

GUIDELINES ON MASTER'S THESIS PROJECT

The Master's thesis

The Master's thesis is an extensive, written final project based on a research scheme, carried out on a topic related to the student's field of study. The thesis is an independent part of the advanced study module, not a final exam representing the whole master's degree. The grade of the thesis will be taken into account when grading the advanced studies. The student writes the thesis independently, supported by supervisor.

The scope of the Master's thesis is 30 ECTS. The standard contribution for one credit is 27 hours. Thus, a 30 ECTS thesis corresponds to 810 hours of work, which corresponds to approximately 6 months of full-time work. As a part of the supervision agreement, an objective schedule is agreed for the project

The types of Master's thesis in the Faculty of Mathematics and Science:

Monography means an integrated work that typically comprises of only one volume. All Master's theses in the Faculty of Mathematics and Science include a summary and an introduction, in other parts theses follow scientific practices. The research objectives and motivation are presented in the introduction. A thesis summary written in Finnish can be accepted as evidence of maturity in subject if the student has written a maturity exam during bachelor studies. Monography is the most common thesis type.

Thesis as pair work: Sometimes the research objectives are such that it is reasonable to complete the thesis as pair work. For example, the topic can be too extensive for a single thesis and is not suitable for splitting into smaller entities.

A scientific article with an introduction is a good choice when the results of the thesis project are, primarily, planned to be published in a scientific magazine. The article thesis differs from the traditional monography in that it has two parts: the to-be-published article and an introduction. The introduction is considerably shorter than a typical monography. A more detailed description of the article thesis is presented in attachment 1.

Both thesis as pair work and article thesis are less common at the Faculty of Mathematics and Science. In both cases, it is essential to be able to indicate the student's share of work in the thesis project and to discuss assessment before beginning the thesis project.

Regardless of the thesis type, the Faculty of Mathematics and Science wishes to encourage students to write separate research publications based on their theses in case a suitable publishing channel exists. If the Master's thesis has not been completed within 12 months since the agreed time has passed, the supervisor or peer researchers have the right to use the material and data collected during the project and owned by the University of

Jyväskylä for writing research publications, also on the same topic. All parties should always try to seek joint solutions.

Responsibilities of the supervisor and the student

A responsible supervisor will be appointed for the thesis project, but in addition there can be other supervisors. The responsible supervisor is employed by the University of Jyväskylä and has a doctoral degree. The second supervisor can be, for example, a doctoral researcher working in the research group or an expert working outside the university. An equal cannot act as another supervisor.

The responsible supervisor ensures that sufficient guidance is available and the project advances on schedule. Even though the second supervisor may be the real expert on the topic of the thesis, especially in thesis projects carried out in industry, it is the duty of the responsible supervisor to evaluate the suitability of the topic as a thesis in the field. The responsible supervisor also sees to that the written composition of the thesis fulfills the thesis requirements of the Department of Chemistry.

In addition, a compulsory part of the Master's thesis is Thesis Seminar which obliges both the supervisor and the student. The content of Thesis Seminar is specified in the curriculum (see [more detailed content and obligations](#). Students in Master's Degree programme in Nanoscience see [more detailed content](#).)

The student is responsible for the content of the text and for following good scientific practice, such as avoiding plagiarism. In connection with signing the supervision agreement, the responsible supervisor and the student discuss good scientific practice and the student will find out about the university's instructions. All Master's theses will be checked for originality using Turnitin -software before the thesis is evaluated. The software looks for similarities in previously published texts. Some similarities are acceptable, such as definitions, references or direct quotations. Thus, all findings of the Turnitin -software must be considered case by case.

The student has the right to decide which version to submit for reviewing. From the point of view of the assessment process described later, it is clearest that the version marked "final" by the student in Turnitin is reviewed and the resulting report is checked during the assessment process. In the context of evaluation, this day is also considered to be the date of completion of the work (not the date of evaluation of the work). No comments or changes will be made to the final version thus determined.

