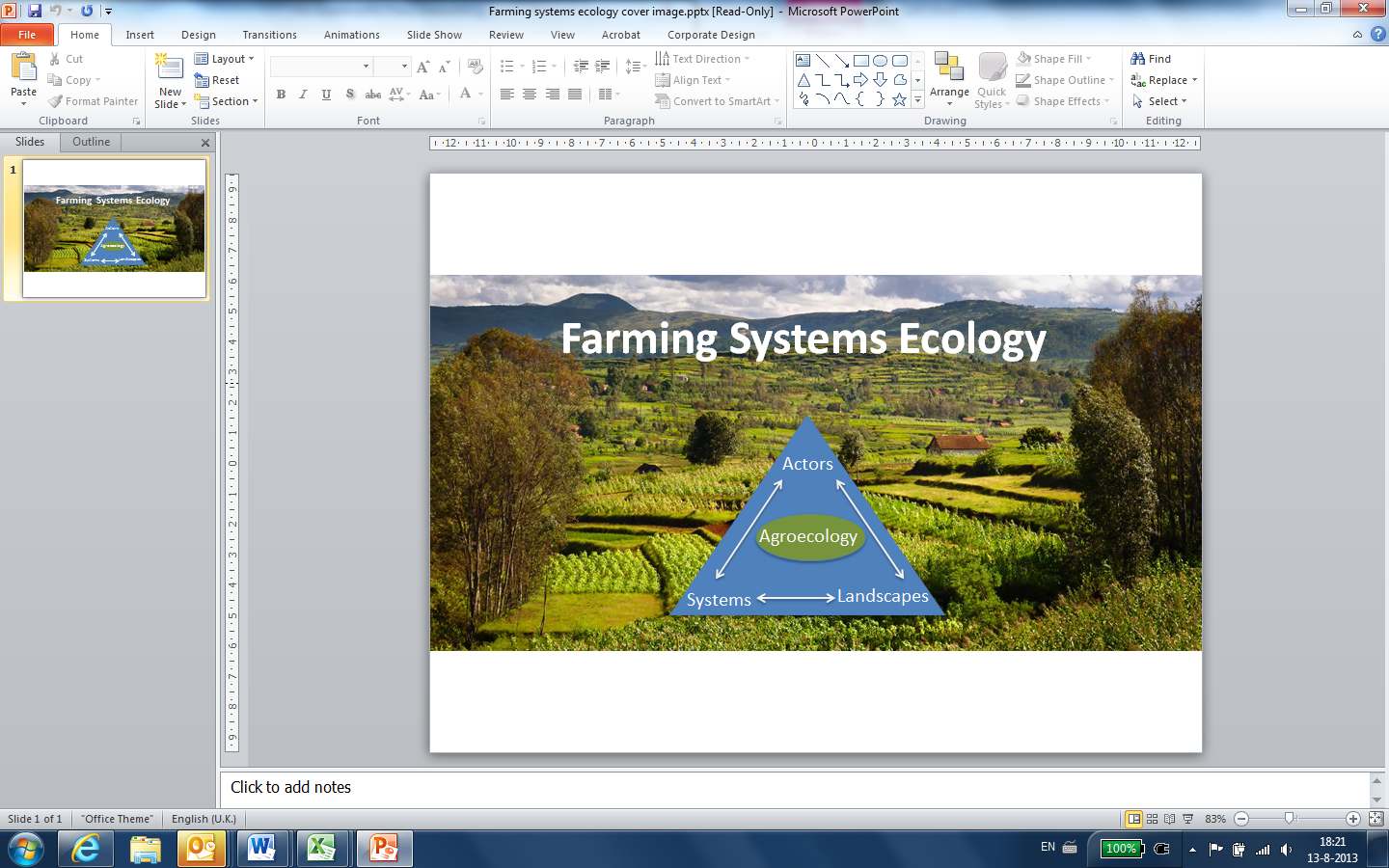
**Information Brochure**

**for Thesis Students**

Concept July 2017



**Farming Systems Ecology group (FSE)**

**Department of Plant Sciences**



**FARMING SYSTEMS ECOLOGY GROUP**

Department of Plant Sciences

Wageningen University

**Information for Thesis Students**

Concept July 2017

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# INTRODUCTION

Welcome to the Farming Systems Ecology group (FSE). FSE focuses on the analysis, evaluation and design of agroecological farming systems. The ultimate goal is high quality, value-driven agriculture that is based as much as possible on closed cycles and socially acceptable management in self-sustaining landscapes.

Before starting your thesis work, please read this booklet carefully. It provides information on registration, supervision, facilities, house rules, etc. In addition, you will find guidelines for writing, and information on the grading procedure. You will also find a chapter with information on whom to contact with general questions and support during your thesis.

The aim of this booklet is to ensure that you understand what is expected of you, and to provide a basic structure for ensuring an optimal research experience for you while maintaining research standards.

# THE THESIS PREPARATION

## 2.1 Selection of a thesis subject and supervisor

The identification of a suitable topic may take time, so start this process 3-6 month prior to the actual starting date of your thesis.

An overview of topics for MSc research and associated supervising staff members is available on the Tip website (http://www.tip.wur.nl/).

If there is a topic that has your interest or if you have general questions, you can set up an appointment with our educational co-ordinator, Dr Dirk van Apeldoorn (dirk.vanapeldoorn@wur.nl). He can help you in providing general information and selecting a suitable topic that matches your interest and background. He will also introduce you to other staff members for further information on a specific topic or for providing supervision. However, if you have made your choice for a specific topic already, you can also contact the staff member involved with that specific topic directly. When you contact an FSE staff member about a thesis, then please send your curriculum vitae, a list of completed courses and marks and a description of your learning goals and interests for the thesis.

