



TU WIEN  
DEPARTMENT OF  
GEODESY AND  
GEOINFORMATION

# Thesis Guidelines

**Department of Geodesy and Geoinformation**

Version 1.0  
19 January 2026

## CONTENT

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Master's thesis: Key steps	3
1.1.1	Topic assignment	3
1.1.2	Submission and plagiarism check	3
1.1.3	Diploma exam application	4
1.1.4	Diploma exam	4
1.1.5	Useful information	4
1.2	General tips	5
<b>2</b>	<b>Thesis structure</b>	<b>6</b>
2.1	Abstract	6
2.2	Introduction	6
2.3	Literature review (State-of-the-art) / Theoretical background	6
2.4	Methodology	7
2.5	Results	7
2.6	Discussion	7
2.7	Conclusions and outlook	7
2.8	References	7
2.9	Use of Large Language Models (LLMs) and Artificial Intelligence (AI) Tools	7
2.10	Layout	8
2.11	Language	8
<b>3</b>	<b>Planning</b>	<b>9</b>
3.1	Time management	9
3.2	Extent	9
3.3	Supervision	9
<b>4</b>	<b>Evaluation criteria</b>	<b>10</b>
4.1	Thesis	10
4.2	Diploma exam - Oral defense	10

## 1 Introduction

This document provides comprehensive guidelines for the preparation, structure, and submission of your Master's theses. Following a consistent set of standards ensures clarity, academic integrity, and formal coherence. The purpose of these guidelines is to support students in organizing their research effectively, presenting their findings professionally, and meeting institutional requirements. In addition, it provides supervisors with information on the official processes for master's theses.

### 1.1 Master's thesis: Key steps

To complete the thesis, students must follow the following key steps.

#### 1.1.1 Topic assignment

Thesis topics can be found in TISS under [Lectures – Offered Theses](#). There, click on "Extended Search" and filter the results by the organizational unit "E120 Department of Geodesy and Geoinformation." You can also filter by the type of thesis (Bachelor's Thesis BA, Master's Thesis DA, Dissertation DS) if needed.

In general: If none of the available topics appeal to you, please contact the research unit (or individual members) of the department where you would like to write your thesis. Often, there are additional topics that have not yet been listed in TISS.

If you wish to work on or write about a specific topic, please discuss it with the research unit(s) to which the topic can be assigned.

#### **For supervisors and students: Handling in TISS**

In the initial phase, each thesis has to be announced in TISS by the supervisor. This must be done at the beginning of the work. Make sure to check "Activate new final thesis submission process". After assigning the student to the thesis, the latter elaborates the exposé (under the guidance of the supervisor) and uploads it to TISS. The exposé serves as a guide for students and supervisors. A template can be found here: [Exposé template \(DOC or Latex\)](#).

The supervisor confirms in TISS the correctness of the exposé and sends the request for approval to the Dean of Academic Affairs. The latter checks and, in general, confirms the thesis. This step ends the announcement in TISS. A detailed description of the process is also available in [colab](#).

#### 1.1.2 Submission and plagiarism check

The completed thesis must be submitted in digital form to the supervisor. The supervisor then assesses the thesis with a grade (from 1 = excellent to 5 = insufficient) and prepares a written evaluation ("Gutachten"). One printed copy must be signed by the supervisor and handed in to the Dean's Office.

#### **For supervisors and students: Handling in TISS**

The final thesis is uploaded to TISS by the student. The supervisor confirms the uploading of the correct thesis and initiates the plagiarism check. After the check, the designated contact persons for plagiarism proof the results and usually confirm the thesis' integrity. After passing the plagiarism check, the thesis is approved for grading. In each step, the student and the supervisor are informed by mail about the current status and necessary actions.

The supervisor must grade the thesis in TISS by the time the student applies for the diploma exam. In

a later step, the written evaluation is also uploaded to TISS. This step finalizes the thesis handling in TISS. A detailed description of the process is also available in [colab](#).

At TU Wien, all theses are subject to plagiarism checks to uphold the principles of academic integrity. The *Turnitin* software compares the text with academic publications, databases, and online sources to identify overlaps. These results are then reviewed by the designated contact persons for plagiarism, to evaluate whether the former reflect correct citation practices or potential misconduct.

Confirmed plagiarism can lead to serious academic consequences, ranging from rejection of the work to disciplinary measures. Students are therefore strongly encouraged to follow proper citation standards and to document the use of all external sources, including generative AI tools.

### 1.1.3 Diploma exam application

The diploma exam consists of the oral presentation (see also 1.1.4) and examinations on different subjects of the master curriculum.