In connection with the preparation of the supervision agreement, the student and the responsible supervisor must agree on supervision practices and communication, and define concrete checkpoints for the thesis project. In particular, the student should be made aware that active seeking of guidance does not jeopardize the assessment of the student's independence. Both parties may raise the subject of redefining the topic and the project if the scope of the work becomes unnecessarily large or the schedule becomes unreasonable.

Scheduling

At the start of the work, a realistic timetable is drawn up, on the basis of which an estimate of the date by which the thesis would be submitted for evaluation is recorded in the supervision agreement. The schedule should aim for master's studies to be completed within the two-year target period. The recorded date is used as a measure of progress in the project schedule. If necessary, the estimate will be updated. Obvious reasons for updating the schedule are e.g. parental leave, health reasons, military service, or student-independent delays, such as breakage of measurement equipment or changes to the schedule dictated by a non-university partner. In other respects, the supervisor and the student discuss the schedule and changes needed, taking into consideration the individual features of the thesis project, such as the fluency of studies as a whole. At the Department of Chemistry, the student documents the change in the jointly agreed schedule by adding a free-form appendix to the supervision agreement already made.

In connection with the supervision agreement, it is important that the student and the supervisor discuss the use of time to promote the thesis. The thesis project can be started when the student has both an actual intention and time to invest in promoting the project. Significant course workload or part-time working for livelihood can make it difficult to promote work effectively. Thus, the supervisor and the students should agree on checkpoints for the thesis project and ways to monitor the progress of the work and its target schedule. Signing the supervision agreement is interpreted as reaching common understanding.

The assessment process should not surprise the student

The assessment process is regulated in the [university's degree regulations](#). The assessment and evaluation process for the master's thesis at the University of Jyväskylä is summarized in [a linked diagram](#).

The actual assessment process begins with the student submitting the final version to be assessed for both Turnitin inspection in Moodle to course space KEMS9550 Master's Thesis and Vasara system ([instructions](#)). If the Turnitin report does not give rise to any observations, two reviewers will be appointed for the work by the vice head responsible for education at the department. Reviewers must fulfill the following criteria

- At least one of the reviewers must have doctoral degree.
- One of the reviewers may be the supervisor of the thesis, but not both.

Usually one of the reviewers is the supervisor of the thesis. If the reviewer is an expert outside of the university, he/she must also have at least a master's degree.

The reviewers have one month to review and evaluate the thesis. The thesis is evaluated according to [the assessment matrix of the department](#). Reviewers give their opinion on the thesis in Vasara, ie. give a numerical grade and write a report in Vasara. If the reviewers disagree on the grade, each will write its own report. The student will receive a notification of the completion of the evaluation report via email through Vasara. After that, the student has 14 days to react to the assessment, either to suspend the assessment, leave a response, or accept the assessment as it is. If the students do not respond within 14 days, the assessment will be interpreted as accepted

Suspension of the assessment process or submission of a response are exceptional situations in the evaluation. When time allows, it is always a good idea to have a discussion between the student, the responsible supervisor and the vice head responsible for education at the department in order to find the best way to proceed. The student always makes the final decision on the next steps and is responsible for them.

Suspension of assessment means that the student intends to make significant changes to the thesis and the thesis will be reassessed after the changes. When the assessment process is suspended, the student and the supervisor discuss what concrete actions can significantly improve the thesis. Based on the discussion, the supervisor prepares a document on the agreed measures. The document and the original assessment and evaluation statement form the basis for the re-assessment of the thesis. The assessment process can be suspended only once.

Leaving a response to the evaluation statement means that the student feels that they deserve a better grade for their thesis as it is. In this case, no changes are made to the thesis, but a third reviewer is appointed, who has the assessment and opinion of the previous reviewers at his/her disposal. Following the opinion of the third inspector, the thesis is evaluated by the vice head responsible for education at the department. The grade of the thesis cannot become lower based on the assessment of the third reviewer.

