

# Entertainment Computing Rules for Theses V1.6

Helmut Hlavacs

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## General Rules

Use this document as **guidelines** – the rules are not fixed (e.g. number of pages per section) but only **recommended** to make sure your text looks like a proper scientific text and not a student project. There may be reasons to deviate from these rules, but only in few cases these reasons are actual reasons.

- All theses must be written in Latex in Overleaf.
- Create a project on Overleaf and invite advisor (Helmut Hlavacs) as editor
- All theses must be written in English.
- You can use LLMs for correcting text, but not for writing text.

## Thesis Structure

All theses (bachelor and master) should have this general structure:

1. **Introduction:** general topic, motivation, goals, 1-2 research questions and 1-2 hypotheses, small synopsis.
2. **Related Work:** no subsections or subsubsections. Discuss about 30-50 papers or projects / products, reference each with `...~\cite{}`. At least 2/3 should be scientific papers from conferences or journals. Write 1 paragraph with max 3-4 sentences per source: what did they do, what was their result, what was left open.  
For gathering the information (papers, projects, ...) you can use LLMs like Google Gemini Deep Research. Of course you cannot just copy paste the result. You should read the papers (if you can get them), and write your own text, but use the gathered information as a source.
3. **Technical Foundations:** what readers must read in order to understand what you have done. Max 4 subsections. Here you write what you have NOT done, but other people, but what was an important basis for your work.
4. **Your contribution.** Choose a narrow **title** similar to the title of your thesis, like: Creating games with LLMs, i.e., specifically **what you have done**. Describe algorithms, system architecture of your solution, prompts, screenshots, UIs, ...
5. **Evaluation:** Here you describe how you evaluate your solution with studies and **answer the research questions**. Studies can be purely algorithmic, e.g., performance, FPS, runtime, CPU time, number of operations, .... **Or** they can involve **participants** (10-20 participants) judging your

solution. In the latter case **ALWAYS** use **questionnaires**, 4-point Likert scale (Strongly disagree, Disagree, Agree, Strongly Agree), **AND** inference statistics using **p-values**! Use max 4 subsections unless it is really necessary. In a subsection you *can* also add a discussion, describing the main findings and their meanings, limitations etc.

6. **Conclusion.** repeat on a high level what you have done and what your results are.

7. **Bibliography**

Table 1 shows the **recommended** number of pages per section for Bachelor’s Theses. Table 2 shows the recommended number of pages per section for Master’s Theses.

*Table 1: Bachelor’s Thesis structure and number of pages per section.*

Number	Section	Pages	Remarks
1	Introduction	2	No subsections. State research questions (1-2) and main hypotheses (1-2).
2	Related Work	5	No subsections
3	Technical Foundations	5	This is what readers should know but someone else has done.
4	Your Work	5	<b>Select specific title.</b> This is what you have done to answer the research question.
5	Evaluation (+discussion)	5	Describe experiment setup, participants, procedures, quantitative results with diagrams, inference statistics and p-values, results. Discuss answers to research questions, limitations, future research.
6	Conclusion	1	No subsections
7	Bibliography	30 papers	
	Number of pages	25-30	

Table 2: Master's Thesis structure and number of pages per section.

Number	Section	Pages	Remarks
1	Introduction	3	No subsections. State research questions (1-3) and main hypotheses (1-3).
2	Related Work	10	Subsections allowed but not recommended
3	Technical Foundations	15	This is what readers should know but someone else has done.
4	Your Work	25	<b>Select specific title.</b> This is what you have done to answer the research questions.
5	Evaluation (+discussion)	15	Describe experiment setup, participants, procedures, quantitative results with diagrams, inference statistics and p-values, results. Discuss answers to research questions, limitations, future research.
6	Conclusion	1	No subsections
7	Bibliography	50 papers	
	Number of pages	70-75	

Note that these numbers are **recommendations** and **not fixed**. Change them if it fits better to your work, plus minus 1-4 pages. Make sure that the total number of pages is in the given interval.

## Formatting Rules

Stick to these formatting rules:

- Use the standard **template**, avoid fancy formatting, create formatting rules / packages / newcommands only if you REALLY need them, e.g., for code.
- Make sure that the **width** of your single text column covers the page sufficiently:  
**The standard template sometimes results in much too small text block and too wide side margins. Make sure to make side margins smaller so that it looks like a genuine scientific text. As a template, use this document to guide you as how wide the side margins should be.**

Text block in the template. Too small!!!

This is how wide the text block should be!