We expect students to work with ongoing research projects at FSE. You can work by yourselves or within a team of students looking at different aspects of a larger programme.

If complementary expertise is needed, in addition to the diverse disciplines represented in FSE, a second supervisor from another area (for instance animal sciences or social sciences) may be included in addition to the FSE supervisor.

Research can be conducted in the Netherlands (e.g. including on-going field studies at the organic experimental farm at Droevendaal or abroad (e.g. part of a PhD fieldwork) and may be combined with an internship. Combining the thesis and internship may allow for more in-depth study of different aspects (e.g. community profiling and conducting pilot studies) and/or development of refereed scientific publication. Main prerequisites are that research facilities, technical support, and on-site supervision are adequate (to be judged by the supervisor of FSE) and that the topic fits within the interest and expertise of the FSE Group.

## 2.2 Prerequisites

The FSE group offers thesis projects with a number of credits ranging from 24-39. For a major thesis (36 or 39 credits) students need to have successfully finished one of the following courses before the start of their thesis work:

* Analysis and Design of Organic Farming Systems (FSE-30306)
* Agroecology (FSE-31806)
* Organic Animal Production (FSE-31306)

Before you can start your MSc thesis, we expect that you finished 36 ECT’s in your MSc program. For a minor thesis, these courses are not compulsory, but still advised. For some topics specific knowledge or skills are needed and then the supervisor will discuss with you the need and possibilities for following additional courses.

## 2.3 Initial preparations

At the start of your thesis work, your supervisor will:

* Discuss the information that needs to be included in the thesis agreement form;
* Show you the facilities that you may use and explain their use;
* In case of external projects, establish contacts with local supervisors and discuss programme activities with relevant parties;
* Introduce you to other FSE members and, if applicable, also to some colleagues from other groups with whom we collaborate;
* Show you where you can find a working place: there is a computer room in the Radix building (Radix W3.Ga.011) where you may access one of the workstations. Alternatively, for students conducting their field research at Droevendaal farm, there is a computer room there as well that you may use. There is a clean desk policy so please clean up your working area before you leave every day. If there is a need for special software programmes to be installed, have your supervisor make arrangements for this;
* Introduce you to a Thesis Ring. During your thesis you are expected to participate in a Thesis Ring. This is a group of MSc thesis students at FSE that review each other’s work, from the proposal writing to the writing of the final paper. Dr Felix Bianchi is coordinating the Thesis Ring(s) at FSE;
* Inform you about our seminar meetings on Tuesdays at 12.30 h in which you should participate since it helps you to structure your own presentations later on;
* Introduce you to our secretary, Gemma Baas. She will:
  + Add you to the FSE e-mailing list so you will receive invitations to seminars/colloquia etc.
  + give a student access for printing the thesis in colour after final approval by your supervisor
* Send an e-mail to the PSG facility desk to provide you with access to zone 2 for the duration of your thesis;
* Introduce you to those students who will be making use of one of the laboratories of FSE, and to one of the laboratory managers (Hennie Halm and Dine Volker). They will inform you about the main rules of the labs.
* Make arrangements in case you incur costs directly related to the implementation of your fieldwork (e.g. travel costs, international visas, vaccination). You should start with this before the beginning your thesis. When the thesis is part of an FSE project, costs can be refunded by the project in some cases. In order to be eligible to be refunded for any incurred costs, you need to ask your direct supervisor for permission first, and you have to clearly specify the costs in a budget overview in the thesis proposal. Refunding of any research costs that cannot be refunded by a project, should be discussed with the Chair Professor. In many cases you will have to pay yourself for flights, visas, etc. The university provides funding under certain conditions: please check the information about the ‘Vaccination and Travel Funding’ in the Student Charter (<http://www.wur.nl/en/Education-Programmes/Current-Students/student-charter-2016-2017.htm>).
* Inform you that any contacts with people outside the university concerning the thesis research are to be made in agreement with your WUR-FSE supervisor. This is especially relevant for the stakeholder involvement in your project (see Appendix C).

## 2.4 Thesis agreement

The thesis agreement should be filled out, signed, and handed to the secretary before starting the actual thesis work.

The agreement can be found on <http://www.wur.nl/en/Expertise-Services/Chair-groups/Plant-Sciences/Farming-Systems-Ecology-Group/Education/MSc-Thesis-information.htm>.

Together with your supervisor you will fill out the thesis agreement which details commitments regarding MSc-thesis work, including commitments on frequency of supervision meetings, working hours and working plan (See also Section 5 ‘People who may be of help during your thesis work’).

Please note that the agreement is not an ‘official’ document that is completely rigid after being signed, but just a way to document the agreements made with your supervisor and the examiner. The thesis agreement can be renewed and adapted when required, but then it also needs to be approved again by your supervisor and examiner. In addition, it also outlines your student rights and responsibilities during the thesis programme.

## 2.5 Preparation of experimental work

* If your thesis work includes work in one of our laboratories, your supervisor will introduce you to the FSE colleague(s) that manage these labs (Hennie Halm or Dine Volker). They will show you around. Also prior to the onset of the work if you want to analyse samples at our facilities, a sample analysis request has to be submitted to Hennie Halm. This should include an estimate of the number of samples, the approximate date of sample submission and type of analysis required.
* If your thesis will involve working in the climate chamber, greenhouse or at the experimental farm, your supervisor should contact Dine Volker as soon as the initial experimental plan is completed: she will estimate the costs for use of these facilities.

