

Requirements for Preparing a Master's Thesis at the TU Institute of Informatics

1. The initial topic of the Master's thesis shall be approved by student's Supervisor and the Head of Study Programme and submitted to the Head of Studies on a respective form by **1st of April of the first year of study** ([registration form](http://minitorn.cs.tlu.ee/instituut/english_web/documents/PDF/master_thesis_subject_registration_form2.pdf): http://minitorn.cs.tlu.ee/instituut/english_web/documents/PDF/master_thesis_subject_registration_form2.pdf).
2. In order to submit a thesis for defence within the current academic year, the student shall notify the Study Assistant (by e-mail) of his/her **title of the thesis**, approved by the Supervisor, **in a linguistically correct form in Estonian as well as in English** (in conformity with the APA standard), by no later than **1st of October**. This shall be the basis for issuing an order at the Institute for confirming the topic of a Master's thesis, and assigning of one's Supervisor for all students planning to defend their final thesis in the autumn or spring semester of ongoing academic year. This order provides a student with the right of supervision for **two semesters** on the registered topic. Academic leave shall not extend the period of supervision.
3. Additionally, the Study Assistant shall be notified of the submission of the thesis for defence within the ongoing semester by no later than 1st of December (in the autumn) and on 15th of April (in the spring). The notices shall form a basis for organizing a defence session and the respective dates thereof.
4. The purpose of preparing a Master's thesis is to enable students to conduct in-depth research and analysis of a chosen matter, based on modern theories and research methods in the area of the study programme, and to develop skills for writing academic texts.
A student, who has completed a Master's thesis:
 - ⤴ knows the requirements applicable to academic texts;
 - ⤴ is able to individually state an actual, executable and an adequate research question, as well as choose a proper research methodology;
 - ⤴ Is able to carry out an in-depth analysis of other authors' publications in the area of the posed research question, to solve the research question through applying properly the chosen research methodology, and to draw conclusions and provide suggestions, based on the results gained.
5. The choice of research topic for one's Master's thesis is relatively free – basically all topics connected with the study area of a study programme are suitable. Also, for students with no personal preference regarding the topic, a special website has been created, titled as „[Topics for student research papers](http://minitorn.cs.tlu.ee/teemad/)“ (<http://minitorn.cs.tlu.ee/teemad/>). Upon finding a suitable research topic, it may be helpful to browse through some previously [defended Master's theses](http://minitorn.cs.tlu.ee/teemad/?action=set_active_tab&key=2) (http://minitorn.cs.tlu.ee/teemad/?action=set_active_tab&key=2) or [topics already registered](http://minitorn.tlu.ee/teemaderegister/) (<http://minitorn.tlu.ee/teemaderegister/>).

6. A Master's thesis shall have a clearly stated and worded research goal (whether a research assignment, a research question, a hypothesis etc.). In general, the research goal is derived from an actual problematic issue and the Master's thesis is targeted at solving the issue. The goal of a thesis could also be the developing of a practical application (a program/ a learning guide/ a web-based application/ ...), but in such case, the application will be a supplementary part of the thesis, whereas the thesis itself shall consist of the compulsory components described below. In general, the volume of a Master's thesis shall be 40-60 pages of printed text (1 page = 2,250 characters) in case of research worth of 30 ECP/ECTS; whereas in case of research worth of 15-21 ECP/ECTS, the volume shall be 30-50 pages.

7. The content and appearance of a Master's thesis shall comply with the good practice of an academic institution. It is not acceptable for the thesis to be composed in the form of referential overview, lacking substantive and systematic analysis and synthesis of the texts adding to the existing knowledge/information in the field. A Master's thesis may become a further development of one's Bachelor's thesis. In such case, the introduction of the Master's thesis shall clearly distinguish the parts derived from a Bachelor's thesis and the ones composed within the master's level research, whereas the volume of the content with novel nature (i.e. not defended earlier as part of the Bachelor's thesis), shall correspond to the expected volume of a Master's thesis.

For more information, see "[Most Frequent General Quality Problems in the Master's Theses](http://www.cs.tlu.ee/instituut/nouded/magistri_too/yldised_kvaliteediprobleemid/mag_t88de_yld_kval_n6uded.pdf)" (http://www.cs.tlu.ee/instituut/nouded/magistri_too/yldised_kvaliteediprobleemid/mag_t88de_yld_kval_n6uded.pdf).

