MSc Thesis Course Guide Wageningen University

- Part A: information about MSc theses at WU
- Part B: chair group specific regulations

Version: 7.4 (2026-01-09)

Changes in 6.0
- Updated to reflect Osiris implementation
- Added section about delays
- Added section about generative AI
- Updated/added links to the information pages for students
- Added a table summarizing the different roles (comparable tables are available for the internship)
- Added a section about well-being

Changes in 6.1
- Minor textual corrections (changed 'internship' into 'thesis' in a few places)

Changes in 6.2
- Brought in accordance with EER 2023/2024 (inclusion of WUR staff as potential assessor + examiner is one of the assessors)

Changes in 7.0 (2024-08-28)
- Made information on data-management more explicit (thanks to input from Irene Verhagen)
- Some minor editorial changes + updating of some links that change each academic year

Changes in 7.1 (2024-08-28)
- Added clarification to appendix III regarding the copyrights in relation to code, software and data (footnote 8).

Changes in 7.2 (2025-06-23)
- tip.wur.nl replaced by student career services as a database to find theses
- major revisions of the paragraph on the use of AI.
- Updated a number of hyperlinks.

Changes in 7.3 (2026-01-08)
- Exported PDF such that URL's are clickable
- Checked and -where possible- replaced URL's that linked to information on the old WUR website.

Changes in 7.4 (2026-01-09)
- Added link to support article on travel policy
- Converted links to support.wur.nl articles into permalinks.

Please always refer to the latest version, available from
- Staff: ESA portal (under '20 Course Guides')
- Students: support.wur.nl (Student -> Student planning & courses -> MSc Thesis, Internship and Research Practice)

The Programme Director responsible for MSc theses (Marjolijn Coppens, ad interim) encourages feedback/suggestions for adjustments.

The Student Charter shall prevail in any instances of inconsistency with this document.

Additional information specific to programmes or chair groups is provided online (via Brightspace and/or webpages).

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Part A: Information about MSc theses at WU

1 General information

This course guide describes the procedures for the MSc thesis supervision and writing process for all chair groups of Wageningen University. This course guide applies to both compulsory and extra theses. It is meant for staff and students. It includes information about the goal of the thesis, the necessary procedures before starting and during the thesis, as well as the assessment procedure.

A separate course guide applies to the *Research Practice*. This is a thesis-like project with additional learning outcomes and related assessment criteria that – depending on the programme and individual arrangements made with the Examining Board – may be done instead of an internship.

1.1 Course profile

The MSc thesis enables the student to put their acquired knowledge and skills into practice by individually and independently conducting a research project within the scope of their programme.

Language: English
Credits: 30 - 39 EC (compulsory theses) or 24 - 33 EC (extra theses)[1]
Period: The start date of your thesis is determined in consultation with your thesis supervisor

Most study programmes require a minimum of 36 credits for the compulsory thesis; see the Study Handbook for more information. As a guideline, a full-time thesis of 36 credits (EC) equals 24 weeks of 42 hours/week or 26 weeks of 40 hours/ week). Only in consultation with the thesis coordinator (of the chair group) and your study adviser, can you extend the length of your (compulsory) thesis to a maximum of 39 credits.

Specific requirements (e.g. mandatory knowledge) for each MSc thesis can be found in the online Study Handbook. Please check with your study adviser for any programme specific requirements. Finally, you should be officially registered as a Wageningen University MSc student.

1.2 Learning outcomes

After the successful completion of your MSc thesis, you are expected to be able to *independently* carry out the following aspects of a research project:

1. Develop a research plan, including: a description of the research topic in relation to the wider scientific context; an identification of the knowledge gap; formulation of research questions and/or a hypothesis, aims and objectives; an explanation of how you intend to conduct the research (e.g. in terms of a design for the project, data-collection and -analysis methods, research tools).
2. Collect, select and process data, using the design for the project, methods and tools described in the research plan.
3. Analyse and synthesise the data in order to answer the research questions and/or test the

[1] You may choose to include an extra thesis as part of the electives in your study programme. The extra thesis has a minimum size of 24 EC: 16 weeks of 42 hours/week or 17 weeks of 40 hours/week. This extra thesis *cannot* replace an internship of research practice.

hypothesis.

4. Formulate answers to the research questions that are supported by the research outcomes; pay attention to potential limitations; critically discuss the outcomes in relation to the wider scientific and societal context.
5. Report on the research, both in writing and in oral presentation.
6. Work in compliance with academic codes of conduct and with proper management of time and resources.
7. Make use of input and feedback for executing the research project and provide feedback to others.