## 2.6 Examiner

The Chair Professor or another staff member (not your supervisor) of the FSE group will be the examiner of your thesis. The role of the examiner consists of:

* Approval of your research plan.
* Approval of the oral presentation of your research proposal and that of your final presentation (colloquium).
* Successful completion of the thesis defence.
* Final grading.

# EDUCATIONAL AIMS OF DOING A THESIS IN THE FSE GROUP

Completing a thesis at Farming Systems Ecology will provide students with tools to prepare, perform, and report in:

* Scientific research pertaining to system components and their interactions and underlying processes and mechanisms;
* Analysis and design of organic/sustainable farming systems;
* Socio-economic surveys, community profiling, farm characterization, and stakeholder analysis (in collaboration with a staff member of a social sciences group);
* Organic production chains (in collaboration with a staff member of MCB (Marketing and Consumer Behaviour Group) or MST (Management Studies Group).

More specifically, we distinguish between educational aims with respect to conducting research, data analysis, scientific writing, understanding and communicating about the societal relevance of your research and presenting research results

## 3.1 Conducting research

Our aim is that after having completed the thesis, students will have learned to:

* Explore the background of a given research problem by critically reviewing current scientific literature;
* Formulate a research plan, including research goals/questions and corresponding hypotheses;
* Develop a detailed timeline and update it when needed (time management);
* Implement the research in accordance with the research plan while adhering to the timeline;
* Collect, process, analyse, interpret, and synthesize relevant information;
* Address research questions, critically discuss results and draw conclusions;
* Discuss mid-term results with supervisors and other students;
* Discuss possible problems with supervisors in a timely fashion;
* Incorporate advice of others in the research.

## 3.2 Data analysis

Our aim is that after having completed the thesis, students will have learned to:

* Enter data in a spread sheet in a logical and structured manner so that subsequent statistical analysis can be carried out efficiently;
* Carry out the appropriate statistical analyses;
* Draw conclusions based on statistical analyses; or:
* Formulate a quantitative model (e.g. simulation model, mathematical model or optimization model);
* Validate the model with data collected by either the student, or others within our research group or from the literature;
* Draw conclusions about the validity and limitations of the model.

## 3.3 Scientific writing

Our aim is that after having completed the thesis, students will be able to:

* Write a scientific text in English using the format of a scientific paper for a journal fit for the topic of interest [in this case, data and other pertinent details are being included as appendices]; writing the thesis in the format of a scientific report is only allowed as an exception;
* Use a clear and concise writing style and appropriate terminology;
* Present the results in logical manner using journal quality tables and figures;
* Formulate concise and sound conclusions; and
* Include a synthesis in which you refer back to your initial hypothesis and/or systems diagram.

## 3.4 Understand and communicate the societal relevance of your research

Our aim is that after having completed the thesis, students will be able to:

* Identify relevant stakeholders that may use or are interested in the results of the research.
* Discuss the results of the research with the relevant stakeholder(s)
* Present the reaction of the stakeholders to the results of the research to a broader audience (in the final colloquium)

## 3.5 Presenting results orally

Our aim is that after having completed the thesis, students will be able to:

* Prepare a well-structured, clear and concise presentation in English using PowerPoint or other presentation software (e.g. Prezi);
* Effectively communicate the results of their thesis to a scientific audience;
* Effectively communicate the results to a stakeholder and show the societal relevance of the research
* Answer questions from the audience in a clear and direct manner.

# THE THREE PHASES OF AN MSc THESIS

An MSc thesis is usually produced in three phases:

1. Thesis proposal development
2. Research implementation
3. Thesis writing and presentation

## 4.1 Phase 1: Thesis proposal development

(See Appendix B)

During the onset of your thesis, you have chosen the subject and perhaps discussed a possible research focus with your supervisor. A detailed research plan needs to be developed. It will usually take 3-6 weeks to complete a good plan (5-10 pages main text body, excluding references and appendices). This phase provides a scientific basis for the actual research that is carried out in Phase 2. The most important activities within this phase include:

* Exploring and delineating the research topic by critically reviewing current scientific literature (be creative and beware of plagiarism!); in the literature search you assess the state-of-the-art of on-going research and define existing knowledge gaps which helps you delineating your topic further. In terms of the initial literature search, the goal is exploring key references and other relevant information provided by the supervisor and obtained via a basic literature search using databases provided at the [WUR digital library](http://library.wur.nl/). This website provides direct access to tools that facilitate keyword searches such as Web of Science, Scopus, Google scholar, or OVID SP (e.g. AGRICOLA). Other information sources may include reports and books obtained from the library or the Internet.
* Formulating the research plan, including research goals/questions, corresponding hypotheses, relevant methodology (including statistical analyses) and timeline. Developing a systems diagram outlining key (research) components and interactions among them and this may be used to develop the overall thesis structure.
* Identify the journal for which you intend to write the thesis paper. This choice is provisional, but helps you to focus on the scope of your research.
* Identify relevant stakeholders and proposal to discuss your results;
* The research plan needs to be approved by your supervisor and the examiner before you start the research work.
* Presenting the thesis proposal to the FSE research group by developing a professional power point presentation that aims to solicit useful suggestions for further improving the proposal.

