Course manual Master’s Thesis Sustainable Development 2014-2015

Course Code: GEO4-2321  
Credits: 30 or 45 EC

Track coordinators

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Lecturers and topics

For an overview see the Blackboard site MSc Sustainable Development Master thesis.

Course materials


Entrance requirements

- Letter of acceptance MSc Sustainable Development, and
- At least 60 EC passed within the program, including:
  - Research in GCE (GEO4-2319) in track GCE, or
  - Research Design EG (GEO4-2314) in track EG, or
  - Advanced M&T Development Studies (GEO4-3508 or 3517) AND Internship (GEO4-3509 or 2333) in track ID, or
  - Sustainable Energy Systems (GEO4-2312) or Sustainable Energy Supply & Solutions (GEO4-2312) OR Energy & Material Efficiency (GEO4-2324) or Energy & Resource Efficiency (GEO4-2324)

Students in the SUSD-Joint Programme will need to have passed 60 EC, including one of the mobility tracks.

Course position and description

The Master’s thesis is the grand finale of the Master’s programme. Students can apply the knowledge they have acquired in the courses of the programme in an individual research trajectory. The thesis is the ultimate test to see if students fulfill the learning outcomes of programme.

Students will specialise in a subject that fits with the current research themes/research groups within Environmental Sciences, Environmental Studies or International Development Studies. Depending on their ambition and interests, students focus on one of these research themes and
develop their own research proposal with support from their supervisor. After the research proposal has been approved the student executes the research and reports the result in the form of a written thesis and an oral presentation.

The supervisor acts an intellectual guide, assessor and main contact with the university during the thesis period. The research can (partly) take place in an organisation other than the university, depending on the data needed to answer the research question. In general, several firms and institutions are possible locations to perform parts of your MSc thesis, including those in other countries. Please consult your thesis supervisor about the suitability of the organisation of your choice.

**Learning objectives**

The overall aims of the Master’s thesis is to train students to perform research independently as an sustainable development analyst and to specialise in a particular sustainability theme. The learning objectives of the thesis are directly linked to all intended learning outcomes of the programme. After the course the student is able to:

- translate a relevant issue in the field of sustainable development into a research question, based upon the state of art in the scientific literature
- elaborate a research strategy, using existing theories and methodologies;
- develop a research plan, choosing and justifying appropriate methodologies for data collection;
- conduct the empirical work needed and analyse the collected data;
- interpret the findings in the light of the existing scientific literature;
- write a scientific report about the findings;
- conduct a full research cycle within a restricted amount of time.

**Structure of the course**

The course consists of several steps that you have to go through. These are described below.

**Step 1: Selecting a topic and a supervisor**

The first thing you need to do is to select a topic in consultation with the track-coordinator. Topics and possible supervisors are posted on the Sustainable Development Blackboard site. These fit with the contents of the SUSD programme and the research of the connected research groups. The track coordinator decides who is available for supervisors on the selected topics. You will only contact the suggested supervisor after this discussion with the track coordinator. Supervisors are expected to accept you if you wish to write your thesis on their topic, unless they are already supervising a determined number of students. The supervisor will inform you about this. If you develop your own topic supervisors can refuse supervision. The reason for this is that we cannot guarantee sufficient quality of supervision on topics that lie outside the area of expertise of supervisors. The day you and you supervisor agree on supervision will be noted as the starting date of your thesis project. Both of you will go to the IEES secretary’s office (Unnik 10.20) and let them know that you will be starting your thesis work. Based on this date, a deadline for the research proposal and an end date will be set. You also have to make decisions on modes of instruction.