2 Preparation of your thesis

The supervision of your thesis is the responsibility of a Wageningen University chair group. Your study programme determines which chair groups are entitled to supervise your thesis project. Consult the description of your MSc programme in the Study Handbook and contact your study adviser to find out more about the chair group(s) allowed to supervise your thesis. If you find a thesis topic that does not meet these criteria, but which, in your opinion, is extremely relevant for your programme, you should contact your study adviser and ask for approval from the Examining Board.

2.1 People involved in your thesis

Actors involved in the learning process:

- The *thesis coordinator* is the contact person within the chair group. You can find the thesis coordinator of each chair group in the online Study Handbook of Wageningen University (as the coordinator of the thesis course code). The student enters in Osiris who is their main and administrative supervisor.
- The *main and administrative supervisor* is responsible for guiding the thesis project. They are an employee of your chair group. They are often an academic WUR staff member[2], but they can also be an experienced PhD candidate or a post-doc. PhD candidates and post-docs will preferably have taken the courses 'Start to Supervise BSc & MSc thesis students' and 'Supervising BSc & MSc students' from the Education Support Centre, potentially as part of their Training and Supervision Plan. A technician may also be involved.
- A *second supervisor*. If the daily supervisor is a PhD candidate, the second supervisor of the MSc student is usually the supervisor of that PhD candidate. There can also be content-related reasons to appoint a second or third supervisor or advisor.
- *Advisor*(s): other people not involved in supervision.

Actors in the assessment (the main and administrative supervisor assigns the assessors and examiner in Osiris):

- *Assessor 1* is responsible for evaluating the thesis project. This is an academic WU staff member[2]. They are preferably involved in supervision as they assess the student's performance. Hence, assessor 1 will often be the daily supervisor (provided that they match the definition of academic WU staff member).
- *Assessor 2* is responsible for an independent assessment of parts of the thesis project (at least the report). Assessor 2 is often the examiner, but not necessarily. This role has the same requirements as Assessor 1.
- *Examiner* (one of the two assessors[3]), who is responsible for evaluating the thesis project and coordinating grades throughout the chair group. They are appointed by the Examining Board, and they are listed as examiner in the Study Handbook under the MSc thesis course code.

[2] From the EER for the academic year 2023/2024 onwards, the following holds for both supervisors and assessors: 'During the internship, thesis and research practice, the Master's student is supervised by a WUR staff member affiliated with a chair group with a PhD degree or an equivalent research profile, or someone who performs this role under the responsibility of this staff member. The equivalence of the research profile is at the discretion of the examiner of the course under consideration.'.

[3] In previous versions of the course guide, it was stated that the examiner is 'often Assessor 2'. However, the EER states that the 'the examiner is one of the assessors' (article 46b in EER 2023/2024).

Requirements: a PhD degree or other demonstrable experience with the MSc thesis subject[4]. Only examiners listed for the courses in the course catalogue can decide and finalize the grade in Osiris.

2.2 How to find a thesis (topic)

There are differences between chair groups with regard to how theses should be found and arranged. In general, you can take the following steps:

- Attend a thesis information meeting, organised by your MSc programme or the chair group. In a few programmes, you need to participate in a thesis allocation procedure.
- Contact your study adviser to discuss the options for thesis subjects.
- Visit the Wageningen University websites of chair groups that are entitled to supervise an MSc thesis within (the specialisation of) your study programme.
- Find thesis subjects via Student Career Services.
- Make an appointment with the thesis coordinator of the chair group and discuss which thesis subject(s) you are interested in. Names of thesis coordinators can be found in the online Study Handbook.

The thesis subject should preferably match the overall research field of your programme. You must discuss both the topic and timing with your study adviser and the thesis coordinator of the chair group in a timely manner, especially if your thesis includes an experiment or field work abroad: this can sometimes take several months to arrange.

2.3 Learning Agreement

Before the thesis starts, you and your supervisor have to discuss and agree on the content and overall planning of your thesis. After this, you can initiate the Osiris administrative process. You can find the instruction on how to initiate the process at https://wur.eu/tir-start.

Subsequently, you and your supervisor have to make more detailed agreements related to your learning process during the thesis. These agreements are written down in the Learning Agreement. To have an overview of the various topics covered in the learning agreement you can consult the checklist learning agreement. You as a student fill in the learning agreement in Osiris. An overview of the entire process in Osiris is available in the form of a presentation with screenshots.

One of the aspects addressed in the learning agreement on OSIRIS is intellectual property rights. The text of the statement you have to sign can be found in Appendix III: Intellectual property statement for student. Related to that, discuss potential confidentiality issues with your supervisor. In principle, your MSc thesis is not considered confidential, however, if part of your results is used in a larger research project, contract research or research that is subject to patenting, then confidentiality agreements may apply. You should be informed by the thesis supervisor prior to starting if your thesis is part of a contract research programme or a patent procedure.

