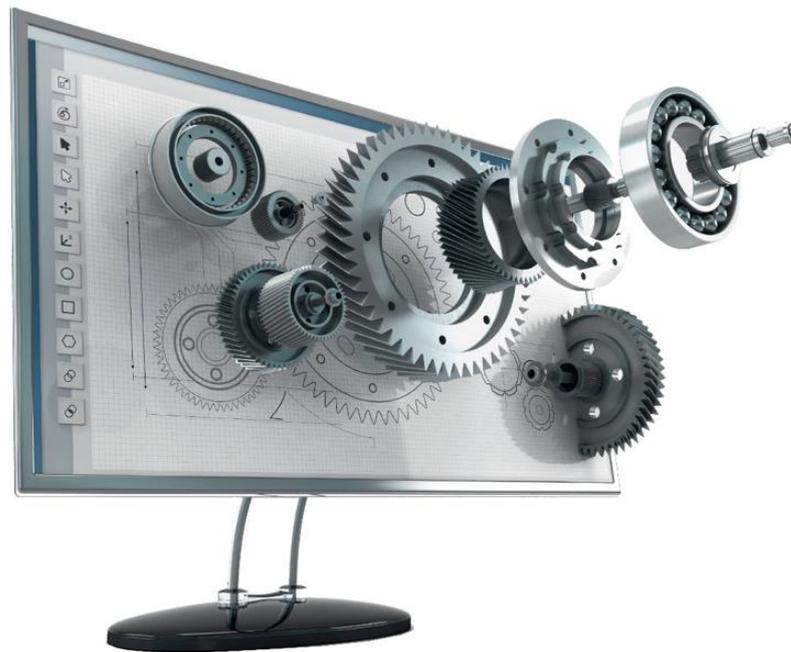


The Division of Machine Elements's

PhD student handbook

Version 2.0



PhD@ME

Division of Machine Elements

Department of Engineering Sciences and Mathematics

Luleå University of Technology

Table of Contents

Acronyms and Abbreviations.....	1
1. Introduction	1
2. Professional development	2
3. Gates and timeline	2
3.1. Licentiate thesis proposal.....	3
3.1.1. Mid-term research outline	4
3.2. PhD thesis proposal	4
3.3. Courses throughout the PhD studies	5
Appendix 1. Skills, activities and outcomes connected to the general syllabus.....	6
Appendix 2. Complementary skills, activities and learning outcomes	9
Appendix 3. Getting started	11
Appendix 4. Information concerning day-to-day activities	13

Acronyms and Abbreviations

TVM	Teknikvetenskap och Matematik	Engineering Sciences and Mathematics
ME	Maskinelement	Machine Elements
PN	Personnummer	Personal Identity Number
SN	Samordningsnummer	Coordination Number
ISP	Individuell studieplan	Individual study plan
HoD	Prefekt	Head of Department
DA	Institutionsadministratör	Department Administrator
EA	Utbildningsadministratör	Education Administrator
PE	Projektkonom	Project Economist

1. Introduction

Machine Elements (ME) is one among more than 50 research subjects of the engineering faculty at Luleå University of Technology. Licentiate and PhD degrees are awarded in each of these 50 subjects, including ME. This document describes the third-cycle (doctoral) study process in the subject of ME.

ME is a broad area of study and covers most aspects of machine component science. It is formally defined at LTU as follows: "*Machine Elements includes analysis and optimisation of components and systems based on performance, durability, energy efficiency, reliability and sustainability. Particular emphasis is placed on the field of tribology.*"

The ME subject is hosted by the research group at the division of ME where strong belief and emphasis is laid on applied science. It is not uncommon to see new findings being simultaneously published in the best peer-reviewed international scientific journals and applied in industry. Research carried out at the division of ME is based on both experimental work and simulations, and is concerned with various areas of expertise such as automotive industry, hydropower systems, bio tribology, etc. Obtaining a PhD in ME does not only imply excellent academic work but also vast personal development in order to become an independent researcher with knowledge and skills suitable for being employed on advanced research positions in academia and industry.

This document is meant to act as a handbook for a third cycle study student during his/her studies. The following section entitled 'Professional Development' starts by describing the syllabus for third cycle studies in general at LTU and particularly at the division of ME. Objectives and goals for a student and ways to attain them are described in chapter 2 along with Appendices 1 and 2. Section 3 describes specified gates that the student will have to pass during the third cycle studies at the division of ME, which are also visualized in a timeline.

