Handout for theses at KIS*MED

Bachelor's/Master's thesis

1.   Requirements

- Official application
- Determination of the thesis language.
- Research proposal (Optional/depends on supervisor)
- 1 mid-term presentation
- 1 final presentation
- 1 thesis writing

2.   General Terms and Suggestions

- Regular supervisor meetings
- Participate in 1-2 final presentation held by other students
- The **assessment** includes: *Systematic and methodical way of working, independency, understanding* & *problem-solving skills (together 40%)*, *results (20%)*, *written thesis (25%)* and *final presentation (15%)*.
- Start writing early
- You can work in the student laboratory

3.   Mid-term Presentation

A mid-term presentation should be given around the halfway of thesis duration (in the case of 6 months, i.e., after 3 months).

- **Duration** : 7-10 minutes, followed by 20 minutes of discussion
- **Content:** Presentation of the problem so that people unfamiliar with the subject can understand, excerpt from previously completed steps, planning the rest of the project.
- **Focus**: Problems that are currently pending, particularly problems where there may not be a clear solution. Both content problems and organizational problems. Questions that stimulate discussion. Often there is someone in the audience who has already dealt with similar questions or has creative ideas.

4.   Thesis Writing

The written thesis should preferably be created in Latex with the corresponding TU Design / TU Darmstadt template. This template automatically creates a thesis which is already well lined up and makes working with sources relatively easy. There is also Overleaf /Sharelatex a web editor from the TU.

Requirements:

- **Writing Style**: The thesis should meet *scientific* standards and be written in the style of a *report of results, not as a working log.* This means that the chronological sequence of the work steps is not relevant. Also, certain implementation details can be omitted ("I used Visual Studio to code"). Explanations and descriptions should be clear enough for someone not familiar with the topic to follow. Consistent naming and definitions are helpful.

- **Structure**: The thesis should be well structured with the main idea being present at every step. The traditional structure consists of an introduction, main part and conclusion. In the main part, it is common to divide methods, results, and discussion into different sections.
- The following **important questions** should be answered: What is the objective of the work? Why should this goal be achieved? What have others already done in this area (literature research)? What was done to achieve the goal? How well (quantitatively) was the goal achieved?
- **Graphics / Plots:** Graphics / high-resolution images with legible texts, captions (roughly the size of the body text) that briefly explain the graphics and, if necessary, explain symbols. Graphics are meant to support the writing, not to decorate it (therefore must be cited in the text).
- **Equations:** Every equation should be embedded in the text. Symbols used must be defined.
- **Sources**: Everything that is not generally known (in the context of electrical engineering) and does not originate from your own thoughts or work must be referenced. Text sources (preferably papers or textbooks) are named in the list of sources (*correct citation*). There are no fixed rules for sources of images (e.g. wikimedia) or code (github), but footnotes or links directly to the image are suitable here.
- **Scope**: The scope essentially depends on the content. For the main part, 60 pages ± 10% (Bachelor) and 80 ± 10% (Master) can be seen as guide values. Larger tables, proofs, ... which cannot be meaningfully integrated to the thesis can be placed in the appendix.

5. Final presentation/ colloquium

The final presentation usually takes place within 2 weeks after submission of the written thesis. We always offer the possibility of a trial presentation.

- **Duration** : 20 minutes, then 10-20 minutes discussion, questions, feedback in the group
- **Content**: Motivation, objective, overview of the main parts of the work, methodological approach, results, future works
- At the beginning, the presentation should cover the general idea for non-specialists, but then it should go into depth for selected parts.

6. After Completion

If **code** has been created, it should be handed in to us well-documented after the work has been completed.

Collected data, model parameters, hardware created should be prepared in an appropriate form as they are a part of the work.

If any keys, materials, tools, devices were provided by us, we ask that these are also returned to us properly.

Received	Returned

7. Further Notes