- In the main text **never** use `\\` (exception : tables), `\newpage`, `\pagebreak`, `\newparagraph` etc. An empty line indicates a new paragraph. A new paragraph should start with an indentation (if the template enforces this).
- A paragraph should contain at least 5-6 sentences (exception: related work), a **subsection** should be at **least 1 page** long. **Avoid subsections** at all costs! Fuse too small paragraphs or subsections into **larger** ones. **Do not use any other subsection-like structuring like bold title lines followed by `\\` or similar.**
- Figures, diagrams should not be too large, at least 2 should fit onto a page including the caption.
- Figures should visualize the text, use them but do not overuse them. The text is the important content.
- Diagrams should all have the same size, aspect ratio, and be centered. Y-axis title should not be horizontal and too long. Axis legend should be in the right upper corner of a diagram.
- Make sure that the **text** in figures is as large as the **caption** and **readable**.
- Each figure and table **must** be referenced from the text with `~\ref{}`, e.g., As shown in Figure`~\ref{...}`, ...
- Each item of the Bibliography section must be cited with `...~\cite{}`.
- Put the `\cite` before the line ending “.”
- Never use Shift-2 as upper double quotes. Always use ``` and `”` (copy these from here).
- For readability it is better to put the whole thesis into one big `.tex` file.
- All figures must be vector type (PDF), **not pixelated** (PNG, JPG). The only acceptable exception are screenshots. **Do not copy** figures from a source if possible. Diagrams **must** be created by yourself, e.g., using Power Point.
- All math must be set in **math** mode. Equations that are referenced must have their own number, use `\begin{equation} ... \label{equ-sum_of_squares} \end{equation}`. Equation references must be put into round brackets. E.g.: As seen in Equation`~(\ref{equ-sum_of_squares})`, the sum of ...
- References to Figures and Tables should **not** be put into round brackets.
- Use `~` to enforce a standard spacing without line break.
- Units should use `\,` as small space. E.g.: The mass of the car is 1000`\,`kg.
- Make sure that in your final thesis you do not have single sentence parts at the start of a page (“Schusterjunge”, etc).
- Avoid half empty pages inside the main text. Only at the end of a chapter a half empty page is allowed!

The process for your Bachelor's Thesis is like this:

- At the **start of the semester** we talk and define the topic and the results.
- During the semester **every 2 weeks** we have a **touchpoint. You actively initiate the touchpoint.**
  - Either we have a meeting (in person or online), or you send me a **short** (~ 10 sentences) summary report (text, images, video, **not PDF**) in the **messaging client**.
  - We **do not use email** during the semester.
- After the touchpoint is must be clear:
  1. What you have achieved in the previous 2 weeks. What are your results.
  2. What your current status is.
  3. What you plan to do in the next 2 weeks.
- Touchpoints are **not** meant as fixed deadlines. They give you directions and inform me of your progress. Sometimes you simply need more time to implement something. That's fine – just inform me on this in the messenger.
- 3 weeks before semester end you should finalize your work and start writing the text
- For this you create a project in Overleaf and invite me to it as editor
- You create the basic structure as described above and write 1-3 sentences what you plan to write there.
- You keep me updated about your thesis, once you have written 50% you inform me and I will give you feedback.
- Once I agree that the thesis is done you send it to me by email.
- Then you get the grading.

## Master's Thesis

The process for your Master's Thesis is like this:

- Ideally you start the project with Praktikum 1, then continue with Praktikum 2, then create the thesis.
- In the Praktika we set milestones and define the contribution of the Praktikum.
- The contributions should be additive, i.e., each Praktikum adds more functionality to your project, so that in the end when you work on your thesis you mainly finish up details and concentrate on the experiments and writing.
- Concerning the Master Seminar: The seminar should result in **Section 2 Related Work** of your thesis. Thus, it makes sense to do it in the semester **before** the final semester.
  - After the seminar you must register your thesis with the SSC, see their info about it.
- **Starting with Praktikum 1** we have a **touchpoint every two weeks, see Bachelor's Thesis rules.**
- During holidays we do not have mandatory touchpoints, but you can work on your project and inform me once in a while.
- Once we agree that your thesis is almost finished, we agree on other professors you contact for our final defense. We need two more professors: one as second examiner, one as chair. You contact them and we use Doodle to agree on a date and time for the defense (usually 3-4 weeks in the future).
- Once we have that you submit the final thesis to the SSC, which then officially sets the date, time and the room.

- In the final defense you give a 25-30 min presentation of your work. Be sure to include lots of images, diagrams, maybe a video of your work at the end, or even a live demonstration.
- In the week before, send the first version of your slides to me to get feedback.

## Master Seminar

The goal of the master seminar is to write chapter 2 Related Work of your Master Thesis. This is a pure literature survey, see the information above.

You search for papers, projects etc, read them, write the chapter 2, and at the end of the semester you present your findings and the state of your masters project in a short talk to other students.

## Use of LLMs

- Use them for research, explaining stuff to you, structuring.
- You can use them as programming assistants in your IDE, but you have to understand what they have done and maintain control over the project.
- You can use LLMs to correct text, but not wholesale create text.