Information that might be helpful when getting started with the third-cycle studies at the division of ME can be found in Appendix 3, while Appendix 4 is meant to act as a collection of information that concerns daily life as a third cycle study student at the division of ME.

2. Professional development

Each research subject at LTU has a general syllabus (ASP) that specifies the requirements of the third-cycle studies in that specific subject. The general syllabus for ME can be found at: <https://www.ltu.se/research/Utbildning-pa-forskarniva/Studieplaner/Allmanna-studieplaner-Teknisk-fakultetsnamnd/Maskinelement-1.106376?!=en>.

To successfully carry out third cycle studies in a particular subject, each individual PhD student needs to demonstrate knowledge and understanding of the subject, competencies and skills, and good judgement and approach. These outcomes are stated in the ASP and describe the objectives for third-cycle studies defined by the Swedish Higher Education Ordinance (HEO), or “Högskoleförordningen” in Swedish. Ways to attain these attributes in a third-cycle study in ME are listed in Appendix 1.

In the individual study plan (ISP) the activities ensuring that the aforementioned goals are going to be fulfilled may be based on the content of Appendix 1. The third-cycle study student along with his/her supervisor prepares the ISP in the initial stage of third cycle studies. The purpose of the ISP is to make sure that the student has formulated a tentative plan to carry out the third-cycle studies. Furthermore, the ISP is an important document for both planning and follow-up of the third cycle studies. For more information, the reader is referred to: <https://www.ltu.se/research/Utbildning-pa-forskarniva/Handbok/7-Utbildningsprocessen-1.57455?!=en>.

On top of the aforementioned outcomes that are stated in the ASP, four important skills that a third-cycle student should have after completing a third-cycle study program in ME have been defined and can be found in Appendix 2. Ways to achieve these skills at the division of ME are also listed in the same appendix.

3. Gates and timeline

During the third-cycle studies, the PhD student will have to pass several gates that have to be completed within a certain time frame during the four years of PhD studies. After passing a gate in the timeline, a note of which gate, along with the date of when the gate was passed, should be added to the ISP in order to keep track of the third cycle student’s progress. The supervisors agree that the student has passed the gate by signing the ISP. The aforementioned gates are illustrated in Figure 1 and a brief explanation of each gate is given below:

- The **ISP review** gates highlights when the ISP needs to be updated. This should be done once every semester latest the 15th of November in the fall and the 15th of May in the spring. The review should include a follow up of the PhD student’s conducted and upcoming work, and changes in e.g. courses and/or supervisors etc.
- The **Literature review presentation** is scheduled six months after the PhD project has been started. At this time, the PhD student will present a literature review and present research gaps that have been found.
- A **Licentiate thesis proposal** and a **PhD thesis proposal** are to be presented to the seniors at the division after one- and three years of third cycle studies, respectively. Detailed information about the thesis proposals are given in Section 3.1 and Section 3.2.
- A **Popular science presentation** is given after about 15 months and is preferably given to an audience that does not have a specialization in the field. The audience for the presentation is decided by the third cycle student after attainment of 75 credits and can be e.g. students in courses given by the division.

- A **Licentiate thesis presentation** is held by the PhD student after 120 credits as stated in the ASP. Earning the Licentiate degree also leads to a salary increase. However, if the third cycle student does not defend a Licentiate thesis and instead present a **mid-term research outline**, the salary is instead increased after 150 credits.
- The **Doctoral thesis defense** is held after 240 credits has been achieved and after the requirements for a doctoral degree, as stated in the ASP, has been fulfilled. This is the final step of the PhD studies. The period of 4 years may be extended to a maximum of 5 years depending on departmental duties undertaken, such as undergraduate teaching and Tribolab commissioned research.