During Phase 1, students and supervisors have weekly meetings to discuss the progress. The final proposal must include suggestions provided by the examiner during the proposal presentation and should be completed before the start of the research.

During Phase 1, students start to join a thesis ring. Together with other MSc Thesis students, they review each other’s work throughout the thesis period. This will re-inforce communication within the group, and support the development and diversification of problem-solving capacities amongst students.

## 4.2 Phase 2: Research implementation

During phase 2, the research is being implemented. Important activities include:

* Implementation of the actual research as outlined in the project proposal;
* Adhere to timeline and update when needed of the project proposal;
* Collection and processing of data;
* Interpretation and integration of all additional relevant information;
* Complete statistical analysis of results or develop/implement suitable mathematical or simulation models;
* Use statistical tools/models to answer research questions and test hypothesis;
* Consult with your supervisor how to structure tables and figures
* Develop a conceptual framework for structuring draft chapters and presenting results;
* Integrate results, critically assess and validate findings;
* Contact stakeholder(s) and discuss the results and implementations of the results (Appendix C);
* Develop draft chapters and initial conclusions.

During Phase 2, the supervisor will guide the research in particular during the early phase. As the research proceeds, students will gain research skills and become more confident. They are thus expected to work more independently and to show more initiative at this point. A fieldwork period of several months may be part of Phase 2, sometimes abroad. During Phase 2 you will start writing the outline of your thesis paper. Meetings with the supervisor will take place on a regular basis, at least once every two weeks. During these meetings the progress is discussed, as well as possible problems. Students based in the Netherlands participate in weekly Thesis Ring meetings. Students completing their thesis abroad will sent detailed biweekly activity reports by e-mail to their supervisor instead, and when possible hold monthly digital discussion sessions using Skype.

You need to keep a diary of all daily activities and results in a notebook. The original notebook will be handed over to the supervisor after finishing the research. All research results are property of the university.

## 4.3 Phase 3: Thesis writing and presentation

The main activities during this phase include finalisation of the thesis paper, and an oral presentation of the main findings (colloquium).

We ask you to write your thesis report in the format of a scientific paper in English For the format you use the guidelines of the journal you identified in phase 1. You may reconsider this choice, but make it definite when you start writing. The paper is characterised by clear and concise writing. You will have to focus on the main messages you want to communicate (see Appendix D). If your paper is of high enough quality (to be decided with the supervisor), you will be authorized to submit it to the journal of scope and undergo a peer-review process of your original work.

The final draft of the paper needs to be handed in to the supervisor two weeks before the end of the project. After discussing this version with your supervisor, you still have time to make some changes. The corrected paper needs to be sent to the supervisor and to the examiner one week before the oral exam with examiner and supervisor (see Section 5.1). The document should have title page with standard layout (see under Education on the website of FSE).

You are required to hand in a digital (PDF file) copy and all appendices and data to the FSE group (for examiner, supervisor and secretariat). Discuss with your supervisor if any hard copies are needed. For printing of the paper you will be given access to the (colour) printer located at the MSc room (you can contact the secretary). *For colour copies, please contact the secretariat beforehand*. Binding of the document can be done at the service corner at the ground floor (W0, corridor E/F; near the meeting rooms).

The results of your thesis (data collected, new ideas developed, etc.) are the property of the FSE group and we have the right to use the results for education, publication or other purposes. If the thesis is of sufficient quality for publication, the MSc student is encouraged to submit a manuscript together with the supervisor and other participants on the research methods and/or outputs. The MSc student will be first author if the bulk of the intellectual work (including the analysis and writing) was carried out by the student. Students are not allowed to publish the results of their thesis work without prior consent of the FSE group.

Four weeks before the end of your thesis period, contact the examiner to schedule a tentative exam date and the presentation coordinator (FSE secretary, Gemma Baas) to schedule your colloquium.

You will present the results to other students, staff of the FSE group and other people who are interested. This colloquium will be announced by e-mail and posted on our homepage. Preparation will be done with the help of the supervisor. You will practice the presentation once for the supervisor who will comment on the content and structure of the presentation, and on your presentation skills. She/he will evaluate the actual presentation with you.

The oral presentation is based on a PowerPoint or Prezi presentation and takes 20 minutes maximum (plus 10-15 minutes for discussion). It should at least include (see Appendix E):

* The title of your thesis;
* Outline/purpose of the presentation;
* Introduction;
* Aim of the study / research questions and hypotheses;
* Materials and methods (including statistical analyses);
* Results;
* Conclusions;
* Discuss; and,
* Societal relevance/impact of your results for stakeholders

The sequence does not necessarily follow the above points. You may also start with your main findings and conclusions.

You are expected to submit all relevant documents digitally to the supervisors immediately after their completion. These documents include:

* Thesis agreement.
* Project proposal.
* Proposal presentation.
* Final draft paper manuscript (in MS Word and PDF formats). Although most journals require separate parts for the main text and for tables and figures, for the thesis paper you insert tables and figures throughout the text
* Colloquium presentation.
* Datasets (format agreed upon by supervisor(s) with clear comments) and the scripts or log-files of models used in the analysis. The final mark will only be submitted after completion of this task.

The grade will be submitted to the university administration only after these documents have been received by the secretariat.

During Phase 3, students will meet with their supervisors frequently (weekly or biweekly). It is recommended to finalise all these activities before starting a new thesis or internship elsewhere. Writing a thesis is usually a time-consuming activity. As a rule we suggest that it should not be combined with taking courses unless this is agreed upon with your direct supervisor and/or your academic advisor, before the beginning of the thesis period.