**Step 1b (optional): Finding an internship:**

It is encouraged that you go to an external organisation to conduct part of the research. Working at an external organisation often eases collection of the data, and provides you with professional work experience. However, the internship has to fit with the research theme you selected and the research you conduct will be primarily judged on academic impact. It is therefore of vital importance that you communicate well with both your supervisor and the internship organisation. If the
internship does not fit with the theme of your supervisor or fails to meet the quality level of academic research, your supervisor may refuse to further supervise your project. Therefore, you need to find an internship that fits with the topic and discuss this well in advance with your supervisor. You are primarily responsible for finding an internship and for what you get out of it. Your supervisor can help or advise you however. A number of internships are posted on the SUSD-website. Internships may be also be found on the website http://internships.geo.uu.nl. The university supervisor will always have the final responsibility for the assessment. If you are to carry out an external assignment, your host organisation might present you with you an internship contract, for instance concerning confidentiality. Discuss this with your supervisors. Also, the Faculty has its own model contracts (to be obtained from the secretary’s office, room 10.20).

Step 2: Writing a research proposal:
The next step is to write a research proposal. The primary aim of the research proposal is to guide you through the rest of the research. However, by writing a good research proposal you also convince others that you are able to conduct high-quality research that is original, relevant and feasible, using appropriate theories and methods. Finally, you demonstrate that you can write the research clearly and attractively. Follow the instructions given by your supervisor carefully and make extensive use of the feedback you receive. In addition you can use the knowledge from the research design oriented courses in your track to help you with writing the research proposal.

You are expected to finalise your proposal after the first 4 weeks of your research project. The proposal consists of a maximum of 5.000 words, and the structure of the first chapters follows closely the outline of a scientific report. In each proposal the following points need to be addressed:

- Fill in the research proposal form
- Add a title page with your name, a title, your contact details and the name of your supervisor
- **Introduction**
  - Societal background or problem
  - Scientific background and previous studies. What is the underlying scientific problem and what are the most important contributions in this area?
  - Identification of the gap in literature: what hasn’t been done yet? This is not necessarily exhaustive. A more in-depth literature survey can be part of the research work.
  - Based on this, the research aim, question and optional sub-questions and research framework.
  - Short elaboration on the research questions. If required, clarify your questions and you can briefly state how you approach the problem theoretically and methodically.
  - Scientific relevance, explain how this study contributes to filling the gap in literature and what you add theoretically or methodologically to the field of Sustainable Development.
  - Societal relevance: how do you help solving the societal problem?
  - If required, a brief outline of the proposal
- **Theory**
  - Explain what theory you use
  - Explain how you use the theory, do you build theory, or do you test theory?
  - Background: briefly explain the theory
  - Why is this theory appropriate?
  - The concepts that you use from the theory and why these are relevant
  - Give definitions of your concepts
  - Argue why concepts are related, if possible state hypotheses
- **Methods**
  - The methods you use and why (qualitative or quantitative)
  - The type of data you will collect (survey, interviews, patent analysis, etc)
  - The data sources you use
  - How the data will be collected
- How concepts are measured (e.g. add questionnaire items or give an interview scheme)
- How will you analyse your data (e.g. multivariate statistics or open coding, etc.)?
- The reliability and validity of your methods
- How will this answer your research question?

**Planning and agreements**

- First of all, include the starting date of your thesis which you agreed upon with your supervisor. Start planning from this date onwards (see next point).
- Give a planning in time for all activities of the research. A 45 EC thesis will take 32 weeks of full-time work. A 30 EC thesis will take 21.5 weeks of full-time work. The number of full-time working weeks can be spread over a longer period, e.g. if you are taking a course or have a job alongside your thesis, if you are planning holidays during the thesis work or other reasons which means you have to work part-time on the thesis. You have to make this very clear in your timeplan.
- You cannot switch from 30 EC to 45 EC or vice versa, after the Board of Examiners has approved your research proposal.
- It is not possible to change the amount of EC up or down.
- Take deadlines into account (see planning, deadlines and extensions)
- Include other activities that you have, such as holidays or unfinished courses.
- Include the consumption of the available 48 hours (45 EC) or 32 hours (for 30 EC) for supervision (including reading hours of your supervisor(s)).
- The most important agreements you made about your working relationship and supervision modes. These are important for grading the process and in case the Board of Examiners needs to intervene in the process.

**References**

- Use a reference manager (Mendeley) to generate a consistent list of references.
- Refer to (peer-reviewed) articles.