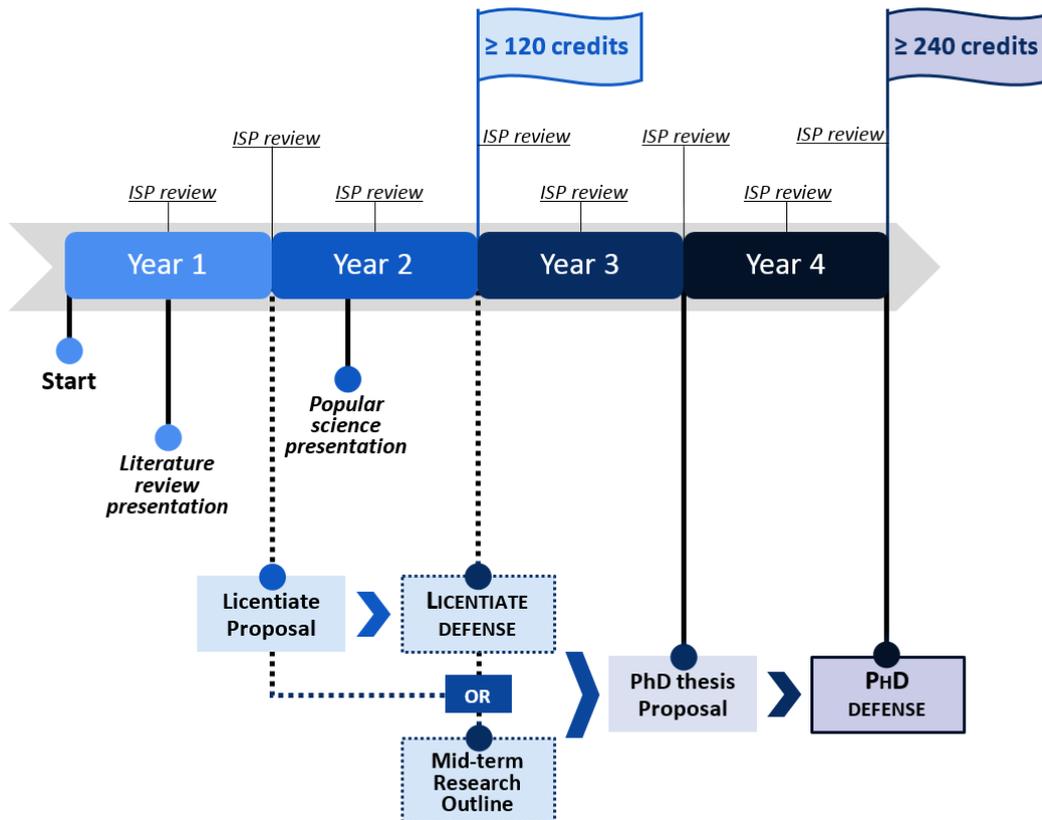


Figure 1. Timeline with gates for third-cycle studies at the division of Machine Elements.

3.1. Licentiate thesis proposal

The Licentiate thesis proposal is supposed to result in a comprehensive outline of the PhD project that helps the student plan the upcoming work of the PhD project, as well as contributing to the Licentiate thesis process. In the Licentiate thesis proposal, the following information and headings should be included and are, as already mentioned, supposed to consider the whole PhD project:

- **Background/Introduction**
 - Describe the background and significance of the research area.
- **Survey of the field**
 - What has been done in the field already? Literature review.
- **Research gaps**

- What has not yet been done and is therefore missing in the field?
- **Aims and objectives**
 - What is going to be done, based on the research gaps?
- **Research plan and time plan**
 - How are the aims and objectives supposed to be achieved?
- **Equipment/Software/Methodology**
 - What type of equipment is needed and what needs to be obtained/built? What software?
Commercial or in-house? Methods to be developed or already established methods?
- **Potential publications**
 - Preliminary titles on papers throughout the work.
- **Preliminary results**
 - Preliminary results and pilot studies in the research area by the candidate.

The Licentiate thesis proposal is to be a maximum 15 min. presentation followed by a 20 min. discussion with the seniors.

The Licentiate thesis proposal is, after discussion with the seniors and revision of the written document, agreed upon between the PhD student and supervisor before the work continues.

3.1.1. Mid-term research outline

In case of taking a PhD degree without a Licentiate, a mid-term research outline is instead to be presented. It follows the same rules and guidelines as the Licentiate thesis proposal mentioned above, however, in a less comprehensive manner.

3.2. PhD thesis proposal

The PhD thesis proposal is supposed to result in parts of the final PhD thesis written and help the student in the final stages of the PhD degree. The prerequisites on the thesis proposal are as follows:

- It must be easy and not too time consuming to make it
- It must be useful for writing the actual thesis, i.e. the work you do on the proposal should be possible to use as a document you continuously improve until it forms your thesis
- It must NOT be perfect and look beautiful, it can be compared to a road work. Before the road is ready to use some parts are just a path through the forest, some parts are full of gravel, and some parts are almost ready. So you may even write “bla, bla, bla” in some sections to show that the texts will be written later.