8. The **compulsory** components of a Master's thesis are:

- ⤴ A title page – name of the university and the institute, title of the thesis, the type of the thesis, full name of a student, full name of a Supervisor, and the signatures of the Supervisor and the Head of the Institute, together with the dates of signing (approving the acceptance of the thesis for defence), date and place of submission of the thesis.
- ⤴ An author's declaration, where the author of the thesis declares that the thesis concerned is the result of his/her independent research and it has not been previously submitted for a defence.
- ⤴ A non-exclusive licence for the reproduction and publication of the thesis (see [the example](http://www.tlu.ee/UserFiles/%C3%95ppeosakond/%C3%95ppet%C3%B6%C3%B6/Inglk%20avalduste%20vormid/L%C3%B5put%C3%B6%C3%B6de%20lihtlitsents_inglise%20keeles.rtf): http://www.tlu.ee/UserFiles/%C3%95ppeosakond/%C3%95ppet%C3%B6%C3%B6/Inglk%20avalduste%20vormid/L%C3%B5put%C3%B6%C3%B6de%20lihtlitsents_inglise%20keeles.rtf).
- ⤴ A table of contents.
- ⤴ An introduction – rationale for selecting the topic, actuality/importance /novelty of it, the justification/rationale/reasons for the goal and assignments chosen, methods used for reaching the goal.
- ⤴ An overview of the existing knowledge in the research area.
- ⤴ A rationale applied research or development methodology.
- ⤴ An analysis and synthesis of an existing and/or new/to be collected/to be developed matter, the results or solutions derived in the research process, an interpretation of these, and conclusions reached. With the permission of the Supervisor, this part of the thesis may also include the main results and the discussion/analysis based on these results in articles previously published or submitted for publication by the student (copies of the articles shall be enclosed as Annexes). Should these articles be composed in co-authorship, the introductory part of the thesis must clearly state the contribution of the Master's student therein (NB! The main part of the Master's thesis cannot be solely the application created or its description).

- ⤴ A summary – the main results and conclusions of the thesis, analysis of the fulfilment of the thesis goal, proposals for further development of the thesis and further research in the study area.
- ⤴ References – only the literature actually referred to in the thesis;
- ⤴ A summary in a foreign language (in English for the thesis in Estonian, and vice versa) – a short overview of the whole thesis, including the title of the thesis in a foreign language.
- ⤴ If necessary, the following components may be included: a list of abbreviations, a list of foreign terminology, and other annexes.

9. Referencing is mandatory in every case of quoting or use of ideas from existing sources (literature, internet, etc.). As an exception, and while reasonably justified, it is allowed to waive from direct quoting in case of learning guide, but a proper referencing is always obligatory in the textual body of the thesis. Referencing is done preferably according to the APA standard (see <http://www.apastyle.org/>), indicating the name/year in the text body, where family name(s) of the author(s), the publishing year and page numbers are presented in brackets, for example (Murakas 2001, 45), whereas the un-numbered list of references is sorted according to the authors' family names. With the permission of one's supervisor, the Chicago referencing standard may also be applied (for example <http://library.williams.edu/citing/styles/chicago1.php>).

10. Above all the original sources shall be quoted; the percentage of encyclopaedias (incl. Wikipedia) and study resources shall be less than 10%. In case of web sources, it is not sufficient to present only the URL address in the list of references, but it is necessary to also provide the title, author(s) and the last day of viewing the source referred.

11. The Institute of Informatics has not established a specific style for the layout of a thesis. The most important is to apply the same style throughout the entire thesis paper and present it in a pleasant and a well-readable manner.

12. NB! At present Tallinn University has not confirmed a unified layout style. Before starting to design your thesis, please check whether any new regulations may have been established meanwhile. In such case these need to be followed. When necessary, similar regulations of other institutes may be examined).

It is compulsory to:

- ⤴ Bind the thesis paper properly (suitable are glue binding, comb or spiral binding; instant binders and clips, etc. are not acceptable).
- ⤴ The discs and CDs accompanying the thesis need to be attached in a manner, keeping these firmly in place when browsing the thesis (for example in a paper or plastic envelope).
- ⤴ Number all titles of the main body of the thesis.
- ⤴ Number every table and chart, and provide a title or a footnote which explains well the essence of the tables or charts in the thesis. The tables and charts shall be properly referenced in the text body.
- ⤴ Number the pages.

It is advisable to:

- ⤴ Apply 1.5 line spacing and font size of no more than 12 points in the main text body;
- ⤴ Use double-sided alignment of text.

In case of insufficient experience in preparing academic research papers, some help and ideas may be found from the following guide:

Kraus, A. (2002) Kirjalike tööde vormistamise juhend. Tallinn: EBS.

13. The thesis defence session takes place during the period defined by the academic calendar. As a rule, the thesis shall be submitted to the Institute one month prior to defence sessions. A deadline is set for each semester.