After your supervisor has approved the proposal, you can send it to the Board of Examiners through the secretary’s office. Your supervisor will suggest a second reader to the Board of Examiners. The Board of Examiners will send the research proposal to the second reader (see examination and requirements). Within fifteen working days after the submission of your proposal, you will be notified whether or not your proposal has been approved, either by e-mail or by snail mail.

**Step 3: Registering in OSIRIS**

When you hand your research proposal, you also need to register yourself in OSIRIS for the course. Your thesis proposal will not be approved if you have not registered for the course.

**Step 4: Conducting the research and writing a thesis**

While you are waiting for the approval of your research proposal, you should continue with conducting the research, as the 15 working days will count towards the deadline of your thesis. However, you are not allowed to go abroad or start an internship before approval of the research proposal has been received. The exact contents of this step depends on how you and your supervisor have agreed on supervision. It is therefore important that you have regular contact with your supervisor and that you follow up on agreements. Make your own report of each meeting. From you supervisor you may expect that he or she also follows up on agreements. However, the initiative for contact is always with the student.

If unexpected delays or other problems come up, discuss these with your supervisor. If required you can ask the Board of Examiners for an extension, giving appropriate reasons for the delay (such as issues with data collection, illness). The extension can be 8 weeks (45 EC) or 6 weeks (30 EC) maximum.
A (limited) number of computers is available for students working on their thesis, in room 11.16. The key of this room can be picked up at the secretariat, room 10.20. First come, first served.

During this step you are also expected to write your thesis. Always economise your words and get rid of sections that are redundant. Basically, anything that does not contribute to answering the research question is redundant. Further, almost all repetitions are redundant (there is for example no need to repeat the research question throughout the paper). Be transparent in the structure of your writing and your arguments, use consistent terminology and be consistent in the order that you mention things (for example variables) throughout the thesis. Finally, you have to write to the point and be very precise. Given that the introduction, theory, and methods are already discussed above the following elements are required for the remainder of the thesis:

- Add a summary to the thesis, limit this to **400 words**.
- Preface
- The structure of the introduction, theory and methods chapters of your thesis is very similar to that of your research proposal. Often you can adapt and extend these parts of your proposal to your current work and include the comments that were given by the second reader (if any). Most work will probably be a further specification of the methods section. Finally, do not forget to change future tense to past tense or present tense!
- Results
  - Present the actual results you get. Start with general points (overall model performances, general descriptive results or overall impressions). Then become more specific (for example link to hypotheses).
  - Use tables or figures to present results if required and discuss the tables. In case of qualitative research, illustrative quotes can help explain the context and bring text alive.
  - Link the results back to the theory section or specific hypotheses.
  - Give alternative explanations in case of unexpected findings.
- Conclusions\(^1\)
  - Give your research question and a very short summary of what you have done (the only time repetition is allowed).
  - Give the answer to the research question. Do not simply repeat your results!
- Discussion
  - What are the limitations of the research? You can use the concepts of reliability and validity to help you here. You can also perform a sensitivity study, if relevant. Be critical, but convince the reader that your research still has an added value.
  - Theoretical implications. How did you extend current theoretical insights and add to the literature? This should link back to your contribution in the introduction. You can give avenues for further research here.
  - Managerial or policy implications. What advice follows from your research? Make sure that these recommendations follow from your results and that they are in line with your research question. Don’t be too speculative and try to avoid normative terms like ‘must’ or ‘should’.
- References
  - See above
- Acknowledgements
  - You can include a short word of thanks to those who made this research possible. Please remember that this is part of a professional publication. It is not appropriate to thank all your friends for the great student life you had during the past five years, or to personally thank people for the coffee they drank with you.

\(^1\) Sections conclusions/discussion may be swapped around according to your scientific discipline’s customs.
Step 5: Completion and presentation

When you reach the point of finishing your research and report, you can plan the final presentation. For this you need the (verbal) permission of your supervisor. Your supervisor can only give his/her consent to carry out your presentation when he/she has agreed with the draft report written. After you receive permission, you can register for a presentation at the secretariat. Upon registration, it will be checked whether you have attended a sufficient number of presentations (see examination and requirements). The presentation should be given at the earliest opportunity after the deadline set at the start of the thesis project (see letter Board of Examiners). You may also present your thesis before the deadline even if it is not completely finished yet, but always only with your supervisor’s permission and after you have attented at least 10 presentations yourself.