The document the student should submit to the Seniors group should be as follows:

- An outline of the thesis “kappa” i.e. the comprehensive summary (that is everything except the appended papers)
- That means a first sketch of the headings to be used and some short comments about what to write under each heading
- The research question must be mentioned, and so also objectives

- The appended papers should be described by title, author list, and abstract. For papers already published you should also mention the journal/conference, i.e. the full reference. For papers not yet finished you should describe their content i.e. what question you will answer, the expected outcome etc.

The PhD thesis proposal shall be an outline of the thesis to be circulated amongst seniors, followed by a discussion (approximately 30min) with the seniors based on this document. The PhD thesis proposal is after discussion with the seniors and revision of the written document agreed upon between the PhD student and supervisor before the work towards PhD defense is continued.

3.3. Courses throughout the PhD studies

Courses taken throughout the PhD studies include both compulsory and PhD specific courses. These are, with the addition of recommended courses, presented in Figure 2. Note that the third-cycle student may already have obtained courses that relates to fundamental understanding of machine elements and tribology at master level.

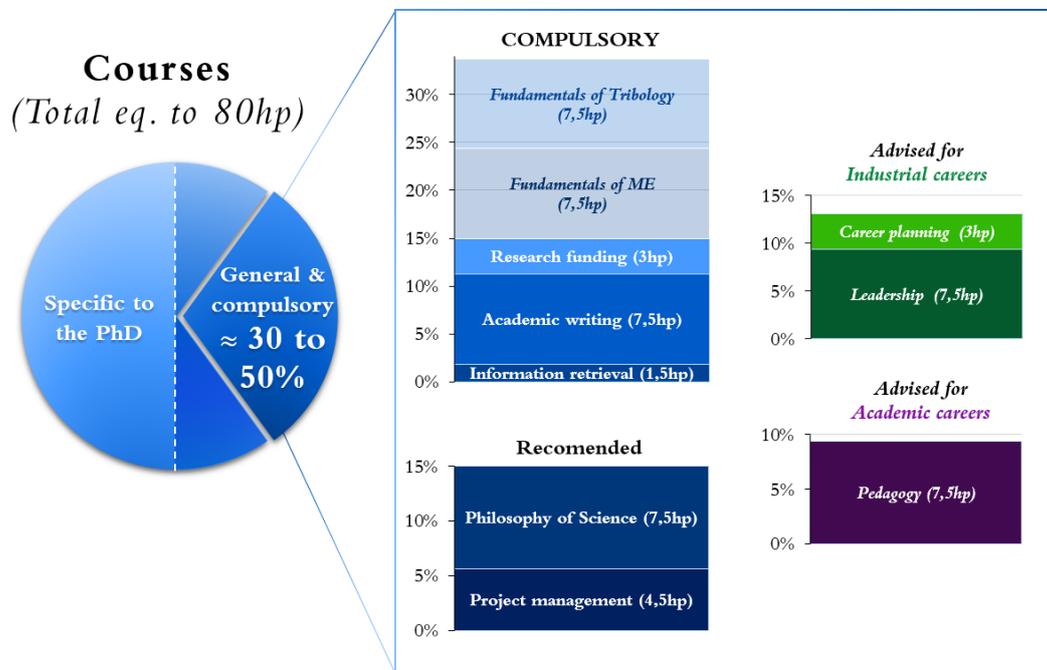


Figure 2. Compulsory and recommended courses given at LTU.

