Master`s Thesis

**Master in Information Engineering
School of Computation, Information and
Technology**

Infosession Master`s Thesis

2nd of July, 2025

Topics today

- Regulations
- The process in 6 Steps
- Citation
- Suggestions & further information

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General regulations

- You are expected to work **independently according to scientific principles**. (Allgemeine Prüfungsordnung „APSO" = General Academic and Examination Regulations).

- In accordance with § 18 subsection (1) APSO students must be **enrolled** in the respective program until completion and submission of the final thesis. This is true even if the period for writing the thesis was extended for reasons beyond a student's control.

- „With the approval of the chairman of the examination board, the final thesis may be carried out in a **facility outside the university if it can be supervised by an examiner from the Technical University of Munich**."

Sources:
www.cit.tum.de/en/cit/studies/students/thesis-completing-your-studies
APSO, *www.cit.tum.de/en/cit/studies/degree-programs/bachelor-information-engineering*

Program regulations

- The Master's thesis should be your **last examination** within your study program (exceptions are possible).
- Completing your Master's thesis should **not take more than 6 months**.
- It should be between **50 and 100 pages** and can be written in **German or English.**
- You will get **30 Credit Points** for the thesis (= workload 900 hours) and the presentation of your scientific work (20-30 minutes).
- You have to pass it with a least a **4.0.** If you do not pass it, you can register for a second chance within 6 weeks, but with a new topic.

Sources:
Formalities concerning your thesis, https://www.tum.de/en/studies/graduation/theses/formalities
Fachprüfungsordnungs- und Studienordnung MIE §46, https://www.cit.tum.de/en/cit/studies/degree-programs/master-information-engineering/
Module description,
https://campus.tum.de/tumonline/WBMODHB.wbShowMHBReadOnly?pKnotenNr=3967731&pOrgNr=53643

Step 1 – Find a topic

Do you have a special field of interest?
- Inform yourself about the research areas of our CIT Professors. They might have announced interesting topics at their websites already.
- Afterwards, contact him/her or a faculty member of that academic department in good time to discuss possible thesis topics or to concretize them.

Do you know what is perhaps the most difficult step in writing a thesis?
It is finding an appropriate topic and putting it into concrete form. Allow yourself sufficient time to find a topic that suits your level of knowledge and interest.

Summary of TUM-wide topics:
https://portal.mytum.de/schwarzesbrett/diplomarbeiten/newsboard_view

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

When you are choosing a topic, remember that you will have to deal with it intensively over a period of several months!

Professors

Prof. Dr. Stephen Kobourov
Efficient Algorithms

Prof. Dr. Hartwig Anzt
Computational Mathematics
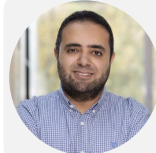
Prof. Dr. Luise Pufahl
Information Systems

Prof. Dr. Ali Sunyaev
Information Infrastructure

Prof. Dr. Carsten Trinitis
Computer Architecture & Operating Systems

Prof. Dr. Maribel Acosta
Data Engineering

Prof. Dr. Amr Alanwar
Cyber-Physical Systems

Prof. Dr. Chunyang Chen
Software Engineering & AI

Prof. Dr. Stefan Wagner
Software Engineering

Prof. Dr. Alexander M. Fraser
Data Analytics & Statistics

Prof. Dr. Stephan Günther
Distributed Systems and Security

https://chn.tum.de/research/professors#c3049

Step 2 – The Koinon Portal

- Once you have found a topic and a supervising chair for your thesis, you will be registered **by the supervising chair**.

- You will receive an **e-mail asking you to confirm** your thesis registration.

- Only after you have confirmed your registration we will be able to check the admission requirements and you will receive an **email confirming your binding registration** for your thesis.

- You can log in to the CIT portal at *https://portal.cit.tum.de/en/Theses/* with your TUM ID and get a overview of your thesis timeline and deadlines.

- In rare and reasonable cases, you can apply for an **extension** in the CIT portal.

Step 3 – Establish a working plan

A major project, such as a thesis, should not be started without a working plan. The plan should include all phases of work on the thesis, from searching for a topic to submitting your work.

