



TAMPERE UNIVERSITY OF TECHNOLOGY

Faculty of Computing and Electrical Engineering

ADDITIONAL MASTER'S THESIS INSTRUCTIONS BY THE FACULTY OF COMPUTING AND ELECTRICAL ENGINEERING

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Additional instructions to complement TUT's thesis-writing guide.

1. WHAT IS A MASTER'S THESIS

The Master's Thesis is a graduate thesis written at the final stage of studies and accounting for a total of 30 credits (20 credit units in the old system). An academic thesis shall demonstrate the student's knowledge of the major subject and the work methods entailed therein, as well as his/her capability of mature, independent work.

The Master's Thesis must form an independent entity. This means that the reader must be able to understand the thesis in terms of content and meaning. The presumed target audience comprises readers who are accustomed to technical literature of the field in question but don't have any special expertise in the thesis topic.

Usually, Master's Theses are written by one student alone, but teamwork by two students is also possible. A joint thesis is a viable option in cases where students work on closely related topics in the same project. In joint theses, the sections completed independently by each student must be clearly indicated.

Completed Master's Theses are bound in black covers. Approved theses are available for reading in the library. TUT's thesis-writing guide also contains guidelines for the thesis layout. The guide is available on POP (www.tut.fi/pop > Study Info > Degree studies > Guide for thesis writing).

2. STARTING THE MASTER'S THESIS

The Master's Thesis shall deal with the student's major subject, and a good time to start the thesis process is when the core professional studies, as well as all preceding studies, have been completed. The recommended amount of studies completed before starting the Master's Thesis is 120 credits in the old system or more than 60 credits of the graduate phase in the new degree structure, plus an accepted practical training period. According to the new degree structure, the student must complete the Bachelor's degree before having the Master's Thesis topic approved, unless the student has directly entered the Master's degree cycle.

It is wise to start looking for thesis-writing positions in companies well in advance before completing the last courses. TUT's Career Services can help with this. Master's Theses can be commissioned, for example, by private companies or TUT departments. Often, theses are written for previous summer job employers.

3. MASTER'S THESIS TOPIC AND EXAMINERS

The topics of Master's Theses vary greatly. Topics can be suggested by industry or University representatives, or the student him/herself, based on his/her areas of interest. It has become common practice that the thesis deals with a practical project completed by the author or part thereof. The thesis can contain literature research, hardware or software design or construction, calculation method development, measuring and result analyses – i.e. tasks usually belonging to the work of graduated Masters of Science in the field of engineering and research. The University is continuously undertaking various research projects that might offer interesting Master's Thesis topics.

The examiner is always assigned for Master's Theses written at the Faculty of Computing and Electrical Engineering. TUT's Degree Regulations state that the examiner must be a TUT professor representing the student's major subject, a person holding a Doctor's degree, or another teacher appointed by the Faculty Council for some other reason. The possible supervisor usually represents the organization that has commissioned the thesis. If the thesis is written for TUT, a separate supervisor may not be necessary because the examiner can also serve as the supervisor. However, statements are always required from two people. If the thesis is written for a TUT department other than that hosting the author's major subject, one of the statements is given by a representative of the commissioning department, and the same person usually also serves as the thesis supervisor. One of the statement providers – usually the supervisor – should have at least the Master's degree.

The student can influence the choice of examiner. When the student has a suggestion or an idea concerning the topic of his/her Master's Thesis, he/she contacts the professor responsible for the field in question. The general aim is that the examiner's expertise and field of teaching are as closely related to the thesis topic as possible. With some topics, there may be only one clear expert in the field within TUT, whereas some topics may provide a choice between several possible examiners.

Based on an application addressed to the Faculty Council, the Faculty Council confirms the thesis topic, examiner, and the language of the thesis, which shall be Finnish, Swedish or English. The application concerning the topic and examiner should be submitted well in advance, because it is impossible to approve a completed thesis at the same meeting as the topic. The application must be submitted to the Faculty Office no later than 14 days before the meeting. The student will be informed of the decision after the meeting. Because the thesis topic is subject to approval by the Faculty Council, minor changes in the thesis title can be made with the examiner's consent.

4. MASTER'S THESIS FINANCING

The Master's Thesis is usually written as part of salaried employment or financed with a scholarship or the study grant. In comparison with scholarship financing, it should be noted that only salaried employees are eligible for employment benefits such as sick leave pay, pension, insurance, unemployment fund membership, and legal protection. While scholarships are non-taxable, they are, nevertheless, considered as income when determining one's right to the study grant. Despite this, writing a Master's Thesis financed with a scholarship does not constitute an employment relationship or provide grounds for any social benefits. For more information about employees' legal rights and salary issues, see, e.g., www.tek.fi. For information on scholarships, see the TUT Foundation's website (www.tut.fi > English > Services for Business)

5. MASTER'S THESIS SEMINAR

In the Master's Thesis seminar, thesis-writers present their topics and theses to each other. The seminar is an integral part of the thesis-writing process. See the departments' websites for specific guidelines and instructions.