Before the application, the course assignment must be made via [TISS final degree registration](#).

All required documents must be submitted to the Dean's office. A [list of required documents](#) and the [online appointment booking system](#) can be found on the Dean's office website. There are three application deadlines per semester, each leading to an exam date about one month later [Appointment table](#).

The examination committee as well as the exam subject must be determined and submitted to the [Dean's office](#) at least **4 weeks before the submission of the documents**. The examination committee will be presented to the Dean of Academic Affairs for approval.

The **examination committee** consists of three examiners.

- Examiners must be chosen from **different research units** and should be assigned significantly to a course (VO or VU) in the GEO Master's curriculum.
- Only one of the examiners can be an external lecturer.
- Students, please contact your chosen examiners **on your own** and check if they are available during the expected exam period.
- Please plan the examinations preferably on Mondays from 3 to 6 p.m., as a lecture hall is already reserved for this purpose by default.
- The examination committee and the exam subject must be submitted to the Dean's Office at least 4 weeks before the submission deadline. The examination committee will be presented to the Dean of Academic Affairs for approval.

### 1.1.4 Diploma exam

The Dean's Office will send an invitation to the final exam. The exam consists of two parts:

- A 20-minute presentation of the Master's thesis, followed by an open discussion
- An examination by the examination committee (open to the public)

After passing the exam, the academic degree certificate ("Bescheid") is typically ready for collection two to three weeks later, upon presentation of a valid photo ID.

### 1.1.5 Useful information

- Please note that the recognition of exams may take 4-6 weeks. Therefore, please apply for recognition of exams well in advance of your desired graduation application date.

- By the time you apply for the diploma exam, all grades must be in TISS (including the Master's Thesis grade).
- If the diploma exam takes place until the deadline of continuation of studies of the past semester (until the end of October or end of March), no tuition fee for the upcoming semester needs to be paid.
- The title page of the Master's thesis must meet certain criteria and must always be in German, although the rest is written in English. A [template for the title page \(DOC or PDF\)](#) is available on the Dean's office website. The rest of the layout of the Master's thesis is free to choose. The Department of Geodesy and Geoinformation offers a template (DOC or Latex) for the thesis and using it is highly recommended: [Thesis template \(DOC or Latex\)](#)
- Master's theses are automatically imported from TISS into [repositUm](#).

## 1.2 General tips

1. Document your work in a timely manner. You won't be able to recall what you did last week, let alone last month.
2. Writing a thesis is a creative, iterative process that will require several rounds of rewriting and revising. Don't try to get it right on the first go; try to get it written. A good strategy can be to set up the manuscript structure before creating the actual text, tables, and graphics.
3. Always run text through a spellchecker before you send it to anyone.
4. Backup your files regularly — use cloud storage and an external drive.
5. Use version control if you're coding or working with datasets (GitHub, for example). If you have not worked with it before, take this opportunity to familiarize yourself with it. In any case, make sure you can always go back to earlier code versions. Comment your code and use a clear folder structure and naming conventions for your experiments.
6. Use a reference management software (e.g. Zotero, Mendeley, Jabref).

## 2 Thesis structure

A Master's thesis typically follows a standard academic structure, though the exact sections can vary slightly depending on your field of study, research unit, or whether it's a theoretical or empirical thesis.

Below is a suggestion for a commonly accepted structure across most disciplines:

- **Title page**
- Declaration of Authorship
- **Abstract (in German and English)**
- Acknowledgments (optional, short)
- **Table of contents**
- **Introduction**
- **Literature review / Theoretical background**
- **Methodology**
- **Results**
- **Discussion**
- **Conclusions and outlook**
- **References / Bibliography**
- AI usage (optional)
- List of figures / tables / abbreviations (optional, generally not necessary)
- Appendices (if needed)

Based on your topic, you might deviate from this structure.

### 2.1 Abstract

The abstract is a brief (as short as possible, maximum one page) yet comprehensive summary of the entire thesis and should be understandable on its own without referring to the rest of the document. It should provide a clear overview of the research, including the background and motivation of the study, the main objective or research question, the methods used, and the key findings or results.

### 2.2 Introduction

The introduction allows us to understand the motivation underlying your work. Try to start broadly by explaining the overall context and relevance of your topic. After that, try to get more into detail, leading to the objective of your thesis.