- **Do not think too detailed**; otherwise, there is the danger that you will have to spend too much time readjusting your plan. This consumes precious time that you need for your work.
- In your working plan, record the times when, for example, the lab is **closed**, your supervisor is on **vacation**, or the university is closed due to **holidays**.
- Do not overtax yourself. You should plan **extra time** as a buffer.
- Fix clear **deadlines**. If you tend to continuously push back deadlines, it could help if you set your deadlines in combination with an appointment to see your supervisor or fellow students.
- According to experience, the greatest level of stress comes towards the end of your project. **Plan as few other activities as possible around this time**, so that you can meet your submission deadline.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Step 4 – Search for sources

It is a good idea to get a general overview of **available sources** for your work while searching for the appropriate topic. At the latest, once you have chosen your topic, you should begin to research resource material.

→ Start with introductory **articles and books**. If you discover **certain authors** have published literature relevant to your topic, or if you have identified **keywords**, you can search for further contributions in the library's online-catalogues and literature data banks.

Researching has a "**snowball effect**". The bibliographies of your introductory sources will lead you to

→ further sources; their bibliographies will, in turn, direct you to
→ even more sources, and so on.

Be careful not to drown in your research and get buried in mountains of sources you will never be able to deal with in the limited time you have for writing your thesis. Set a clear deadline in your working plan for completing your initial research.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Keep track of your sources

Record all the sources relevant to your work from the very start.
It is extremely annoying to be in the throes of composition and realize you no longer remember where you found the excellent article you want to reference.

Write a short summary of the article and record page numbers of important quotations, so that you can find them again during the writing process.

By using **an electronic organization system** for recording your sources, you can gain the best overview of the material you have read. The university library has a campus license for the sources organization programs.
You can find more information on this subject here: *www.ub.tum.de/literaturverwaltung*

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Step 5 – Create an outline

A good outline can make it much easier to write your thesis.

- Creating an outline forces you to consider your **line of reasoning** in the construction of your arguments. These thoughts should be clear, well-structured and comprehensible to the reader of your thesis.
- Once you have an outline, the entire thesis is divided into **small, clearly arranged units**, which, in turn, facilitates the writing process.
- Suddenly, you no longer have that huge "mountain" of work in front of you, but you can see – like on a good trail map – the individual sections of your hiking trail leading to the summit ahead of you.
  And: **A good outline is an important foundation** for good advising. On the basis of your outline, you can more readily discuss your specific questions, the structure, and length of your thesis.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Tip: Create a "commented outline" for yourself!

Step 6 – Start writing

You do not have to immediately produce a polished chapter on paper.

For a start, it often helps to begin with a section of a chapter you find easy to deal with.

In the initial phase, you may only write down keywords and incomplete sentences you will later formulate completely during the writing process.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Cite correctly

Working scientifically means everything you write must be reliable and accurate, so that readers can check the facts.

You must, therefore, properly acknowledge the source of every idea that is not your own and every fact on which you have based the argument of your thesis.

→ That means any passage of your text that you have not developed on your own accord but have taken over from other sources, must be clearly indicated to the reader.

→ This includes direct and indirect quotations, as well as tables or graphs.

To avoid oversight (something that could easily happen with such a comprehensive final project), we recommend that you **immediately** indicate all citations and enter their sources in your bibliography or reference list as you draft your thesis.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Cite correctly

Remember, when you submit your thesis, you must declare in writing that you have written it yourself and that no sources or aids other than those listed have been used (§18 (9), APSO).

In other words: if you integrate citations and passages and even ideas in your text from someone else and you do not declare that other person accordingly, this will be counted as an attempt of deception and result in failing the thesis!

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Back up your data

Is such advice out of place at a technical university? Far from it! It cannot be repeated often enough:

Back up your data!

Save your data when you stop writing at the end of a day. Save your data in between, before you answer the telephone, take a break, treat yourself to a nap, clean your apartment and so on. It can be devastating to lose thoughts hard won and difficult to write down.