Appendix 1. Skills, activities and outcomes connected to the general syllabus

Intended Learning Outcomes for the research subject MACHINE ELEMENTS according to the Higher Education Ordinance	Proposed activities to achieve the learning outcomes according to the Higher Education Ordinance
Knowledge and understanding	
<ul style="list-style-type: none"> ○ 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 	<ul style="list-style-type: none"> ○ prepared a literature review of the state-of-the-art research within a specific area of the subject Machine Elements (the thesis field of research), ○ have authored at least two papers which are accepted for publication in international journals with a peer-review procedure, ○ have authored at least two additional manuscripts that are publishable in international journals with a peer-review procedure, ○ take courses on the fundamentals of Machine Elements and Tribology according to Section 3.3, ○ take courses which supports the student's knowledge and understanding of the specific area of the subject Machine Elements (the thesis field of research), again according to Section 3.3.
<ul style="list-style-type: none"> ○ demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular. 	<ul style="list-style-type: none"> ○ as a part of the doctoral thesis, write a comprehensive description of, and motivation to, the methodologies chosen for the specific field of research, ○ gain knowledge in Theory of Science by taking an appropriate course, and/or discuss with supervisors, seniors and other PhD-students about science in a holistic perspective.
Competence and skills	
<ul style="list-style-type: none"> ○ demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically 	<ul style="list-style-type: none"> ○ write a licentiate thesis proposal within the first year of the third cycle studies according to Section 3.1 in this document and a doctoral thesis proposal according to Section 3.2, ○ write a half-time report which describes the research outcome so far. This report is preferably a <i>Licentiate thesis</i> or <i>mid-term research outline</i> according to Section 3.1, ○ make a half-time presentation where the research outcome is discussed with an <i>Opponent</i>. This presentation is preferably the <i>Licentiate seminar</i> or <i>mid-term research outline seminar</i>.
<ul style="list-style-type: none"> ○ demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and 	<ul style="list-style-type: none"> ○ present and defend the doctoral thesis within four (4) years after enrollment to doctoral studies. The time spent in undergraduate

<p>use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work</p>	<p>teaching, other departmental duties, parental leave and/or sick leave will be added to the time limit,</p> <ul style="list-style-type: none"> ○ take responsibility for keeping the Individual Study Plan up to date.
<ul style="list-style-type: none"> ○ demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research 	<ul style="list-style-type: none"> ○ write a PhD-thesis on a specific topic within the subject of Machine Elements. The thesis must, in case of a composite thesis, consist of a comprehensive summary (>50 pages) and at least 4 appended scientific papers. The papers should be publishable in international journals with a peer-review procedure. At least 2 of the papers should be accepted for publication.
<ul style="list-style-type: none"> ○ 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 	<ul style="list-style-type: none"> ○ perform at least two presentations at international conferences, ○ perform at least one presentation at a national meeting open for the academic community and the society in general.
<ul style="list-style-type: none"> ○ demonstrate the ability to identify the need for further knowledge and 	<ul style="list-style-type: none"> ○ write a section in the thesis which describes “future work”, ○ write a PhD thesis proposal during the final year which addresses the need for further knowledge.
<ul style="list-style-type: none"> ○ 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. 	<ul style="list-style-type: none"> ○ teach in the undergraduate engineering programs, to act as project supervisor/coach in project based courses within the undergraduate engineering programs, or to act as co-supervisor in a master thesis project, ○ write a document with instructions about how to use the outcomes (equipment, software, protocols, methods, ...) which have been developed during the doctoral studies.
Judgement and approach	
<ul style="list-style-type: none"> ○ demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics. 	<ul style="list-style-type: none"> ○ demonstrate disciplinary rectitude by publishing in international journals with a peer-review procedure, ○ demonstrate ability to make assessments of research ethics by citing all relevant underlying work which have been utilized.
<ul style="list-style-type: none"> ○ 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. 	<ul style="list-style-type: none"> ○ Motivate how the conducted research has impacted the sustainable use of natural resources, energy consumption, and personal safety,