Discuss transfer of results and data with your supervisor as well. Do not only specify *that* the data are transferred but also *when* (during and/or after the project, before or after the final assessment) and *how*. To simplify the work of the supervisor, it is good practice that the student is informed about the

[4] Rules and Regulations of the Examining Boards, Article 8

relevant data management protocol (of the chair group and/or the research project), so that the student can prepare the data in an appropriate way (check with the data steward of your chair group). If the chair group uses a specific format for a data management plan, this is included in the chair group specific regulations in this course guide (Part B).

2.4 Information on WU travel policy, insurance and grants

The MSc-thesis is a research project under the responsibility of a WU chair group. However, it is possible that part of the work (e.g. data collection) will take place outside WU, and possible outside the Netherlands.

2.4.1 Travel policy for students

Are you planning to travel abroad or, as an international student, are you temporarily travelling back home in the context of your studies at Wageningen University & Research? Find out in good time whether this trip concerns a **risky area** (source: Dutch Ministry of Foreign Affairs). If so, you will have to receive permission. If this is relevant to you, you should submit a **travel request** together with your thesis coordinator.

You will need to complete a form that also functions as a checklist to ensure that you are well-prepared for your trip. This checklist includes precautions to be taken – both mandatory and otherwise – such as travelling together with a student who is already familiar with the area, (additional WU) insurance, safety training, registration in Kompas (Foreign Affairs), and recommended vaccinations. You can find the form on the website mentioned below.
For actual information on travel policy WU, check the website: (information has not yet been transferred to support.wur.nl, as of 2026-01-08).

2.4.2 Travel Insurance

Students participating in internships and/or conducting thesis work abroad as part of their study programme at the University are covered by the collective travel insurance of Wageningen University & Research. You do not need to pay to make use of this collective travel insurance. More information you can find on support.wur.nl.

2.4.3 Grants

There are some possibilities to apply for grants if your thesis, internship or research practice takes place in a foreign country, but most times the chance to receive a grant is small. For information about grants, see the following websites:

- Erasmus+ grants for internship & thesis
- Erasmus+ grants and study exchange
- https://www.wilweg.nl/financien/beursopener (unfortunately in Dutch only)
- (+ information that has not yet been transferred to support.wur.nl, as of 2026-01-08)

3 Points of attention during the thesis

3.1 Well-being

Your MSc-thesis may be challenging for you in many ways. You may need to stretch yourself to master the contents, your academic or general skills may put to the test. Furthermore, the required level of independence may be a new experience for you, and you collaboration skills may be tested in the intensive collaboration within a small team (your supervisor and possible some other people involved in your research).

Given these challenges, it is of utmost importance to monitor your well-being. Make it a topic that you discuss with your supervisor with some regularity, but also with your fellow thesis students. If you feel that you need to discuss things that go beyond what you would like to discuss with your supervisor, do not hesitate to contact your study advisor.

Useful links about student guidance and social safety can be found in Appendix IV: Information on student guidance and social safety.

3.2 Supervision

Each chair group organises the appointment of supervisors differently. Contact the thesis coordinator of the respective chair group to check their specific procedure.

The first (main) supervisor is always a staff member of the responsible chair group, but sometimes, a second or even a third chair group may be involved in the supervision of an MSc thesis. In general, students are entitled to have regular meetings (e.g. every two or three weeks) with the primary supervisor. The actual frequency of meetings may vary depending on the nature of the thesis project. In order to make the meetings effective, the student needs to prepare for them, for example by preparing documents for the meeting (e.g. a chapter of the thesis or a list of discussion points) and by sending the document to the supervisor well in advance of the meeting. The supervisor, in turn, is expected to read the documents sent to them and to discuss them with the student during the meeting. As the thesis project is a learning experience, students are encouraged to act independently when resolving problems or in difficult situations. However, in cases of urgency, the supervisor should be available for feedback and support in between the regular meetings. Agreements on how to deal in such situations should be included in the Learning Agreement.

3.3 Ethical behaviour and plagiarism

Attention to scientific integrity is an important aspect of your academic education, including the various aspects that are relevant for an academic researcher. You always have to be aware of the fact that you could get into an ethical dilemma and you should be prepared if you run into such a situation. We refer to the Netherlands Code of Conduct for Research Integrity (see Appendix I: Netherlands Code of Conduct for Research Integrity).

The main principles described in this code concern:

- **Honesty** means, among other things, reporting the research process accurately, taking alternative opinions and counterarguments seriously, being open about margins of uncertainty, refraining from making unfounded claims, refraining from fabricating or falsifying data or sources and refraining from presenting results more favourably or unfavourably than they actually are.
- **Scrupulousness** means, among other things, using methods that are scientific or scholarly and exercising the best possible care in designing, undertaking, reporting and disseminating research.