Moreover: make back-up copies on external storage sites. All students at the TUM have free access to readily available and secure storage and project disk drives: *www.it.tum.de/en/it/students*

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Complete your thesis

All sections are completed? Congratulations! But you are not finished yet. Now you have to make your work presentable for submission. To do this, once again, you will need a good deal of patience and care. For this step, you should allow a sufficient amount of time.

- **Proofread** for grammatical accuracy and stylistic form. Or – even better – find someone who can do this for you because, as an author, you are often "routine-blinded" and no longer see your own typing, spelling and grammar mistakes. Friends, relatives or fellow students (who are currently not under the stress of writing a thesis) are perfectly suited for this job.

- **Check** your table of contents, tables, lists and cross references. Ensure that all page numbers correspond to the correct page of the graphs and tables, that their headings have been correctly written and numbered, and that the bibliography is complete.

Source: www.tum.de/en/studies/graduation/theses/tips-and-tricks

Submit your thesis

After completing your thesis, you upload it in the Koinon Portal.

Make sure to follow the procedure that is requested in the portal.

Checklist thesis

Preperation

✓ Make sure that you are **enrolled** until completion and submission of your thesis.

✓ **Find a topic** - inform yourself about the research areas of our CIT Professors and contact him/her or a faculty member.

Formal registration

✓ Once you have found a topic and a supervising chair for your thesis, you will be **registered** by the supervising chair in our **Koinon portal** *portal.cit.tum.de/en/Theses*.

✓ You will receive an e-mail asking you to **confirm** your thesis registration. Only after you have confirmed your registration we will be able to check the admission requirements and you will receive an email **confirming your binding registration for your thesis**.

✓ You can **log in to the CIT Koinon portal** with your TUM ID and get an overview of your thesis.

Scientific work & Upload

✓ Start with your **scientific work** on your thesis and be sure to follow our **recommendations.**

✓ If necessary, you can apply for an **extension** in the CIT portal.

✓ After your completion, **upload** the thesis in the Koinon portal.

Presentation

Depending on your supervising chair, you will have to present the results of your thesis within **one or more presentations** (20-30 min).

Usually, your supervisor and academic staff from his or her department will be present.

Please note: **You have to be enrolled for your presentation.**

Exception: The time until the first week of classes belongs to the exam period of the previous semester. For exams which take place until the end of the first week of classes of the new semester no obligation for enrollment exists. This is also true for the usually with a final thesis associated mandatory presentation.
Students who have submitted their final thesis in the previous semester therefore do not have to be enrolled for a presentation which takes place until the end of the first week of classes.

Info: If the presentation takes place after submitting the final thesis and if this is the last requirement of the program, then the day of the presentation also is the date of the certificate (and not the date of submission of the thesis).

Source: www.cit.tum.de/en/cit/studies/students/thesis-completing-your-studies

Sources and more information

- Tips and Tricks for the final research papers and thesis: *www.tum.de/en/studies/graduation/theses/tips-and-tricks*

- *https://thesisguide.org*

- TUM`s English writing center / Zoom courses: *www.sprachenzentrum.tum.de/sz/sprachen/englisch/english-writing-center/article/writing-fellows-english-writing-center/*

- Thesis and completing your studies: *www.cit.tum.de/en/cit/studies/students/thesis-completing-your-studies/*

Regulations

- Allgemeine Prüfungs- und Studienordnung (=General Academic and Examination Regulations), §18: *https://www.cit.tum.de/en/cit/studies/degree-programs/master-information-engineering/* (Section Examinations and Regulations)

- Fachprüfungs- und Studienordnung für den Masterstudiengang Information Engineering am TUM Campus Heilbronn der Technischen Universität München vom 28. März 2024 (=MIE Program Regulations), to be found here: *https://www.cit.tum.de/en/cit/studies/degree-programs/master-information-engineering/* (Section Examinations and Regulations)

- Module description
  https://campus.tum.de/*tumonline*/WBMODHB.wbShowMHBReadOnly?pKnotenNr=3967731&pOrgNr=53643

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Thank you for your attention and good luck!