Appendix 2. Complementary skills, activities and learning outcomes

Intended Learning Outcomes for the PhD students in ME	Proposed activities to achieve an increased knowledge in ME
Leadership skills	
<ul style="list-style-type: none"> ○ increased knowledge in how to organize and plan activities for groups such as classes or lab groups. 	<ul style="list-style-type: none"> ○ undertake teaching and supervising undergraduate students in assignments and/or labs.
<ul style="list-style-type: none"> ○ gained experience from supervising and leading groups towards a predefined goal. 	<ul style="list-style-type: none"> ○ supervising projects related to his/her own research, e.g. in the undergraduate Tribology course.
<ul style="list-style-type: none"> ○ obtained increased knowledge in how to lead, supervise and organize in a way that provides structure and efficiency. 	<ul style="list-style-type: none"> ○ attend courses that contributes to developing leadership skills e.g. pedagogy, project management etc.
Project management skills	
<ul style="list-style-type: none"> ○ gained better understanding of how to plan, organize and structure projects. 	<ul style="list-style-type: none"> ○ take courses in project management, where the assignments in the course is applied in the PhD student's own project
<ul style="list-style-type: none"> ○ applied the acquired knowledge and reflected through discussion with peers about how the project could have been improved with time planning, structure in mind. 	<ul style="list-style-type: none"> ○ create a project plan of the PhD project and continuously followed up the activities and time plan.
<ul style="list-style-type: none"> ○ in a practical way been active in the supervision of a project with the successful outcome of a Master's thesis. 	<ul style="list-style-type: none"> ○ act as assistant supervisor of at least one master thesis project.
Funding applications	
<ul style="list-style-type: none"> ○ obtained an understanding of the process of applying for funding and how to increase the chances of receiving funding. 	<ul style="list-style-type: none"> ○ take courses in research funding and writing an application ○ support the supervisor in the application process for funding in the case where an application has to be written during the project.
Communication and presentation skills	
<ul style="list-style-type: none"> ○ developed presentation skills and technique for an audience of high competence in the field 	<ul style="list-style-type: none"> ○ present the research project every year at the PhD student conference at the division of ME ○ take a course in oral presentation skills with focus on defending presentation material and presentation structure.
<ul style="list-style-type: none"> ○ increased skills in presenting and discussing research results and ideas. 	<ul style="list-style-type: none"> ○ present important new results from the research and presenting interesting findings from research visits to the division.

<ul style="list-style-type: none"> ○ improved the skills in presenting research in a pedagogical way. 	<ul style="list-style-type: none"> ○ give lectures to undergraduate students.
<ul style="list-style-type: none"> ○ obtained a better understanding in how to present the specific research that can be understood by a person that has no scientific background 	<ul style="list-style-type: none"> ○ present his/her project in a popular scientific presentation for people that are not familiar with the field of research

Appendix 3. Getting started

This section contains important information for newly employed PhD students. The information is also relevant for PhD students that have just started working at the division and are unsure on how to carry out a task e.g. purchasing, travelling, etc. Important individuals at the department who can help you with administrative questions that may arise in the beginning of the third-cycle studies are listed in Table 1.

Table 1. List of individuals handling administrative questions at the division.

Name	Role	Contact information
Jens Hardell	Head of Division	jens.hardell@ltu.se
Birgitta Lidström	Department Administrator	birgitta.lidstrom@ltu.se
Viola Nilsson	Education Administrator	viola.nilsson@ltu.se
Carina Larsson	Project Economist	carina.larsson@ltu.se
Per Enqvist	Project Economist	per.enqvist@ltu.se

Pre departure

It is important to start looking for accommodation as early as possible. Register at Bostad Luleå and Studentbostadsservice, which allocate houses for Luleå's residents and LTU's students respectively. Registration at Bostad Luleå means a yearly fee that has to be payed to keep the position in the queue. Also, search in Blocket and Facebook. A handful of selected links that can be helpful are given below:

- Bostad Luleå: <https://www.bostadlulea.se/>
- Studenbostadsservice: <https://www.studentbostadsservice.se/>
- Blocket: https://www.blocket.se/bostad/uthyres?q=&c=&is=1&l=0&md=th&ca=1_9&w=1&m=9
- Facebook: <https://www.facebook.com/groups/185241421543279/>

Look for the information on the Skatteverket and Migrationsverket webpages about how to apply for a Swedish personal identity number (PN), which is required for opening a bank account, and how to enter Sweden.

- Skatteverket: www.Skatteverket.se
- Migrationsverket: www.Migrationsverket.se

Check with your supervisor or other person in charge about the terms and conditions of the contract in **detail**. If the contract is for less than one year it implies visa for less than 1 year. This therefore implies no proper PN and certain restrictions regarding opening a bank account etc.

Arrival

Apply for a civic number (e.g. PN) at Skatteverket (mentioned above). Again, if the contract and visa is for less than one year you are eligible to get a coordination number (CN), or in the case of more than one year, a PN. The processing time may vary from a few weeks to a few months which means that during the time you wait for your CN or PN, you cannot be employed. Application for CN is sent to Skatteverket by the department administrator.

