

**Introduction to PhD studies in VTM, part 2 (of 3), 2.0 credits**

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Third-cycle education course

6FITN53

Department of Science and Technology

Valid from: Spring 2024

**Approved by**  
The Board of PhD Studies

**Approved**  
2024-04-24

**Registration number**

## Entry requirements

Admitted to PhD studies in Visualization Technology and Methodology. The course is supposed to be taken during the early phases of PhD studies. It consists of three parts that can be taken independently of each other.

## Learning outcomes

After completing the course, the PhD student has attained the following learning outcomes.

- A general understanding of the formal, practical, and social structures underpinning PhD studies in VTM, and a specific understanding of the personal implications of those structures.
- A general understanding of the norms of scientific practice in VTM research, and a specific understanding of what those norms imply for the PhD student's own PhD studies.
- A general understanding of the scope of the research subject of VTM as practiced in our division, and a specific understanding of how own research interests and plans relate to other research in the division.

## Contents

The contents of the course are divided into three parts, as follows.

1. Roles, responsibilities, and paths for PhD students in VTM: practical and administrative fundamentals, the three PhD student hats, national learning goals for the PhD, the progression of becoming a researcher, the supervisor-PhD student relation, work life and time management.
2. **Norms of scientific practice in VTM: criteria for academic research and researchers, publication practices and ethics.**
3. The scope of VTM: ongoing and planned research in the units of the division and in Visualiseringscenter C.

## Educational methods

The course is planned for a full semester with parts 1 and 2 running sequentially. Part 3 runs on low intensity throughout the semester to facilitate scheduling of “field trips” to each of the research units of the division and to the Center.

Each part has on the order of 6 taught hours, typically divided into introductions and follow-up sessions on the progress of individual examination assignments.

Each part ends with a plenary session where the individual assignments are presented. The first part presentation is a closed session for course participants only; the second and third part presentations may be of interest to the whole division and should be organized as MIT seminars.

The idea of “field trips” is that each unit (and the Center) is assigned a half-day time slot when they are responsible for hosting the course participants in an informal way, focusing on introducing ongoing and planned research. A typical approach might be an initial welcoming presentation, then a round of desk/bench demos, then an informal seminar on topics of particular interest to the hosting unit.

Grading is pass/fail for all parts of the course.

## Examination

Each of the parts is examined through an individual assignment requiring synthesis and reflection on the individual implications of more general knowledge.

The individual assignments are executed in writing and presented in seminars.

Part 1 is examined through a written manifesto or personal plan, setting goals and identifying concerns for the PhD student’s years ahead.

**Part 2 is examined through a paper on a topic of particular interest within norms of scientific practice, how the topic is approached in the different research units of the division, and what the personal implications are for the years ahead.**

Part 3 is examined through a paper identifying a small number of topical connections between the PhD student’s own plans and other ongoing or planned research within the division, including possible collaborations.

## Grading

Two-grade scale

## Course literature

For part 1:

- The Faculty PhD Study Handbook and other faculty-wide information

<https://liu.se/en/organisation/liu/lith/admission-to-doctoral-education-faculty-of-science-and-engineering> (handbook in Swedish only)

- An introduction to being a PhD student in Sweden, compiled by the Swedish Association for University Teachers and Researchers; including links to useful resources

<https://sulf.se/en/work-salary-and-benefits/doctoral-candidate-doctoral-studies/>

- A Beginner's Guide to Swedish Academia

<https://sverigesungaakademi.se/en/publications/book-a-beginners-guide-to-swedish-academia/>

- Expedition Guide for Your Career in Academia

[https://sulf.se/app/uploads/2022/10/Expeditionsguide-till-den-akademiska-karriaren\\_221021\\_ENG\\_utskrift.pdf](https://sulf.se/app/uploads/2022/10/Expeditionsguide-till-den-akademiska-karriaren_221021_ENG_utskrift.pdf)

- Section 9. Degree Objectives in the eISP for the national PhD learning goals.
- Expectations and roles in PhD studies and supervision

<https://liuonline.sharepoint.com/:b:/r/sites/intranet-inst-itn/Blanketter/Appendix%203%20to%20eISP.pdf?csf=1&web=1&e=7gv9Wp>

## For part 2:

- ACM Code of Ethics and Professional Conduct

<https://www.acm.org/code-of-ethics>

- IEEE Code of Ethics

<https://www.ieee.org/about/corporate/governance/p7-8.html>

- Munzner, T. (2008). Process and Pitfalls in Writing Information Visualization Research Papers. In: Kerren, A., Stasko, J.T., Fekete, J.D., North, C. (eds) *Information Visualization*. Lecture Notes in Computer Science, vol 4950. Springer, Berlin, Heidelberg.

[https://doi.org/10.1007/978-3-540-70956-5\\_6](https://doi.org/10.1007/978-3-540-70956-5_6)

- Laramee, R. (2011). How to Read a Visualization Research Paper: Extracting the Essentials. *IEEE Computer Graphics & Applications*, 31(3):78-82.

<https://doi.org/10.1109/MCG.2011.44>

- McNabb, L., Laramee, R. (2019). How to Write a Visualization Survey Paper: A Starting Point. In: Tarini, M., Galin, E. (eds.) *Eurographics 2019 – Education Papers*.

<https://doi.org/10.2312/eged.20191026>

- Elmqvist, N. Blog posts on best practices in (HCI-oriented) visualization research, including How to Review HCI/Visualization Papers (2015) and How to Write the Literature Review (2019).

<https://web.archive.org/web/20230923175215/https://sites.umiacs.umd.edu/elm/2015/12/to-review-hcivisualization-papers/>

<https://web.archive.org/web/20230923184529/https://sites.umiacs.umd.edu/elm/2019/0/the-literature-review/>

- Correll, M. (2019). Ethical Dimensions of Visualization Research. Proc. Human Factors in Computing Systems (CHI '19), #188.

<https://doi.org/10.1145/3290605.3300418>

For part 3:

- Articles and other learning resources provided by the respective units in connection with the “field trips”

## General information

Niklas Rönnberg is responsible for part 1 of the course.

**Jonas Löwgren is the course coordinator and responsible for part 2.**

Kostiantyn Kucher is responsible for organizing part 3.

Unit managers (and a management-level colleague at the Center) are responsible for their respective half-day “field trips.”

The primary supervisor for each PhD student participating in the course is responsible for supporting the student in their work on individual assignments.

One of the main tasks is to guide the student in moving from the general level of knowledge introduced in the course, to the specific application within the student’s research topic and immediate working environment.

Specific subjects such as work-related stress and time management are taught by invited teachers with adequate expertise in the subjects.