14. The thesis paper must be submitted to the Institute by the deadline (as a bound copy, together with a digital copy on a CD), whereby the advisor has previously agreed to allow the thesis to be defended, confirming this with a signature on the title page of the thesis paper. It is recommended that by the same deadline the advisor proposes to the Institute a possible reviewer for the thesis paper.

15. The thesis paper has to be written in the language of the study programme. The application to compose a thesis paper in any other language is accepted only with a good reason, which is clearly and substantively justified in the topic registration form. In case of approval, the topic is registered with a note regarding the acceptable language. If refused, the student will be notified, and is expected to withdraw the application for using another language, or in agreement with his/her supervisor present a new topic on a registration form.

16. The student shall take into account that all defended theses will be published on the Institute's website. The non-disclosure of a thesis may only be applied for with compelling reasons, by submitting an application confirmed by the representative of a party demanding the non-disclosure, explaining the request and the substantial reasons for it. The application shall be presented to the Head of Studies for approval no later than by April 15th in a spring semester and by December 1st in an autumn semester.

17. The Institute will confirm the reviewer for the thesis and send him/her the link to the digital version of the thesis to be reviewed. In case the reviewer wishes to obtain also the paper version of the thesis, in addition to the digital version, the student is obliged to make an additional bound copy of his/her thesis and to deliver it to the reviewer (delivering it personally; asking someone else to deliver it, etc.).

18. A defence session is public. As an exception, a defence of the final thesis be declared as closed session, in case public defence is not allowed according to certain national directives or other regulations (for example, applying for a closed defence session when the final thesis is referring to information sourced from the National Defence Forces; yet, the Institute does not find it reasonably justified in case of commercial interests. In the latter case, during the defence session these parts of information are presented, which do not damage any commercial interests). A defence session may be applied for to be closed, by making a respective note on the registration form, and clearly stating the substantial reasons and relevant documents. Upon a positive decision, the thesis topic shall be registered with a note regarding the closed defence session. Otherwise, the student shall be informed of the refusal and he/she shall either withdraw the application for a closed defence session or, with the permission of his or her Supervisor, submit a registration form with a new topic.

19. A defence of the final thesis is carried out in the language of the study programme. A Master's student has 20 minutes for presenting his/her final thesis, explaining foremost the

goals of his/her thesis, methods chosen for achieving these, and the main results of the research.

Supervision

A Master's thesis is composed as a student's individual study, which is carried out in cooperation with a Supervisor.

The role of a supervisor is to give guidance – to help with the selection/specification of the topic and with the compilation of a research plan; to recommend suitable literature, and to monitor the conformity of the thesis with the substantive and formal requirements, etc.

The student is expected of the student to be the leading party in selecting a research topic and finding a supervisor, addressing the supervisor with a respective request. With regard to a potential topic and a supervisor, the student may turn to the Head of Studies, as well as the Head of the Institute for consulting. The supervision activity is commenced with the respective agreement between the student and the supervisor, of which the Institute shall be notified by the specified deadline.

Preferably a supervisor should hold a Doctoral degree (or an equivalent); however, supervisors with a Master's degree and recognition as an outstanding specialist have also been considered acceptable.

The supervisor may also be selected from other organizational bodies besides the Institute of Informatics. In case of a supervisor, not working at the Tallinn University and it would be his/her first case of supervision, the Institute shall appoint a co-supervisor from within the University.

A thesis may have two supervisors. In a situation where the substantive Supervisor has no Doctoral degree or lacks in the experience of supervising academic theses, it is advisable for the student to address the Head of the Institute or the Head of Studies for finding a second supervisor as a so-called academic Supervisor for the thesis. The theses with an interdisciplinary topic (i.e. the use/application of IT solutions in other fields of life) may have a so-called substantive supervisor, who is aware of the developments in the field as well as a so-called technical supervisor who consults the student regarding the design and development of IT solutions. In case of any doubts in choosing a topic and/or a supervisor, it is recommended to consult with the Head of Studies or a member of the academic staff. The supervision of a Master's thesis shall be remunerated by the Institute of Informatics after the successful defence of the thesis.

