

Module Description

Master Thesis

General Information**Module Code**

GEO_MTh

Module Category

Specialization

Lessons

Project work

MTh100 – 100% of week

MTh80 – 80% of week (semester extended)

MTh60 – 60% of week (semester extended)

ECTS

30

Module Language

English

Projects can be completed in German or English (defined at the start of the project in discussion with the project supervisor)

Presentations should be held in English. If you plan to present your MTh in German, get the agreement of your supervisor, and inform the profile responsible (susanne.bleisch@fhnw.ch) by semester week 4 (SW04) at the latest.

Module Description

More than half of the MSE consists of project-based learning in the chosen topic fields. Students complete demanding applied research projects to apply and extend the theoretical and practical knowledge of a selected topic within the field of Geomatics.

The students are given a general description of the project's topic or problem area, including some pointers to relevant literature. The topics/problems are generally related to ongoing or future research projects at the Institute of Geomatics. Based on the topic description, the students review the state-of-the-art of the topic area and define the specific research questions of the project that will advance the topic area. The literature review and research questions together with a description of the intended research methods as well as a project management plan is detailed in the research plan. The research plan details an anticipation on how the research questions can be answered based on the anticipated results of the research methods. The research plan is used to discuss the planned project work with the supervisors and, if the supervisor agrees, to work on and complete the project accordingly in the given time frame.

Each Master thesis is co-supervised by an accomplished expert (external, in some cases internal) on the topic.

Learning Objectives, Contents, Methods**Learning Objectives and Acquired Competences**

- The students individually complete a demanding applied research project to advance the knowledge in the specific topic area. They review the state of the art, define suitable research questions and relevant methods, implement the research project, document the results, and evaluate their findings in the light of the research questions and the overall state of the art in the topic area. Each project aims at adding some new knowledge to the topic area concerned.
- The students implement suitable project management methods to complete and document the project in the available time.
- The students manage the communication of their project and stay in contact with their supervisors.

Module Contents

- The students analyze a topic area of an applied research question or problem and review the state of the art.
- The students define their specific research questions based on the literature review and analysis of the topic area.
- The students evaluate the suitability of different approaches and solutions and define and implement selected methods to complete their applied research project and to find answers to their research questions.
- The students define and write up their research plan including state of the art review, research questions, methodology and project management plan (including suitable milestones) – to be agreed upon by the supervisor by the dates given below (Testat requirements)
- The students implement their research project based on the research plan and document the process and the results suitably structured.
- The students evaluate their results regarding the defined research questions and the overall state of the art of the topic area and clearly document the new knowledge resulting from the project work as compared to the state of the art.
- The students present their thesis project to a professional audience.

Teaching and Learning Methods

Individual project work

Coaching by project supervisor (a minimum of two project meetings between supervisor, student and expert is required, typically a start meeting at the beginning and a review meeting after half time)

The students regularly inform the supervisors and experts about their progress in relation to the defined project management plan (e.g., weekly emails).

Requirements

Successfully completed modules HABG_STAR, GEO_Proj1, and GEO_Proj2 at the start of GEO_MTh.

Assessment

Testat Requirements

- Signed and accepted IPR agreement
- Accepted research plan (any change requests incorporated) by
MTh100: end of semester week 7 (recommended: end of semester week 5)
MTh80: end of semester week 8 (recommended: end of semester week 6)
MTh60: end of semester week 9 (recommended: end of semester week 7)
- Minimum of two projects meetings with thesis supervisor and expert
- Oral presentation and subsequent discussion of the project (professional audience)
- Poster and poster presentation of project to professional audience
- Suitably structured, written, and illustrated technical-scientific documentation of the project submitted by given deadline.
- Use of personal server space (S:\HABG\IE1311_MSE\IE1311_GEO_StudentName) for project work, data storage, and revised project submission. Submit all relevant files of your work in a useful and documented folder structure on your personal storage space. This includes all original files of PDFs and reports, such as word or ppt files as well as the original graphic files as separate files.
- Writing and discussing a personal data organization concept in the first week.
- Report includes written and signed statement of independent work. See example text below.
- Short video documentation (2-4 minutes) of completed research project.

Final Module Assessment

According to Module Assessment Form, regarding content, form, as well as assessment of the oral presentation of the project.

The projects are assessed by the supervisor as well as the defined thesis expert.

Dates and Deadlines (stated as calendar weeks, see timetable of the respective semester for precise dates)

MTh100: project start calendar weeks 8 and 38, submission deadline on Friday in calendar weeks 24 and 2 respectively

MTh80: project start calendar weeks 8 and 38, submission deadline on Friday in calendar weeks 28 and 6 respectively

MTh60: project start calendar weeks 8 and 38, submission deadline on Friday in calendar weeks 34 and 12 respectively

Oral and poster presentation at MasterForum

MTh100 and MTh80 present their thesis at the MasterForum organized at the end of the thesis semester (calendar weeks 25 and 3 respectively), the version used at the MasterForum will be graded

MTh60 present their thesis at the MasterForum at the end of the subsequent semester (calendar weeks 3 and 25 respectively), slides/poster must be submitted at the project submission date

Submission of the PDF version of the Master Thesis reports per email to the supervisor and expert are due at the dates listed above (see timetable of the respective semester for precise dates). The video documentation and the printed report can optionally be submitted one week later.

Remarks

The Module Master Thesis is normally completed in full-time mode (MTh100).

Modes MTh80 (80%, 4 days of project work per week) or MTh60 (60%, 3 days of project work per week) can be applied for.

Applications for modes different to MTh100 must be reasoned and submitted in written form to the advisor and profile responsible (susanne.bleisch@fhnw.ch) well before the semester start (ideally together with topic selection or even beforehand). Switching to a different mode during the Master thesis is not possible.

The MSE or the Institute of Geomatics do not pay for any costs or expenses incurred by the Master Thesis work.

Example statement of independent work

"I certify that I have written this thesis independently and without using any sources or aids other than those listed in the bibliography. Any content that was created with the support by digital or human lectorate, code checking, or other forms of aid are suitable marked, and the aid declared, Passages taken verbatim or paraphrased from the sources and aids listed in the bibliography are identified in the work as citations and provided with a reference to the bibliography. I agree that my work can be checked electronically for plagiarism. This Master's thesis has not been published, not made available to any other interested parties, nor submitted to any other examining authority."

Place, Date, Signature