Both, students and supervisors, need to be aware from the beginning that planning a project is not an easy task. We think it is important that all the work for the thesis (including report writing and presenting the results) be finalised within the period agreed upon at the start of the project. Learning how to plan is an important part of your professional development. Failure to complete the thesis in a timely fashion may negatively affect your grade and could be costly, especially for non-EU students. If delays occur, make sure you communicate this in a timely fashion to both your direct supervisor and study coordinator.

# GRADING

## 5.1 Grading procedure

After completion of your report the examiner (which in most cases will be chair professor) together with your direct supervisor will evaluate the thesis work with you explaining the strong and weak points of your work. This ‘exam’ of your thesis will be done after the research has been completed and the paper has been handed in. In a final meeting of about 45-60 min, with the examiner and your thesis supervisor your work will be discussed. At the end of this discussion, the examiner will determine the final grade in consultation with your supervisor, and will provide the arguments for the decision. In some cases, your academic advisor may ask field supervisors for their input to assess your research abilities.

The grading will follow the educational aims as described above. The final grade will be based on four individual grades for:

* Research competence (45%);
* Paper (45%);
* Oral presentation skills (5%);
* Examination (5%).

#### Grading of research competence

Grading the research skills will be based on an evaluation of the student’s

* Commitment and perseverance;
* Initiative and creativity;
* Independence;
* Efficiency in working with data;
* Handling supervisor’s comments and development of research skills;
* Keeping to the time schedule.

In-country or field supervisors may be also contacted to provide input on your performance as a researcher. If potential tensions or conflicts occur, make sure that your advisor is aware of these so he/she may provide suggestion how to avoid/ address these.

**Grading of the thesis paper**

Grading the thesis paper will reflect

* Relevance of research, clearness of goals, delineation of research;
* Theoretical underpinning, use of literature;
* Use of methods and data;
* Critical reflection on the research performed (discussion);
* Clarity of conclusions and recommendations;
* Writing skills.

**Grading the oral presentation**

Grading the oral presentation skills will be largely based on the colloquium. It will reflect the student’s ability to:

* Prepare a structured, clear and concise presentation for a scientific audience;
* Use of supporting media (e.g. PowerPoint, Prezi, short movie) in a scientific presentation; Presentation of the stakeholders’ involvement: show how you discussed the results with the stakeholder(s).
* Answer questions in a satisfactory way.

**Grading the examination (thesis discussion)**

Grading the thesis discussion will reflect the student’s ability to:

* Defend the thesis in detail;
* Demonstrate knowledge in the general knowledge domain of the research carried out and of the functioning of relevant farming systems.
* Be able to highlight societal relevance/impact of the research conducted

The scoring sheet can be found in Appendix F.

## 5.2 Interpretation of grades

The final grade is based on weighted marks for (a) your research skills, (b) your research report, (c) your oral presentation, and (d) the final examination (see above). Integrating these aspects is not an easy task. The following guidelines to distinguish between the various grades have proven to be useful. However, they should be considered indicative and not taken as strict rules. In order to provide more nuances, in effect since 2010 grades features a half-point grade scale (e.g. 7.5, implies the thesis was considered to be better than a 7 yet did not meet the requirements for a full 8).

Grade lower than 6: This means that the student failed and that the work is unacceptable in its current form.

Grade 6: The outcome of the study is sufficient but below minimum requirements in some aspects; this may imply that the student needed substantial and repeated help during the research and in designing the research questions. The final results are acceptable but the output has some important shortcomings (for instance in structure, interpretation of results, and/or clarity in style and/or grammar).

Grade 7: The outcome of the study (both written output and oral presentation) is good, and fully meets the general requirements. The student did what could be expected from the research questions stated in the research proposal. The student made efficient use of the help provided during the development of the research proposal and the thesis work.

Grade 8: The quality of the thesis report exceeds basic expectation. For instance, the thesis may include some original ideas and/or innovative research approaches. The thesis output is clearly structured and well written. The student was creative in problem solving during the thesis programme. The oral presentation was good. Part of the work may, after editing or further analysis, be considered for publication.

Grade 9: The thesis includes substantial new ideas; the student demonstrated a lot of personal initiative, worked very efficiently and with minimal support and the student shows outstanding analytical skills and great academic potential. The thesis output has no (or minimal) flaws and provides a good basis for a scientific publication. The oral presentation was very good.

Grade 10: The thesis is outstanding in terms of structure, synthesis, and scientific impact. The student has unique analytical, writing and communication skills. The research presents a true advance in the scientific field addressed by the student and results are suitable for publication with only minor modification.

# SUPPORT DURING YOUR THESIS WORK

General questions about FSE and the formalities of thesis research at FSE can be addressed at the secretariat (tel. (4)81191 or through e-mail: [office.fse@wur.nl](mailto:office.fse@wur.nl)).

If you are looking for additional advice or training, the university offers general courses for development of capabilities and support (e.g. writing, statistics...).

If you face any serious problems regarding the implementation of your research, analysis of your data or the writing of the thesis contact your academic supervisor as soon as possible. If you have complaints related to the supervision or evaluation process during your thesis work, several people can help at Wageningen University. Of course the first one to contact is your supervisor, but if you feel this does not solve the problem, do not hesitate to contact others, this may include your study advisor, or the FSE educational coordinator.