- (a) General presentation of the framework: What is the purpose of the thesis? Why is the topic important?
- (b) Objective: Clearly present the overall objective of your investigation, which should logically follow from part (a). To make your objective specific and focused, formulate two or three research questions and/or hypotheses. These should be stated explicitly and aligned with the broader context of your study. Your objective, research questions/ hypotheses must be discussed and agreed upon with your supervisors.

### 2.3 Literature review (State-of-the-art) / Theoretical background

This section reviews existing research, methodologies, and technological developments relevant to the thesis topic. The goal is to situate your work within the academic and technical landscape. Try to revise the literature regarding previous studies (papers) that have addressed the same (or similar) objective and aim as your work.

Also, the theoretical foundations of the research are outlined, including models, reference systems, and mathematical principles immediately relevant to your topic. This section ensures the expert reader understands the concepts used later in the thesis.

## 2.4 Methodology

The methodology section details the research approach, including data sources, tools, and procedures used to conduct the study. It should describe the entire workflow. Software tools, algorithms, and parameters should be explained clearly. The methodology should be transparent; however, it is not necessary to present every iteration, trial, or unsuccessful approach in this section. The overall purpose of this section is that the reader (your supervisor, ...) can follow and understand all measures that you have been using to produce the presented results.

## 2.5 Results

This section presents the outcomes of your thesis work, using figures, tables, or maps to illustrate key findings (check with your supervisors which data sets need to be presented, and which can be given in an Appendix). Results should be organized logically and described clearly, without excessive interpretation. Depending on the thesis focus, this could include geospatial outputs, statistical evaluations, model performance metrics, or visual comparisons of data sets.

## 2.6 Discussion

In the discussion, the results are interpreted. This section explores what the findings mean, how they compare to previous work, and what limitations or uncertainties were encountered. It should offer critical insight into the strengths and weaknesses of the approach and its relevance within the field.

## 2.7 Conclusions and outlook

The conclusion summarizes the main findings and reflects on whether the research objectives were met in relation to the research questions/hypotheses (answer your research questions and try to verify your hypotheses) or existing literature (mainly the literature that you have used in the state-of-the-art). It highlights the contribution of the thesis to the field, potentially discusses practical applications, and suggests areas for further research. You may also report what did not lead to the expected outcome and why. This section should leave the reader with a clear understanding of the value and outcomes of the work.

## 2.8 References

Provide a complete list of references of the works cited in the thesis. You can choose the format of how to cite the references, but the format needs to be consistent across the entire thesis.

We strongly advise you to use a reference management software (e.g. Zotero, Mendeley, Jabref).

## 2.9 Use of Large Language Models (LLMs) and Artificial Intelligence (AI) Tools

The use of LLMs or other AI-based tools must be documented, and the sections in which LLM/AI systems were used must be clearly indicated.

Consistent with other source citations, content contributions that were written based on AI prompts should also be clearly indicated. Traceability needs to be ensured by providing information on the generative AI

system used, the prompts, and the date of the query with which the content was generated; e.g. ("Example prompt text", 30.12.2025, ChatGPT, GPT-5.2.").

The use of generative AI for the creation of entire text passages or paragraphs or for conducting literature reviews is **strictly prohibited**.

**Despite that, the student is fully responsible for the content taken from LLMs or from other AI-based tools and integrated into the thesis.**

## 2.10 Layout

Except for the title page (section 1.1.5), the layout is, in principle, freely selectable. The Department of Geodesy and Geoinformation offers a template for the thesis: [Thesis template \(DOC or Latex\)](#)

Nevertheless, the master's thesis must adhere to certain formatting standards, such as A4 portrait orientation, justified alignment, and consistent use of fonts and font sizes for continuous text. Headings, captions, and other text elements should follow a uniform style throughout. Make sure that figure captions are readable without zooming in. When using images or graphics, sufficient resolution must be ensured to maintain legibility.

## 2.11 Language

The master's thesis may be written in either English or German, with English being the preferred language.

## 3 Planning

### 3.1 Time management

As a graduate student, you are expected to manage your time responsibly and independently. However, experience has shown that unrestricted timelines for a project of this scope often result in significant delays, which can lead to frustration and inefficiency for both the student and the supervisor.

To mitigate such risks, students are required to develop a binding work schedule in close consultation with their supervisor. This schedule must be included as a **GANTT chart in the exposé with clearly defined start dates**. The proposed timeline must be realistic and achievable. Whether you intend to complete your thesis within four months or require a longer period due to personal or professional commitments, the key requirement is that you **adhere to the agreed schedule**.