6. WRITING AND SUPERVISING A THESIS

The Master's Thesis must be written independently by the author, but the examiner and other supervisors can offer concrete and even highly detailed advice. Thesis-writing is usually a full-time work and as such, the target time for completing the thesis is six months.

In the initial phase of the thesis-writing process, the student compiles a plan that outlines the goal of the work, the research and engineering methods to be used, as well as a schedule for the process. The plan must be jointly approved by all parties involved (the examiner, any other supervisors and the author). The parties agree on the means and frequency of communications; for example, how often and in which format the author shall present the progress of the thesis. Supervising and guidance usually takes place in meetings and by e-mail.

In the initial phase, the most important task is to get familiar with the topic. Once the author has acquired sufficient basic knowledge of the topic, he/she agrees on the scope of the thesis with the examiner and supervisor. It is wise to draw up a table of contents at an early phase, featuring the headings of the thesis' chapters, their contents and estimated extents in pages. The table of contents should be discussed with the examiner and supervisor, because this phase entails laying the foundation of the actual thesis structure.

It is good to write the thesis text along with conducting the related work. In this way, there is enough time between the first drafts and the final text, which makes it easier to detect any factual, stylistic or linguistic errors. The Master's Thesis must comply with the requirements set for publications of a rather large distribution. The TUT Guide for Thesis Writing outlines the layout of Master's Theses. The guide also contains a document template complete with the required settings. The Master's Thesis must comprise at least 42 pages of body text (from Introduction through the last chapter), and the commonly observed maximum length of a thesis is one hundred pages.

7. MATURITY TEST

The maturity test is taken during the final phase of the thesis-writing process. With the maturity test the student shall demonstrate his/her command of the topic of the thesis and native language skills. The maturity test is completed as part of the Master's Thesis Seminar.

In international degree programmes, the Faculty's Dean shall determine the language in which the maturity test is to be taken, if the student's native language of education is other than Finnish or Swedish. In this case, the maturity test shall only demonstrate the student's command of the thesis topic. Exchange students writing their Master's Theses at TUT shall not take the maturity test.

8. COMPLETING THE MASTER'S THESIS

Flawless completion of the Master's Thesis is based on an agreement between the author and the supervisor. They agree on such matters as the schedules, examination and binding of the thesis.

When the author considers the thesis to be complete, he/she submits it to the examiner for examination. After the examination, the author and examiner discuss the thesis and agree on any revisions and corrections to be made, as well as a possible re-examination.

If it seems likely that the completion of the thesis will be delayed by several months, the student should discuss with the supervisor and examiner and agree on actions to take; the available options include rescheduling or changing the scope of the thesis. For example, a Master's Thesis written within a product development project can be limited to only deal with the definition and design phase or some other sensible entity.

When the thesis manuscript is ready, the author agrees on the copying, binding and evaluation schedule with the examiner. In case of conflict, the Head of the degree program, Vice Dean or Dean shall resolve the matter. The Thesis is bound in black hard

covers according to the thesis-writing guide. Enough time should be reserved for printing and binding, and the schedule should be agreed in advance with printing and binding company.

The student submits one copy of the bound thesis to the examiner and two copies for the Faculty. Upon separate agreement, the supervisor can also receive a copy. One month should be reserved for examining the thesis and issuing the statement.

The student is responsible for the thesis printing and binding costs, but the commissioner can be asked to participate in the costs.

9. APPROVING THE MASTER'S THESIS

A written application concerning the evaluation and approval of a Master's Thesis is submitted to the Faculty Council using a standard form. The application form complete with the necessary appendices, as well as the thesis bound in black covers are submitted to the Faculty Office in two copies, one of which will be sent to the library later. The material must be submitted to the Faculty for evaluation at least 14 days before the Faculty Council meeting in which the thesis is to be evaluated.

The examiner issues a written statement on the thesis, including a grade proposal, for the Faculty Council. The supervisor representing the commissioner of the thesis can also issue a written statement for the Faculty Council, but this statement shall not include a grade proposal. The Faculty Council decides on the approval and grade of the thesis on the basis of the written statements.

The thesis author is entitled to receive the statements for information one week before the Faculty Council meeting. The author can present his/her arguments concerning the proposed grade to the Faculty Council orally or in writing.

Approved Master's Theses are graded in accordance with the Degree Regulation: excellent (5), very good (4), good (3), highly satisfactory (2), and satisfactory (1). The evaluation basis is described in a separate evaluation instructions document.

Students who disagree with the thesis grade and evaluation can submit a written request for correction to the Faculty Council. The request must be submitted within two weeks after the evaluation (the Faculty Council meeting). If the student still disagrees with the decision concerning the request for correction, he/she can further subject the matter for handling by the Education Council within two weeks after the latest decision by the Faculty Council.

Master's Theses are public documents. If a thesis contains confidential information, the processing and reporting of such information must be separately agreed on with the

commissioner and supervisor. Further information on the handling of confidential theses is available from the Faculty.

10. GRADUATING

Students can apply for the certificate of the completed M. Sc. degree in conjunction with having the Master's Thesis approved or later. Instructions on the completion of degrees are available on the Faculty's website and on POP.