## 6.1 People

If students and supervisors face serious problems during the thesis work, they are often concerned with a discrepancy between what was actually happening during the thesis work and what was agreed to beforehand.

Be sure you make clear agreements on the supervision: how many hours are reserved for supervision, what are the supervisor's office hours, what are the periods the supervisor will be absent and who will replace him/her, etc. Before you start your thesis work, these agreements will be recorded in the thesis agreement as well as agreements regarding reporting, facilities, evaluation, etc. The agreement will not prevent all problems, but it may facilitate finding suitable solutions to potential problems that may occur despite the best intentions of both you and your supervisor.

Try to contact your supervisor regularly and do not hesitate to discuss problems in an early stage! Sometimes it also helps to ask students that have recently completed their thesis for advice on how to address specific problems including issues such as time management, coping with stress and how to make efficient use of your time and available resources.

**Examiner and educational co-ordinator**

If you cannot resolve the problem with your supervisor, you could contact the educational co-ordinator of the FSE Group alternatively you may contact the FSE chair professor or your study advisor. They are available to help you addressing the problem and in most cases should address your questions within a few days. If not ask someone else.

**Study co-ordinator**

Your study co-ordinator is always available for questions and may provide advice or suggestions concerning your study and/or thesis programme.

**Student counsellor**

Through the secretariat of the Dean’s Office, an appointment can be made with one of the Deans for Students of Wageningen University. The Dean of Students confidentially supports students in practical and personal matters. He or she can be considered as a counsellor who can be contacted in case of personal problems, study problems and other questions.

## 6.2 Thesis Ring, courses or training

**Writing: Thesis Ring**

First, MSc Thesis students at FSE are required to participate in a Thesis Ring. In the Thesis Ring you support each other by peer reviewing each other’s work, from the proposal up until the final paper. If you do your fieldwork abroad, you will participate during the proposal writing and the paper writing phases.

A Thesis Ring is organised within chairgroups and consists of a group of students (7-10) that share their written work (both proposals and thesis reports) and orally discuss the quality of the work together in weekly meetings.

Students will learn to review each other’s texts. Peer reviewing is an important skill in the world of science that is often underrepresented in the thesis phase of students. Within the ring, aspects concerning both experimental design as well as scientific writing skills are discussed. A staff member chairs the meeting, and supervises the process and the quality of given feedback. We use Blackboard for the planning of submissions, sharing of documents, exchange of good practices, instructions and other supporting information

Felix Bianchi ([felix.bianchi@wur.nl](mailto:felix.bianchi@wur.nl)) coordinates the Thesis Rings at FSE. For more information about the Thesis Ring, see

<https://portal2.wur.nl/sites/ESD/nl-nl/ThesisRings/default.aspx>

**Writing: Wageningen Writing Lab**

For additional support, you can also contact Wageningen Writing Lab. Coached by a peer-tutor, you can improve your writing skills and learn to apply new strategies. You will find us in the library at the Forum building.

<http://www.wur.nl/nl/artikel/Wageningen-Writing-Lab.htm>

**Statistics**

For the analysis of (agro)ecological data statistical models are developed and tested, e.g. Multicriteria Analysis (MCA) or Principal Component Analysis (PCA). The R project software is very suitable for this.

Unfortunately, not all students are trained to use R when they start their thesis. You may consider taking the Ecological and Modelling and Data Analysis in R. (<https://ssc.wur.nl/Handbook/Course/CSA-50306>)

There is an R-users group in Wageningen, where MSc students are also welcome to learn from each other: <http://www.sense.nl/discussion_group_meetings/10850699/R-Users-Discussion-Group-Meeting>

# APPENDICES

### Facilities and house rules

(See also ‘2.3 Initial preparations’ on page 3)

1. The Farming Systems Ecology group is located at Droevendaalsesteeg 1, 6708 PB Wageningen (Radix Building, no. 107). Our secretary (not present on Fridays) can be contacted at tel. 0317 481191 or e-mail [office.fse@wur.nl](mailto:office.fse@wur.nl)).
2. The building can be entered on weekdays between 7.30 and 19.00 h with your student card. Only if you have additional permission on your student card for evening and weekends you can be present between 7.00 and 22.00 h (Fridays until 21.00 h) and in weekends from 10.00 – 16.00 h (at the main entrance). **In any case you have to leave the building well before the indicated end-time.** If you fail to do so and the alarm goes off, please wait for the security officer so that he does not have to enter the building to look for the reason why the alarm went off.
3. In the Service corners (shared with the Nematology or Phytopathology group) you will find:

* Multifunctional printer / photocopying machine / scanner.
* Kitchen facilities such as sink, refrigerator (see rules for use) and micro wave oven, and
* Table and chairs for lunch and/or coffee during breaks. Please clean after use.

### Guidelines for writing a research proposal

Usually it takes up to a few weeks to write a project proposal of about 5 pages. The proposal needs to include at least the following:

#### Title of the project

The title should be as concise as possible, it is usually a summary of the problem statement, and may include a geographic reference to a specific case study area.

#### Introduction / Background

The introduction includes a problem statement, and provides an overview of the scientific literature, summarising what is known about the subject and what knowledge gaps exist. It gives a brief reflection on the wider context of the research topic, the scientific and social relevance (why is it important) and on how the research idea developed. It is written in such a way that the purpose of the study follows logically from it.

**Stakeholder involvement**

At the start of your thesis research you should think about the people that might be interested in using the results of your thesis, at the short or long term. Write in your proposal how you are going to involve them and how you will present that to the chair group (by an interview, presentation, discussion, presence at your colloquium).