Hand in your final report 10 working days before your final presentation at the latest, one copy to your supervisor, plus one hard copy for your 2nd reader. This is to give your 2nd reader enough time to assess your report (see examination and requirements). If preferred by your supervisor and/or 2nd reader, you may also hand in a pdf version instead of a hard copy. Please be aware of the possibility that your 2nd reader might still reject your report: your supervisor’s permission for delivering your final presentation does not imply that you have passed this component! The assessment form of the report can be found on the Sustainable Development website. Read it carefully and use it to pre-assess your own work!

The presentation takes a maximum of 20 minutes. You are also expected to take questions during 20 minutes afterwards. The presentation should roughly follow the structure of the research report:

- short outline of the problem
- problem definition and research question
- analytical and theoretical framework
- research method
- main results,
- conclusions and discussion

Avoid to treat everything you did in the research project, but rather focus on the highlights.

Your supervisor is expected to be present at the presentation (see examination and requirements) and can ask questions (apart from the audience). Be prepared for questions from audience members who are less familiar with your work.

After your final report has been approved by both your supervisor(s) and the 2nd reader, submit a digital copy (pdf) of your definitive final report to the secretariat, sign the Statement of Originality and complete and hand in the evaluation form Master’s thesis. Finally, do not forget to upload your thesis (pdf) to the theses database Igitur: https://osiris.library.uu.nl/scrol2/index.html?ou=GEO. This is an obligatory part of your examination.

Planning, deadlines and extensions

The Master’s thesis is either 45 EC or 30 EC, which corresponds to 1280/860 hours or about 32/21.5 weeks. During your thesis period there are four fixed deadlines that you have to meet (assuming full-time work; you need to adjust this if you are working part-time):

- After 4 weeks: submit the research proposal
- Between 4 and 32/21.5 weeks, regular discussions of individual draft chapters, every 3-4 weeks
- After 32/21.5 weeks: submit the written thesis
After 32/21.5 weeks + 10 working days: at the first opportunity present your thesis. (Or earlier with your supervisor’s permission.) Submission means that the secretariat has received a copy of the product. If you have good reasons for an extension of the deadline, you need to file a request with the Board of Examiners (examencommissie.geo@uu.nl). Your supervisor needs to approve the extension and to send his/her approval to the Board of Examiners. Good reasons can be that you were confronted with circumstances beyond your control. Asking for an extension is always the responsibility of the student. The maximum length of an extension is 8 weeks (45 EC thesis) or 6 weeks (30 EC thesis). The amount of EC cannot be changed.

If no final thesis has been handed in by the deadline (+ extension if applicable), the student has to hand in the thesis as it stands at that moment (i.e. on the day of the deadline) and it will be graded for product (i.e. thesis itself) and process. If the student has already delivered the presentation, this will also be graded. If the student has not yet delivered the presentation, this will be left out of the grading equation. If the thesis is handed in after the deadline, your supervisor can decide that you have not fulfilled the effort requirements and therefore grade your thesis with NVD (Niet Voldaan; not fulfilled). In effect, that means you have to start a new project with a new supervisor.

Examination and requirements

During the thesis process there are a number of deliverables that you have to submit in order to pass the course. All deliverables are judged by your supervisor and an independent second reader. The second reader is a member of the staff from the IMEW Department or International Development group and has a PhD. Grades are given within 10 working days. If the supervisor and second reader cannot come to an agreement on the content part of an assessment, the Board of Examiners will decide. Decisions made by the Board of Examiners usually take up to 15 working days.