Upon not accepting the new evaluation statement, the student has 14 days to submit a rectification request to the Appeals Board of the University of Jyväskylä. The decision of the Appeals Board on the grade is final.

If the student has no comments on the assessment or the notice chain has been completed, the vice head responsible for education at the department will make the assessment decision in Vasara. The date of completion of the thesis is the date on which the assessment decision is made. The grade is automatically recorded in Sisu from Vasara, and the assessed work is automatically sent from Vasara to the public JYX publication archive. Publishing the thesis in the JYX archive is a prerequisite for entering the grade of the thesis in the study register and thus also for awarding the degree.

Quite often, the rectification claims boil down to the student “being surprised” by the grade. Thus, the supervisor and the student should discuss the assessment criteria already when committing to the project, and if necessary, return to the matter along the way. The student should raise own grade goals already at the beginning of the project, so that the supervisor is aware of them. It is also important to evaluate the degree of difficulty of the chosen topic together even before committing to the topic. The student should be aware that a skillfully written or otherwise meritorious thesis may not reach the highest grades if the degree of difficulty of the topic should be considered modest.

The supervision agreement

The aim of drafting the supervision agreement is to have the student and the supervisor discuss relevant issues even before starting the thesis process. Assessing staying on schedule is based on the supervision agreement, unless the schedule has been updated during the progress of the thesis project.

A short checklist of things to go through:

- the appointment of a responsible supervisor and any other supervisors,
- preliminary assessment of the degree of difficulty of the master's thesis topic,
- a reasoned estimate of the project completion schedule,
- a common vision of guidance practices and meetings,
- thesis progress checkpoints and schedule update,
- passing the criteria, especially in the case of exceptional thesis types (thesis as pair work or article thesis).

The webpage [The student's instructions for writing a master's thesis](#) contains tips for working on a thesis. In the supervision agreement, the student and the supervisor commit the goals of the thesis project with their signatures. The copy of the supervision agreement will also be sent to the vice head responsible for education at the department and saved disc S (S:\chem-staff\opintoasioita\ProGradut\'year'). The possible updates to the supervision agreement will also be sent to the vice head responsible for education at the department and saved disc S.

ATTACHMENTS

1. Guidelines to the article thesis

The article thesis differs from the traditional monography in that it always has two parts: the to-be-published article and a literature review related to the topic (or an extensive introduction).

The article thesis may be a good opportunity in a situation where the results of the thesis project are, primarily, planned to be published in a scientific journal. In this connection, it is essential to be able to indicate and demonstrate the student's share of work of the to-be-published scientific article. The responsible supervisor estimates whether the publication is significant enough as a basis for an article thesis.

The article on which the thesis is based can be a joint publication, but the student's own contribution to it must be able to be demonstrated and the student must participate in writing the article. The scientific article should be fully finalized before the thesis is published. In practice, the requirement means that the article must be capable of being referenced and is publicly available. The article is not required to be approved by the journal.

In addition to the article, the student writes a literature review, which also includes a summary of the work and an explanation of the student's contribution to the research. The summary can be considered as evidence of maturity in the subject if the student has taken a maturity exam during bachelor studies, the same way as in the case of the monograph. The demonstration of the student's contribution should focus on concrete rather than a general description. The main task of the actual literature review is to demonstrate the student's familiarity with the discipline and to provide a basis for the assessment process. The article can be considered as an alternative to the experimental and results part of the thesis, in which case the literature review will be assessed in particular for its the language, referencing practices and the student's understanding of the wider context of the topic. However, the literature review is substantially less extensive than a typical monograph, especially in terms of theory or research methods and the presentation of the results obtained. The contents of these sections are briefly described, but as a general rule, reference is made to the article.

If the article thesis is interrupted, the supervisor or other authors of the joint publication may publish the results 12 months after the original, agreed schedule has been exceeded. Without being involved in the writing of the article to a significant extent, the student cannot obtain an article thesis on the topic, but must write a traditional monograph around the research topic. The supervisor evaluates the student's contribution to the article writing process