#### Purpose of the study

From the introduction and background, the purpose of the study can be formulated. This is the scientific formulation of what will be achieved in the research. A number of research questions that will be answered and the corresponding hypothesis that will be tested follows it. This section will also provide a conceptual basis for Chapter 1 of the thesis. The methods to be used and described in the next section should focus on answering the research questions and testing the corresponding hypothesis. A separate section in the final report (usually called "discussion and/or conclusions") should present the answers to these questions.

#### Materials and methods

A description is given of how the research questions will be answered. The research method(s) and tools used are described. For experimental research, the treatments, replications, experimental design and intended statistical analysis are outlined. Experimental methodologies are also briefly described. For systems analysis, the research method is often a combination of for example literature study, interviews, modelling, fieldwork, etc. This description of the method may serve as the basis the materials and methods in your paper.

#### Planning

This section should give a description of the planning. A Gantt chard should be made to show the planning with key activities and a timeline of specific tasks.

This section shows at what time specific research component are being initiated and/or completed, and when draft chapters of the report are due. It also allows for a review period when comments from the supervisor are being addressed, and indicates when the final colloquium is being held. The planning may also include a strategic research plan, discussing for example where the research will be carried out (e.g. fieldwork site), which organisations will collaborate (if applicable), who will do what (in case of a group project), etc.

#### Supervision

The names of the supervisor(s) are mentioned here.

#### Preliminary identification of journal and draft lay out of paper

The proposal ends with a preliminary identification of the journal whose aims and scope fit your thesis. You will write a draft structure of the paper.

#### References

Finally, a list of background literature and contacts used (organisations/persons) to develop the proposal is given.

### Guidelines for stakeholder involvement

Your thesis research is designed to contribute to a better understanding of the functioning and processes of farming systems in a variety of contexts. Skills to relate your research to stakeholders are increasingly important for your future career as well. Therefore, in your thesis you are asked have some stakeholder involvement in your research.

The aim is that you learn how to identify and communicate efficiently the relevance of your research to representative sectors of society. The thesis will be oriented towards exploring options to address a problem or challenge in society. This can be a very concrete problem, but also more conceptual. Still, your research should reflect and appeal the interest of people outside the research environment.

Stakeholder involvement can be implemented by different means. An example is to discuss your research with a farmer, someone from agri-business, or government officials. Other stakeholders are also possible.

In the thesis proposal you indicate a relevant stakeholder group and how you intend to involve a representative from this group. In the colloquium you should communicate how you achieved this contact. . There is no fixed format for stakeholder involvement, but you can think of a short video clip of the discussion with the stakeholder, write a short report of your interaction and present a summary at the colloquium. You can additionally ask a stakeholder to be present at the colloquium.

### Guidelines for writing a thesis PAPER

Writing your thesis as a scientific paper requires a different approach from writing a report. The paper is shorter, which means you have to be aware about the main messages of your research and be able to explicitly write your analysis down. The text and other documents produced will be useful to underpin the main messages.

The reason to write the thesis as a scientific paper is to train students to write concisely. This skill is relevant for scientific work, but also for other professions. Additionally, the possibility of publishing original data and analysis to international peer-reviewed journals is an incentive and a great opportunity to contribute to science, early during your career.

Together with your supervisor, you have to think about the kind of journal in which the thesis work fits. The thesis is written in the format of a journal paper. Peer reviewed journals each have their own format rules, published as ‘Authors instructions’ on the website of each journal. Make sure to check those instructions before proceeding, be aware that editors can be very precise on the format.

If it is a good paper (discussed with your supervisor), you can decide to submit it to the journal. A larger public than when you write a report will read the work.

Steps:

* Think about your main findings: what is the main message? What are the ‘take-home’ messages?
* Select a journal:
* How does the main message match with scope of a journal? A good start is the journals frequently mentioned in the references you used in the proposal writing phase and your supervisor can help you with this.
* look for the ‘guide for authors’ or ‘authors instructions’ to see what the rules for length and format are
* Think about a limited number of figures & tables representing the results that underpin the conclusions and main messages; compare with the guide for authors
* Write the paper according to the guide for authors... and use the feedback of your Thesis Ring
* The full data results are presented as appendices.

### Guidelines for preparing an oral presentation

The oral presentation (colloquium) will be based on a PowerPoint presentation and should be 25 minutes maximum.

Please bear in mind that the colloquium should focus on the main messages of the research. Build your presentation from the conclusions and let the introduction, methods, results support the conclusions, so that the audience will remember your main message. A pitfall is to present the methods in too much detail and show all results. Having said that, the presentation should at least include the following subjects:

#### The title of your thesis

One slide showing the title, your name and any other information you wish to add.

#### Outline of the presentation

One slide in which you tell the audience what they can expect in the coming minutes.

#### Introduction

One or two slides giving some background on the subject of your thesis.

#### Aim of the study / research questions/ hypothesis

One slide presenting the questions that will be answered later and corresponding hypothesis.

#### Method

A few slides giving details on the method you used, grouped based on specific research components.

#### Results

Several slides presenting your results per research component.

#### Conclusions

One or two slides answering your research questions and drawing conclusions.

**Stakeholder involvement**

Show the responses of the stakeholder(s) to the results and implications of your research. This can be done by e.g. a short movie, or by the presence of the stakeholder at the colloquium.

**Acknowledgements**

One slide with a list of names and functions of people who helped you with your research, and if funding was supplied by an outside agency, mention the source of funding.