The first product is the research proposal, which can be graded as “approved”, “approved if conditions are fulfilled” or “rejected”. While waiting for the Board's assessment of your proposal, please continue working on the thesis. It is not allowed to go abroad or start an internship before the proposal has been approved. If the proposal is approved, the student can continue with the research, but the Board might give you some additional advice. If the proposal is judged “approved if conditions are fulfilled”, then there is a list of concerns that needs to be addressed. Students have four weeks to address these issues and to hand in an adjusted proposal. Your deadline for the final thesis will not be adjusted if you have to re-write the proposal. If a proposal is rejected, the student will have to start the course over with a different supervisor and a different topic. If the student fails to submit a proposal before the deadline or if after two months no proposal has been approved, the proposal will automatically be rejected, unless there are good reasons for the delay (to be judged by the Board of Examiners).

The second is the written thesis, which makes up 70% of the course grade. The thesis needs to be handed in before the deadline set by the Board of Examiners. If there is a delay beyond the final end-date, the Board of Examiners can decide to give an extension when there are good reasons. It is always the student’s responsibility to request an extension well in advance of the deadline. If no extensions are possible the student needs to hand in his thesis on the day of the deadline for grading. Your thesis will be checked for plagiarism, using advanced anti-plagiarism software.

Thirdly, the student will give an oral presentation about the research at the earliest opportunity. The grade is given by two staff members who are present during the presentation one of which should be the thesis supervisor. If the supervisor is unable to
attend the presentation, he/she is responsible for finding a suitable replacement. The presentation counts as 10% of the final grade.

- Finally, the student receives a grade for the process, which is 20% of the final grade. This grade is given by your supervisor who may decide to include opinions of other supervisors who were involved in your project, such as internship supervisors. However, this is at the discretion of your supervisor.

Both the supervisor and 2nd reader sign the assessment form, which means both take responsibility for all the grades given and comments supplied.

Note that the Board of Examiners will only consider requests from students that are registered for the course in OSIRIS. This means that you cannot receive any extension, grade or a judgment on your research proposal, if you are not registered.

Students need to follow-up on agreements made with the supervisor or other external parties. Further, the student is expected to operate in a professional manner towards the supervisor and external parties. If the student fails to follow-up on agreements, behaves unprofessionally too often or if the working relationship becomes unworkable, the supervisor can ask the Board of Examiners to end the project. Ending the project means that the student will have to start the course over with a different supervisor and a different topic.

If the student feels that the supervisor does not follow-up on agreements or behaves unprofessionally too often and that this cannot be improved, the student may ask the Board of Examiners to continue the project with a different supervisor. If this request is honoured a new supervisor is appointed by the Board of Examiners. The student can use the data that was already collected for the thesis to finish the project.

If the supervisor is unable to continue supervision for reasons that are not related to the student and his/her behaviour (for example, medical reasons), the student can continue the project, but the Board of Examiners appoints a new supervisor. The student can use the data that was already collected for the thesis to finish the project.

During your Master’s studies, you have to attend ten presentations of your fellow students preferably before you start working on your own thesis. Do not forget to sign the attendance list on these occasions. A student cannot register for his/her own thesis presentation unless he or she has attended at least ten presentations of other students.

To pass the course the weighted average of the grades for the thesis, process and presentation has to be sufficient (>5.50). If the weighted average is unsatisfactory, but within reparation limits (4.00<=grade<=5.49), the student may re-write the thesis and/or (re)do the presentation within 4 weeks. After satisfactory reparation, the grade for the course is a 6.00.

If the weighted average is below 4.00 or the reparation is not satisfactory, the Board of Examiners ends the project. In that case, the student will have to start the course over with a different supervisor and a different topic.

If a student drops out during the course, the programme leader, track co-ordinator and the Study Advisor will be notified by the thesis supervisor. To make sure that students in this situation are well taken care of, the Study Advisor will invite the student for a meeting.

To graduate, don’t forget to hand in all necessary information for your graduation in time. You will be notified by the student information desk (Studiepunt) when you have nearly completed your programme. On their website you can find important information on the dates and deadlines you’ll have to respect.
Course feedback group

Not applicable

Course evaluation

After completing the course, please fill out the Master’s thesis evaluation form which the department’s secretariat will provide you with.