Create your first version of your Individual Study Plan (ISP) together with your supervisor(s) and get it signed by the Head of Department (HoD). The template can be found at: <https://www.ltu.se/research/Utbildning-pa-forskarniva/Handbok/Mallar-utbildning-pa-forskarniva-1.57459?l=en>

Make sure that your application for admission and admission decision to third cycle courses and third cycle studies are submitted along with the ISP. The admission decision needs to be signed by the HoD. All the documents need to be submitted to the Department Administrator (DA) and the Education Administrator (EA). All forms needed for third cycle studies can be found on the following link: <https://www.ltu.se/internt/attrahera-studenter/Doktorandrekytering/Checklista?l=en>

Receive office keys from the DA (found in Table 1). Make sure to receive your LTU ID from the student reception desk (found in house B) and also talk to IT service (found in the library) regarding user accounts for log in etc. At the same time, make sure to open a library account at the library desk. Gather information from supervisor, DA and IT desk regarding telephony and IT hardware. Please visit the following link for information on how to order IT products: <https://www.ltu.se/internt/IT/Tjanster-och-produkter/Inkop-av-IT-produkter?l=en>

The documents needed in order to apply for a CN at Skatteverket are: employment contract, passport, visa and any other ID

Open a local bank account, preferably with the bank LTU has an official agreement with (ask DA for further information). If you have permanent civic number: open a long-term account.

If you do not have a permanent civic number: open a temporary account. Switch to long term account once in possession of a PN

If you wish to have your salary transferred to another bank or that your salary is deposited into a personal account (instead of physical cheque handed to you), you must complete a transfer order and send it to your bank in the catalogue, see the following link: <https://www.ltu.se/internt/Tjanster-och-stod/Blanketter-och-mallar/Personaladministrativa-blanketter>

Appendix 4. Information concerning day-to-day activities

This section deals with some of the everyday activities you will face as a PhD student at the division of ME. All the details here can be subject to change. Therefore, it is advised that the student consult colleagues in the division of ME before carrying out anything. Usually, a mentor, who has been working in LTU for a while, is assigned to a new student. The mentor can help with questions and doubts on how a task is carried out at the division of ME. Enquire with the Head of Division regarding your mentor

Purchase form

Before making any purchase, including e.g. travels, equipment etc., make sure to hand in a purchase form to any of the project economist (PE) found in Appendix 3. The form must be signed by the Chair Professor and/or Head of Division. Please refer to the flowchart below, se Figure i. For more information, please visit <https://www.ltu.se/internet/Tjanster-och-stod/Ekonomifragor/Kopa-in-varor-och-tjanster?l=en>. The purchase form can be found here: <https://www.ltu.se/pdfforms/order.htm>

