

Master's thesis process in Water and Environmental Engineering WAT

This document complements the guidelines and instructions given for Master's thesis in the Aalto School of Engineering, which can be found in WAT Into-pages: <https://into.aalto.fi/display/enwat/Completing+your+master%27s+thesis> (Master's Thesis Guidelines).

Read carefully the items 1. and 2. below about the thesis process and the structure and style of the text. See also the separate document for final checklist of the written thesis (in MyCourses Portfolio/Master's Thesis page).

1. WAT Master' thesis seminar process

The Master's thesis seminar process is compulsory for all WAT students (except for those who started in the programme in 2016). The purpose of the seminar process is to facilitate the writing of your thesis by getting you familiar with the structure of a research process and by offering peer support from those having the same schedule with the thesis. The process thus includes four phases (in chronological order): 1) Attending at least one WAT Master's thesis seminar, 2) Presenting your research proposal in WAT Master's thesis pre-seminar, 3) Attending WAT Master's thesis finalizing session, and finally, 4) presenting your thesis in WAT Master's thesis seminar. See detailed instructions below.

The pre-seminar, finalizing session and Master's thesis seminar are arranged monthly, always during the same day (the dates for each semester can be found in MyCourses, and will be always informed by email, too). The pre-seminar and the finalizing session run parallel, starting one hour before the Master's thesis seminar, so it's possible to attend the finalizing session and to present the final thesis during the same day. In any case, the finalizing session has to be accomplished before presenting the thesis, and the research proposal has to be presented at least one month before attending the finalizing session.

- 1. Attending one WAT Master's thesis seminar** before starting your own thesis work. The purpose is to learn from your peers who have already finalized their thesis. Pay attention to the thesis and presentation structure, and to the way the work is presented to the audience. In this phase, it is also good to start familiarizing yourself with the ENG Master's thesis guidelines (see the Into-link above).
- 2. Presenting your research proposal in WAT Master's thesis pre-seminar.** Please, agree with your advisor and supervisor on the pre-seminar you are planning to attend; they should accept the proposal before presenting it, and also preferably attend the pre-seminar. Prepare to discuss your thesis plan and also to comment on your peer's research proposals.

The presentation time is 5-10 minutes + discussion 5 min, and it must include slides with the following information:



- background and theoretical framework
 - why the work is important, what is the research gap your work is filling
- objective of the thesis: research questions
- research methods
- expected results and who can benefit from it
- timetable and possible budget

- 3. Attending the WAT Master's thesis finalizing session.** In the finalizing session, you should go through either your own, or your peer's thesis (depending on the number of participants in the session). The method for the session is *backcasting*: Reading the thesis from the end to the beginning, and finding out if the storyline is logical and if the research questions are answered.

Other key issues to be checked before attending the finalizing session and submitting the final thesis relate to the structure and content, and are instructed in detail below (2. Master's thesis structure and style).

- 4. Presenting your thesis in WAT Master's thesis seminar.** The thesis must be at least almost finished before presenting it, so make sure you have attended the finalizing session before the presentation. The seminars are arranged monthly; please check the dates for each semester in MyCourses. The presentation date must be agreed with your advisor and supervisor, so that they are able to be present in the seminar. When this is agreed, register to the seminar by email at least one week before the seminar: meeri.karvinen@aalto.fi.

The presentation time is max 15 minutes, after which there's 10 minutes for questions and discussion, and to the comments and statements of the advisor and supervisor. If you have received funding for your thesis, and/or recognized some key stakeholders that could be interested in your results, it is recommendable to invite them to the seminar.

We aim at having all our thesis presented in the WAT Master's thesis seminars. However, if there are some compelling reasons for you not to present in the official seminars, your supervisor can arrange an individual presentation session. In that case, contact meeri.karvinen@aalto.fi.

The seminar dates for each semester can be found in your own MyCourses-Portfolio-pages → Master's Thesis process.

2. Master's thesis: structure and style

By following these instructions, in addition to AaltoENG instructions, you will ensure that your thesis will fulfill the requirements for a master's thesis. Please, read the instructions through before starting your thesis and refer to them once in a while when proceeding. Below you'll find some additional WAT referencing instructions.

Structure

1. **Abstract:** should be an independent paragraph, giving a short summary of the background, material and methods, results, their significance, and a take-home message.
 2. **Introduction:** Background and previous studies, gaps in knowledge, research objectives.
 3. **Theory:** literature review and theoretical motivation for the work.
 4. **Data & Methods:** clearly describe your work: data production, study setting, methods and standards.
 5. **Results:** a compact and objective report of the findings
 6. **Discussion:** discuss your results with previous studies, theories, and hypothesis. Answer to your research questions. Critically analyze the quality, reliability and impacts of your results.
 7. **Conclusions:** a compact summary of your work.
- Make sure your paragraphs are in chronological order and the story flows.
 - The aim is to publish a compact and article-like thesis. Pay attention to define your topic and research questions, not to write "everything about water".
 - Max length is 100 pages, including appendices. It's a talent to produce concise text.

Content

- Follow ethical guidelines and add references wherever needed.
- Please ensure that every reference cited in the text is also present in the reference list (and vice versa).
- Only cite the original papers and those relevant for the work
- Follow the guidelines by Water Research Journal.

Citations in text: (Varis et al., 2001).

Several references: (Varis et al., 2001; Vahala et al., 2008; Koivusalo & Sorvari, 2015).

In references:

Varis, O., Vakkilainen, P. (2001). China's 8 challenges to water resources management in the first quarter of the 21st century. *Geomorphology* 41(2), 93-104

- **Book reference:** Clarke KR, Warwick RM. (2001). Change in marine communities: an approach to statistical analysis and interpretation. 2nd ed. pp. 176. PRIMER-E: Plymouth.
- **Web references:** As a minimum, the full URL should be given and the date when the reference was last accessed.
- **Data references** should include the following elements: author name(s), dataset title, data repository, version (where available), and year.
 - o NLS (2014). Elevation Model 2m, Helsinki. [Available at <<https://tiedostopalvelu.maanmittauslaitos.fi/tp/kartta?lang5en>>]. Accessed 13.12.2017

Layout

- Text formatting:
 - o Fonts, text size, justification, margins, headings, numbering and page numbering. Please see the detailed guidelines in WAT Into-pages (Templates – Thesis style guide): <https://into.aalto.fi/display/enwat/Completing+your+master%27s+thesis>
 - o Check page numbering
- Ensure optimal marginal for thesis binding (printing on one or both sides?)

- Tables and figures
 - o Make sure they have a satisfactory resolution and that they respect the layout of the page.
 - o Table and figure captions should be compact – write out any abbreviations and make sure you cite whenever necessary.
 - o Check that table and figure numbering.
 - o Each table and figure should be cited in the text.

Language

- Do language check and check the sentence structure, punctuation etc.
- Use Redfox dictionary: <https://redfoxsanakirja.fi/> or the older NetMot dictionary and proofing: <https://mot.kielikone.fi/mot/aalto/>