The information for students and supervisors to consider and comply with

The student	The supervisor
... shall be the initiating party by: contacting the Supervisor for scheduling the consultation sessions; preparing the artefacts and questions; submitting the interim versions of the thesis to the Supervisor for examination, etc.;	...shall provide the student with his/her contact details (in general, the supervisor may be contacted by e-mail). The supervisor is not obliged to disclose his/her personal or home phone number. ... is not expected to seek contact with a "disappeared" student nor request submitting of any content.
...cannot presume that the Supervisor is	...shall reply to the student within a week

<p>able to reply to his/her request immediately. ...may turn to the Study Assistant of the Head of Studies, in case he/she has failed to receive a reply from the supervisor within a week, in order to establish whether there is an exceptional case involved (business trip, illness, etc.) regarding the Supervisor. ...may address the Head of the Institute, in case the repeated attempts to contact with the supervisor fail or the Supervisor repeatedly replies with a delay.</p>	<p>after the student's request. In exceptional cases (e.g. business trip, illness, etc.) the period for replying may be longer. Should the supervisor fail to provide substantive feedback during the expected time period (e.g. due to extensive work load), he/she shall notify the student thereof and provide a date by which the substantive feedback can be delivered. ...shall take into account the expected amount of supervision of at least two hours per one ECP/ECTS.</p>
<p>...shall carry out a check on spelling and elementary grammar rules before submitting the thesis or parts of it to the supervisor. ...shall be responsible for the spelling and style of the final text. The multitude of spelling mistakes and the difficulty to read the text or an inadequate style is a definite reason for lowering the grade.</p>	<p>... is not obliged to correct spelling and grammar mistakes, yet should notify the student of potential style errors in the thesis text and when needed, provide recommendations for the improving the readability of the text.</p>
<p>...shall, when requested by the supervisor, indicate the improvements and supplements made to the text compared to the previous version of text, in order to facilitate the work of the supervisor.</p>	<p>...may refuse to provide feedback in case the student has not indicated the improvements and supplements of the text (compared to the already commented version).</p>
<p>... in exceptional cases, may change his/her supervisor and/or topic, by presenting the Institute with a justification, and by notifying the (former) supervisor thereof.</p>	<p>...may discontinue working with the student, in case he/she fails to provide any thesis content within a year.</p>
<p>... shall submit the final (unbound) version of the thesis to the supervisor at least 1 week before the deadline set by the Institute for submitting the theses.</p>	<p>...may refuse to allow the submission of the thesis for a defence session without a reason, in case the final version of the thesis has not been submitted to him/her at least one week before the submission deadline, set by the Institute. ...is not allowed to sign the submitted thesis (to allow the thesis to be defended), if he/she has not examined the thesis or is not convinced that the thesis is in conformity with the requirements set for a Master's thesis.</p>
<p>...when necessary, shall inform the non-university supervisor about the rules and documents (incl. the current document)</p>	<p>...shall be aware of/familiar with the requirements applying for the Master's theses at the Tallinn University Institute of</p>

regulating Master's studies at the Tallinn University Institute of Informatics.	Informatics, and abide by them upon the supervision.
...upon any doubts or issues with the interpretation of current guidelines, please turn to the Head of the Institute in good time.	
The Institute.... may refuse to allow a thesis to be submitted for a defence, in case it is delivered in an unsatisfactory format or binding, as well as in case of a thesis consisting of proven plagiarism. After the supervisor has given his/her permission for the thesis to be submitted for the defence, and the thesis has been submitted in due time, the Institute has no right to refrain from allowing the thesis to be defended due to an inadequacy of the substantive part of the thesis. The adequacy of a thesis with substantive requirements shall be decided by the Thesis Defence Committee.	

Five General Quality Criteria as a Basis for Assessment of a Thesis, Recommended to be followed during the Preparation and Supervision of a Thesis.

(NB! See also the guidelines for reviewers and supervisors, which the assessment of a thesis will be based upon

http://minitorn.cs.tlu.ee/instituut/english_web/documents/retsensendi_hinnang_14_11_2006eng.rtf).

⤴ Significance of Importance and integrity – meaning that the research problems and goals set are necessary/vital from the viewpoint of someone/something which therefore gives a clear value to the thesis from the viewpoint of science and/or practice, and none of the stages of the research have grossed the ethical code.

⤴ Persuasiveness of argumentation – meaning that there is a harmony within the research problems, chosen methods and conclusions reached, whereas all methodological aspects and choices are sufficiently described and grounded.

⤴ Proficiency in using methods – meaning that the use of methods, for example, on data collection and data analysis, is competent and productive. Depending on the nature of the research it would also cover the correctness of sampling, the quality of research instruments or of conducting interviews, etc.

⤴ Comprehensiveness and roundedness – meaning that the thesis provides new knowledge/solutions, the thesis has a reasonably wide yet not vague scope (i.e. Considered are also the studies conducted outside of a specific school of thought, in which the researcher himself/herself is working) and more, that the volume of the content and form (i.e. the number of pages) as well as the weights of theoretical and empirical parts of the thesis are proportional.

⤴ Correctness of presentation and layout – meaning that the thesis has been prepared in a linguistically correct manner, the tables/diagrams/charts/schemes are relevant as well as impeccable in content and design; the thesis has been designed according to the requirements specified.