

# Remarks on Master Theses

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This document contains a few remarks regarding preparation of master theses under my supervision. I would appreciate if you could read the document and take the remarks into account before contacting me. *Thank you!*

1. **General:** Overall, I am very happy to mentor students writing a thesis. It is one core competence of university education to bring students to work independently on open/unsolved problems. A master thesis project must aim at a deep understanding of an open problem (albeit it may not necessarily solve it).
2. **Topics:** My research lies at the *interface between several fields*. Therefore, I can supervise quite a wide range of topics. However, you should have a suitable amount of specialized coursework of multiple master-level courses *in at least one* of the following areas:
  - differential equations / dynamical systems (ODE, PDE, dynamics)
  - probability / stochastic processes
  - geometry (differential and/or algebraic)
  - scientific computing / numerical analysis
  - mathematical modelling (network science, biology, and/or physics)
3. **Other Requirements:** Some basic programming skills should be very helpful. Similarly, other mathematical software tools are helpful, particularly some experience with LaTeX is necessary for typing the thesis.
4. **First Meeting:** Please send me an e-mail to make an appointment so that we can talk about whether it would make sense for you to do a thesis under my supervision.
5. **Language:** You can complete the thesis in German or English. However, it would be a good exercise to write the thesis in English.
6. **Other:** I do not advise master theses externally. You have to be enrolled as a full-time student at university.