It is important to prepare your slides carefully. Some general recommendations with respect to slides include

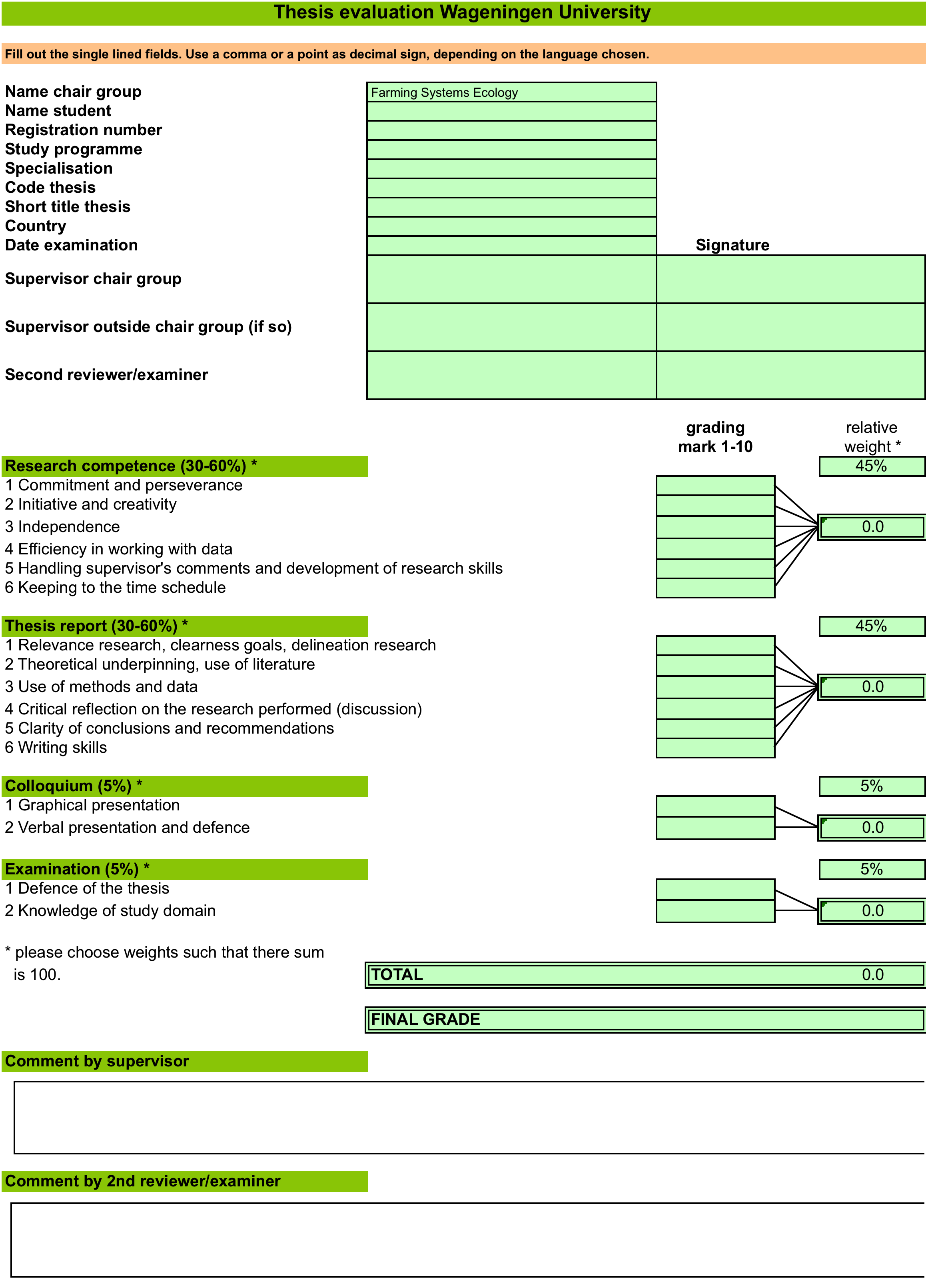
* Choose one single font type;
* Use a large font size (average 32-36 points for headings and 20-28 points for text);
* Use concise language and bullets when applicable;
* Do not use too many lines (maximum 8-10 per slide);
* Maintain a good balance between text, pictures, tables and figures;
* Make sure your slides only contain relevant information that you will actually present;
* Graphs usually are easier to read by the audience than tables;
* When presenting tables keep the number of rows and columns down to about 3-5 and use a large text font (>18);
* Make sure that labelling of axis and legends of figures is large enough so they can be read on a relatively small screen!

It is important to practice your presentation several times before you actually give it. When presenting, please take into account the following advices:

* Project your voice and articulate clearly;
* Do not stare at the screen too long but face the audience instead;
* Stand up straight;
* Do not put your hands in your pockets or touch your face with your hands;
* Talk slowly, give the audience time to think;
* When presenting graphs and tables, take your time to tell the audience what the graph/table presents before you start to talk about their content (e.g. when presenting graphs, first explain the x and y axis, before you start to talk about the results);
* When presenting tables, be aware that the audience will not have time and energy to remember all the numbers that are in there. Decide in advance which numbers you think are important in the table, and focus your discussion on them;
* Use a pointer if you present tables and graphs to make sure that the audience knows what you are referring to when you are talking.

### Thesis evaluation sheet

Your performance during the thesis project will be graded using the sheet below.



**REMARKS**