



GENERAL SYLLABUS FOR THIRD-CYCLE PROGRAMMES IN IN MATERIAL MECHANICS

TFN Chair, 2016-02-11

1 Subject area

Material Mechanics focuses on the development of models for both the evolution of microstructures in, and the related thermomechanical properties of metals, which are applicable in simulations, particularly of technical processes.

2 Programme curriculum

Education at third-cycle level in Material Mechanics that concludes with a Degree of Licentiate is comprised of a total of two years' full time study (120 credits) and consists of a study programme that results in 30-50 credits and a licentiate thesis that results in 70-90 credits.

Education at third-cycle level in Material Mechanics that concludes with a Degree of Doctor is comprised of a total of four years' full time study (240 credits) and consists of a study programme that results in 60-90 credits and a doctoral thesis that gives 150-180 credits.

The third-cycle student presents a state of the art review over his research area also including an updated research project plan. A licentiate thesis is presented and examined or a half time evaluation is carried out after about two years full time work. This is expected to include 2-3 publications. The doctoral thesis, defended after about four years full time studies, will include a summary part and 4-6 publications.

An individual study plan is drawn up for every third-cycle student (according to a fixed model) where the study programme is specified in detail. A follow-up of the plan is held at least twice a year by the third-cycle student and his/her supervisor and is approved by the Head of Department at least once a year, as delegated by the Vice-Chancellor.

3 Eligibility and selection

3.1 General eligibility requirements

An individual fulfills 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 as written in 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 skills in 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, as per 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.

4 Examinations included in the education

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

4.1 Courses

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

An academic project in the form of a dissertation/thesis in Material Mechanics shall be presented as a homogenous, cohesive academic work (monograph) or a brief summary – comprehensive summary – of academic essays (composite thesis) that the post-graduate student has written alone or together with another person or persons.

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 as either 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 appointed for each thesis.



5 Degree

In Material Mechanic, a third-cycle student who has been admitted to a Degree of Doctor has the possibility to take a Degree of Licentiate after completing one part comprising at least 120 credits of a study programme intended to conclude with the award of 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 Material Mechanics receives the degree title of Licentiate in Engineering.

A third-cycle student who takes a Degree of Doctor in Material Mechanics normally receives the degree title of Doctor of Philosophy.

Requests for other degree titles are made according to established guidelines.

6 Entry into effect and interim regulations

2007-09-10:

The previous general curriculum will cease to apply for post-graduate students who are admitted to education at post-graduate level after 1 July 2007. Post-graduate students admitted before this date may choose to either follow the previous curriculum or transfer to the present curriculum.

2016-02-11:

The previous general syllabus (*2007-09-10 TFN*) will cease to apply for third-cycle students who are admitted to studies at third-cycle level after 11/02/2016. The amendment to 1 (Subject area); 2 (Programme curriculum); 3.2 (Specific eligibility requirements); 4.1 (Courses). If agreed between the third-cycle student and the supervisor, the new general syllabus (ref. LTU-215-2016) 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 HE credits (120). It must then be documented in the third-cycle student's individual study plan which general curricula that applies.

Qualifications ordinance (Higher Education Ordinance, Annex 2) Contents

the qualifications that may be awarded in the third cycles, and
the requirements to be fulfilled for the award of each qualification (qualification descriptors).

THIRD-CYCLE QUALIFICATIONS

General qualifications

Degree of Licentiate [Licentiatexamen]

Scope

A Degree of Licentiate is awarded

either after a third-cycle student has completed a study programme of at least 120 credits in a subject in which third-cycle teaching is offered,

or after a third-cycle student has completed one part comprising at least 120 credits of a study programme intended to conclude with the award of a PhD, if a higher education institution decides that a licentiate of this kind may be awarded at the institution.

Outcomes

Knowledge and understanding

For a Degree of Licentiate 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.

Competence and skills

For a Degree of Licentiate the third-cycle student shall have:

- demonstrate the ability 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 ability 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.

Judgement and approach

For a Degree of Licentiate the third-cycle student shall

- demonstrate the ability to make assessments of ethical aspects of his or her own research
- demonstrate 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 the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Thesis

For a Degree of Licentiate the third-cycle student shall have been awarded a pass grade for a research thesis of at least 60 credits.

Miscellaneous



Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Licentiate with a defined specialisation.

Degree of Doctor

Scope

A Degree of Doctor is awarded after the third-cycle student has completed a study programme of at least 240 credits in a subject in which third-cycle teaching is offered.

Outcomes

Knowledge and understanding

For the Degree of Doctor the third-cycle student shall

- demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field, and
- demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular.
- 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
- 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.

Judgement and approach

For the Degree of Doctor 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.

Research thesis (doctoral thesis)

For the Degree of Doctor the third-cycle student shall have been awarded a pass grade for a research thesis (doctoral thesis) of at least 120 credits.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Doctor with a defined specialisation. Ordinance (2008:132)