in the "Handbook for third-cycle studies at LTU" that can be accessed via the University's website. An individual study plan is drawn up for every third-cycle student, according to a fixed model, where the programme curriculum is specified in detail. The individual study plan shall be followed up at least once a year by a supervisor and the third-cycle student, and then approved by the Head of Department. Monitoring and the possible revision of the individual study plan are conducted at least once a term collectively by the third-cycle student, supervisor and deputy supervisor.

3 Eligibility and selection

3.1 General eligibility requirements

An individual fulfils the general eligibility requirements for the third-cycle educational programme when he or she 1) has completed a second-cycle degree, 2) has completed higher education courses worth at least 240 credits, of which at least 60 are for second-cycle courses, or 3) in some other manner, in this country or abroad, has acquired the equivalent qualifications. The faculty board may permit an exemption from the requirement of basic eligibility in the case of an individual applicant, if there are special grounds Chapter 7, Section

39 of the Higher Education Ordinance (2010:1064). Also refer to the local guidelines laid down in the Admission Rules for Third-cycle Education at Luleå University of Technology.

3.2 Specific eligibility requirements

Good command of oral and written communication in English.

3.3 Selection

Selection from among applicants meeting the requirements shall be made with reference to their ability to benefit from the education. The mere fact that an applicant is deemed able to receive credit towards the education for previous education or working activities may not alone give the applicant precedence over other applicants in the selection process, Chapter 7, Section 41 of the Higher Education Ordinance (2010:1064). Also refer to local guidelines laid down in the Admission Rules for Third-cycle Education at Luleå University of Technology.

In the selection of third-cycle education in Quality Technology, the following applies to the selection criteria:

- Knowledge relevant for the project at hand
- Quality of the degree project
- Formulated research plan
- Personal qualities relevant for third-cycle education

4 Examinations included in the education

The education consists of courses and an academic thesis. Examinations included in third-cycle programmes are graded Pass or Fail. Course and licentiate grades are decided by specially appointed teachers (examiner). Doctoral thesis grades are decided by a specially appointed grading committee.

4.1 Courses

Courses in theory of knowledge and research methodology, university pedagogy and also academic writing and publication are to be included in the third-cycle student's third-cycle education.

Goal attainment is tested by means of the form of examination specified in the syllabus.

4.1.1 Recognition of prior studies

As specified in the local guidelines laid down in the Admission Rules for Third-cycle Education at Luleå University of Technology.

4.2 Academic thesis

Academic work in the form of the dissertation/thesis in Quality Technology shall be designed as a homogenous, coherent academic works (monograph) or a brief summary - framework - of academic papers (compilation thesis), which the student has written alone or together with another person or persons. The academic papers are appended to the summery.

Thesis manuscripts shall be presented at one or more research seminars or be subjected to equivalent review through the agency of the department.

The licentiate thesis is defended orally at a public licentiate seminar and is graded Pass or Fail. When the thesis is graded both the content of the thesis and the defence of the thesis are taken into consideration. The grade of a licentiate thesis is decided by an examiner appointed by the Head of Department.

The doctoral thesis is defended orally at a public disputation and is graded Pass or Fail. When the thesis is graded, both the content of the thesis and the defence of the thesis are taken into consideration. Grades for a doctoral thesis should be decided by a grading committee that is specifically designated for each thesis.

5 Degree
A third-cycle student who has been admitted to a Degree of Doctor has the possibility to take a Degree of Licentiate after completing a portion giving at least 120 credits of the education that will be concluded with a Degree of Doctor.

5.1 Degree objectives
As specified in the Qualifications Ordinance (Higher Education Ordinance, Annex 2 – Degree Ordinance). See also the annex below.

5.2 Degree title
A third-cycle student who takes a Degree of Licentiate in Quality Technology receives the degree title of Licentiate of Engineering.

A third-cycle student who takes a Degree of Doctor in Quality Technology normally receives the degree title of Doctor of Engineering.

Requests for another degree title are made according to established guidelines.

6 Entry into effect
The previous general syllabus (FST 21/12/2004) will cease to apply for third-cycle students who are admitted to education at third-cycle level after 1 July 2007. Third-cycle students admitted before this date may choose to either follow the previous curriculum or transfer to the present curriculum (Ref. no. 999-07 10/09/2007).

Those amendments that were agreed 16/02/2011 (ref. no. 313-11) come into effect immediately. The amendment to Section 2 (distribution of points between courses and academic thesis); 3.2 (language competence); 3.3 (selection).

The previous general curriculum (*2011-02-16 TFN, Chair*) will cease to apply for third-cycle students who are admitted to studies at third-cycle level after 24/4/2014. The amendment to Section 1(subject area); 2 (distribution of points between courses and academic thesis); 3.2 (language competence); 3.3 (selection).If agreed between the third-cycle student and the supervisor, the new general syllabus (ref. 1096-14) may be used as a steering document for third-cycle students who, on the date of decision, have not achieved the requirements for a

licentiate degree/equivalent number of ECTS credits (120). It must then be documented in the third-cycle student's individual study plan which general curricula that applies.

ANNEX
Goal for education at third-cycle level (Qualifications Ordinance, Higher Education Ordinance, Annex 2):

1 Knowledge and understanding
For a Degree of Licentiate 120 credits (higher education credits), the third-cycle student shall:
- demonstrate knowledge and understanding in the field of research including current specialist knowledge in a limited area of this field as well as specialised knowledge of research methodology in general and the methods of the specific field of research in particular.

For a Degree of Doctor 240 credits (higher education credits), the third-cycle student shall:
- demonstrate broad knowledge and a systematic understanding of the research domain, together with deep and current specialist knowledge within a limited area of this research domain and
- demonstrate familiarity with academic methodology in general and with the specific research domain's methods in particular.

2 Competence and skills
For a Degree of Licentiate 120 credits, the third-cycle student shall:
- demonstrate the skills to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake a limited piece of research and other qualified tasks within predetermined time frames in order to contribute to the formation of knowledge as well as to evaluate this work,
- demonstrate the skills in both national and international contexts to present and discuss research and research findings in speech and writing and in dialogue with the academic community and society in general, and
- demonstrate the skills required to participate autonomously in research and development work and to work autonomously in some other qualified capacity.

For a Degree of Doctor 240 credits, the third-cycle student shall:
- demonstrate the capacity for scholarly analysis and synthesis as well to review and assess new and complex phenomena, issues and situations autonomously and critically,
- demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work,
- demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research,

- demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general and
- demonstrate the ability to identify the need for further knowledge and
- demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity.

3 Judgement and approach

For a Degree of Licentiate 120 credits, the third-cycle student shall:
- demonstrate skills to conduct ethical research assessment in their own research,
- demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate skills to identify the need for further knowledge and to take responsibility for one's knowledge development.

For a Degree of Doctor 240 credits, the third-cycle student shall:
- demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and
- demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

4 Academic thesis

For a Degree of Licentiate 120 credits, the third-cycle student shall:
- have completed an academic thesis of at least 60 higher education credits.

For a Degree of Doctor 240 credits, the third-cycle student shall:
- have completed an academic thesis (doctoral thesis) of at least 120 higher education credits.