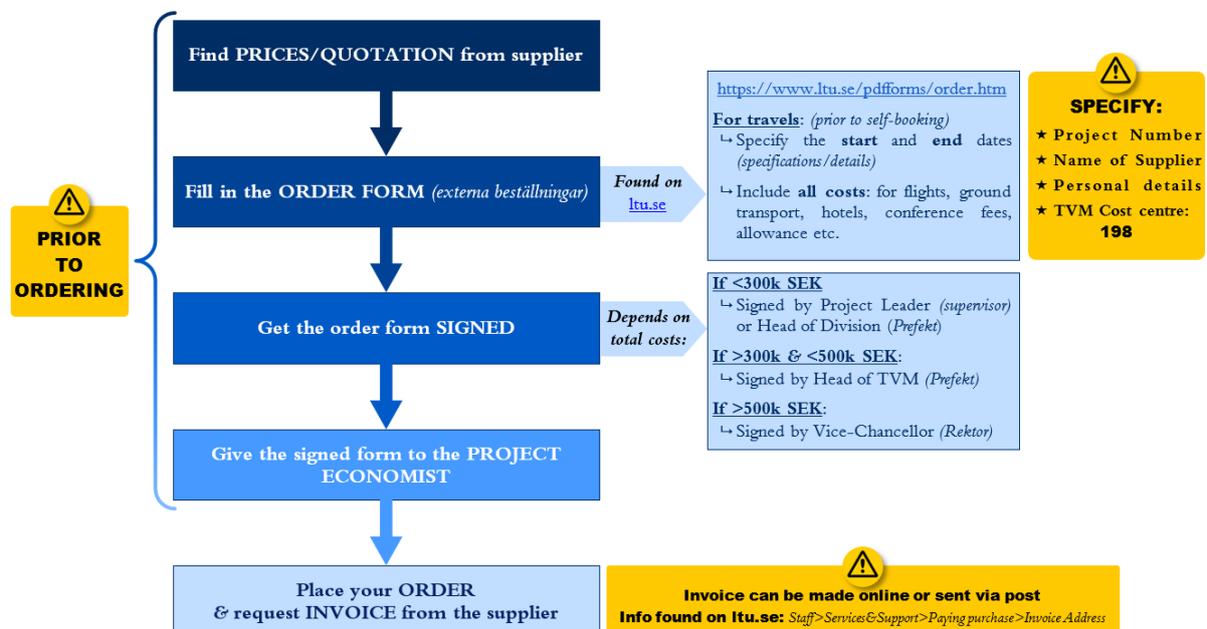


Figure i. Flowchart of purchasing at ME.

Travel policy

Doctoral students are responsible for their transport bookings. All bookings must be approved by your immediate superior prior to confirmation with the official travel agency (as of 2020 NEX travel Agency).

When ordering, you must provide the department cost centre, project number and the purpose of the trip. Read more on the travel portal of the LTU website: <https://www.ltu.se/internet/Min-anstallning/Resa-i-tjansten/Resor-och-Representation>.

After completing the trip, you should prepare a travel expense via the travel expense program Tur & Retur. Contact the DA and they will help you get started.

Vacation, sick leave and care for children

Vacation for PhD students is officially between the first Monday after midsummer and 28 or 31 days thereafter depending your age. If vacation is taken outside the normal vacation period, a separate form, sent out by the head of staff, has to be filled in and signed by your supervisor and Head of Division. Information about sick leave or care for children can be found on the following link: <https://www.ltu.se/internt/Min-anstallning/Sjuk/Sjukfranvaro-och-rehabilitering>

Industrial PhD

As an industrial PhD student at LTU, the individual is employed by a company and not LTU. Trips cannot be booked through LTU but instead has to be booked via the company itself. Furthermore, the salary and vacation is based on the employer's policies at the company itself and therefore not related to LTU's policies.

Legal office

At LTU, the legal office can be contacted in case of legal questions, for more information, see the following link: <https://www.ltu.se/internt/Tjanster-och-stod/Juridik>

Supervision and mentoring

If any changes to the supervision of the third cycle studies is made, a form has to be filled in that can be found on: <https://www.ltu.se/internt/Tjanster-och-stod/Blanketter-och-mallar/Utbildning-pa-forskarniva?l=en>

This form has to be filled and handed in to the EA when any change of supervision is made, i.e. if the assistant or principal supervisor is changed or in the case that an additional supervisor is added to the project.

The mentor stated in the ISP is supposed to act as the go-to person if the PhD students have general questions about information and procedures. Typical examples of what the mentor can help out with are e.g. travel bills, booking of travels, literature review tips, tips about courses and course content, books to read etc.

For publication of articles in scientific journals, the Vancouver recommendations should be used as guidelines (see <http://www.icmje.org/recommendations/>). There can be exceptions from these guidelines. The Vancouver rules state that authorship credit should be based on:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

In addition, the author list should be structured according to the following:

- Main contributor first (often the PhD student)
- Main principal investigator last (often main supervisor)
- In between main contributor and main PI the authors are listed according to contributions

- Starting from second author
- The corresponding author is chosen as:
 - PhD student during first 3 years
 - The main supervisor during the last period of the PhD
 - In order to guarantee that the paper becomes published

Miscellaneous

The university's general handbook for third cycle studies can be found at: <https://www.ltu.se/research/Utbildning-pa-forskarniva/Handbok?l=en>. Here you can find information on e.g. the organisational structure of LTU, courses, thesis defence, salary steps, etc.

The PhD student association, to which PhD students can register in order to meet PhDs from all the different divisions and get information relevant to their status, has a web page with a collection of important information, see the following link: <https://www.ltu.se/research/Utbildning-pa-forskarniva/Doktorandsektionen/Information-till-doktorander?l=en>. For further information, please refer to <https://www.ltu.se/research/Utbildning-pa-forskarniva/Doktorandsektionen?l=en>

Skype for business is available through the Office 2016, which is simply downloaded from the software centre. For more information, please visit: <https://www.ltu.se/ltu/it-support/IT-support-personal/Internet-och-molntjanster/Skype-for-foretag-1.157516?l=en>