While unexpected delays may arise, they must be communicated to your supervisor promptly and transparently. Failure to meet agreed deadlines without negotiating a revised timeline may negatively affect your evaluation and, in severe cases (50 percent deviation from your own timeline), may result in the termination of the thesis supervision.

### 3.2 Extent

The master's thesis in Geodesy and Geoinformation at TU Wien is worth 27 ECTS credits, to be completed before the diploma exam, which carries an additional 3 ECTS, bringing the total to 30 ECTS. This reflects the typical workload equivalent to approximately 750 hours of independent academic work, or about five full-time months of work (40 hr/week), respectively.

The extent of the thesis in terms of content depends on your field of study. Most theses involve also tasks like data acquisition, manipulation, visualization, etc. and mathematical and/or statistical analyses (e.g., data comparisons, modeling, etc.). Experience has shown that master's theses typically converge to around 60–100 pages. Note, however, that there is no strict page requirement for a thesis. The guiding principle is “as much as necessary, as concise as possible”. Quality beats quantity.

### 3.3 Supervision

The supervision's primary aim is to guide and support students adequately in the course of planning and conducting their thesis. This intention encompasses not only support in terms of advice, comments on methods, etc., but also monitoring of the student's approach as well as urging the students to adhere to appointments.

In this context, hours of supervision have to be personally arranged with the supervisor in respect of duration and regularity. For this purpose, every form of reasonable and efficient communication, e.g., face-to-face conversations, e-mails, etc., is possible.

Supervision includes suitable feedback concerning the concept of the work, at least two to three intermediate coordination appointments, feedback on the first draft, and the conclusive overall assessment.

We strongly encourage students to discuss the thesis structure in a timely manner with their supervisor.

## 4 Evaluation criteria

The evaluation of a master's thesis is based on a comprehensive assessment of both the **academic quality** of the work and the student's **research competence**. In this chapter, different criteria for evaluating the thesis are presented. Different supervisors are giving different weights to those criteria, and for some topics, not all of these criteria are applicable. Students are encouraged to speak with their supervisor(s) for detailed expectations.

### 4.1 Thesis

#### 1. Written thesis: Content

- a) **Exposé:** Creation of a clear research concept (definition of thesis objectives, research proposal, work schedule, etc.).
- b) **Introduction:** Clear identification of research gaps and specification of hypothesis, questions, or objectives. Positioning of the thesis in the discipline's scope and context. Possible effects on the discipline's scope.
- c) **Literature review:** Discussion of latest and relevant literature.
- d) **Methodology:** Derivation of methods and development of new approaches.
- e) **Results and discussion:** Critical discussion and relevance of the results, collected/created data, quality of performed experiments.
- f) **Conclusions:** Answers to research questions, discussion of limitations of your own work, outlook on open issues.

#### 2. Written thesis: Form

- a) **Structure:** Clear and logical structure without repetition.
- b) **Language:** Grammar and style of writing, quality of text, way of presenting arguments and conclusions.
- c) **References:** Correct citation of appropriate literature where relevant; complete and consistent bibliography.
- d) **Presentation:** Appropriate (graphical and numerical) demonstration of the results, including captions; visually appealing illustrations and tables.

#### 3. Research process and work attitude

- a) **Time management:** Keeping track of schedule and milestones, ability to track and maintain progress.
- b) **Collaboration:** Quality of interactions with the supervisor, preparation of results, implementation of recommendations/corrections, reliability.
- c) **Independence:** Independent working and self-initiative; exemplary feedback rather than need for proofreading.
- d) **Project organization**

### 4.2 Diploma exam - Oral defense

Students must clearly present their research, respond to questions competently, and demonstrate a thorough understanding of the topic and methodology.

#### 1. Content

- a) **Structure:** logical structure.
- b) **Comprehensible content:** balanced amount of information, adequate balance of central and peripheral aspects (target audience: Geodesy and Geoinformation students at the master's level).

## 2. Form

- a) **Slides:** Not too overloaded, visually appealing.
- b) **Presentation style:** Volume, eye contact, posture, gestures, position, use of pointer, etc.
- c) **Engagement:** Use of language, storytelling, soundness of arguments.
- d) **Time keeping:** Keeping the time limit (20 minutes  $\pm$  1 minute), consistent presentation speed throughout.

## 3. Discussion

- a) **Quality:** Clear, competent, honest, and concise answers to questions.

Editor  
Technische Universität Wien  
Department of Geodesy and Geoinformation  
Wiedner Hauptstraße 8-10, 1040 Wien  
Layout PR Marketing (Stand 03/2022)  
LaTeX Version E120 (Stand 01/2026)