- **Transparency** means, among other things, ensuring that it is clear to others what data the research was based on, how the data were obtained, what and how results were achieved and what role was played by external stakeholders. If parts of the research or data are not to be made public, the researcher must provide a good account of why this is not possible. It must be evident, at least to peers, how the research was conducted and what the various phases of the research process were. At the very least, this means that the line of reasoning must be clear and that the steps in the research process must be verifiable.
- **Independence** means, among other things, not allowing the choice of method, the assessment of data, the weight attributed to alternative statements or the assessment of others' research or research proposals to be guided by non-scientific or non-scholarly considerations (e.g., those of a commercial or political nature). In this sense, independence also includes impartiality. Independence is required at all times in the design, conduct and reporting of research, although not necessarily in the choice of research topic and research question.
- **Responsibility** means, among other things, acknowledging the fact that a researcher does not operate in isolation and hence taking into consideration – within reasonable limits – the legitimate interests of human and animal test subjects, as well as those of commissioning parties, funding bodies and the environment. Responsibility also means conducting research that is scientifically and/or societally relevant.

Appendix I: Netherlands Code of Conduct for Research Integrity provides a summary.

You are expected to be familiar with proper citing and referencing techniques before you start writing the thesis and are advised to consult relevant information available on the WUR-website (e.g. 'Citing and referencing'). Improper citing and referencing may be considered as plagiarism, which is a form of fraud. Staff are expected to screen all writings carefully for similarity with known sources; the University has made software available for this purpose. In case of suspicion of plagiarism, either of text, figures, models or data, the Examining Board will be informed. In the Rules and regulations of the Examining Board, procedures and sanctions regarding fraud are described.

3.4 Use of generative artificial intelligence (e.g. Language models, image generators, transcription models, (semantic) literature search engines)

3.4.1. Rules regarding AI usage

Working in an academic environment requires using available tools responsibly, and Generative AI ('GenAI') is no exception. To ensure ethical and effective use, the following rules have been established on how to incorporate GenAI tools into your academic work.

What is Generative AI?

Generative artificial intelligence is a technology that generates content (textual, visual, audio) based on previously learned patterns by a model, sometimes facilitated through the use of natural language conversational interfaces.

In principle, the use of AI is allowed as/for:

- Sparring partner / Brainstorming
- Feedback tool for textual improvement (e.g. spelling/grammar checking)
- Data processing script development (coding)

- Literature searching
- Transcription

Under the conditions that:

- Acquiring skills relevant to the thesis, such as active writing, designing, and reflection skills, are an important part of your learning objective. The use of AI may only be in support of the development of these skills and not a replacement of these skills.
- You will always be held accountable for the correctness, completeness, and coherence of all your texts. AI models can misinterpret information, introduce or amplify biases, or introduce false or unsubstantiated information. You should always critically evaluate the output. Don't let an AI perform the work for you, but ask it for suggestions and weigh them critically.
- When you use AI for your work, acknowledge and/or document the usage of AI on your products. See paragraph 3.4.2. for more information.
- Never put (personal) data of others, information that infringes on intellectual property rights or sensitive or confidential (research) data into external/commercial AI tools.
- Be aware of institutional policies regarding data usage. Some databases, chair groups, internship companies, etc., might not allow you to share their data with AI tools, as this may violate agreements with financiers of projects or may even violate intellectual property rights (IPs). For more information, see: Personal data protection regulations WUR and Data policy at WUR.
- Always respect copyright laws and the intellectual property rights of others. Do not upload materials that are copyright-protected in an AI tool, this can have severe consequences.
- When applying AI for literature searching you use it as a supplementation or extension of existing conventional search methods (e.g. keyword-based searching via the WUR Library or Google Scholar), and not as a replacement of these methods. Use specialised programs for literature searches and creating a list of references, as multipurpose generative AI models may generate (i.e. make up) references.
- Using AI to write code / scripts may only be done if you can explain and verify the accuracy and validity of the code.

3.4.2. Documenting and acknowledging AI usage

In case AI is applied as an integral part of your research methodology (e.g. as a transcription tool or for data analysis), its usage needs to be documented in the Materials and Methods section. This should be done in line with research methodology standards, aimed at reproducibility and verifiability. Prompts or instructions applied in this context should be made available in the appendix.

If AI was used only in the writing of the report, this should be acknowledged in a separate section before the References, using the standard format presented below:

> "During the preparation of this work the author used [TOOL, VERSION IF APPLICABLE, METHOD OF ACCESS] in order to [GOAL OF APPLICATION]. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the report."

More examples for documentation are available via: https://wur-studentsupport.screenstepslive.com/m/118226/l/1878197-how-to-document-your-genai-use.

Extensive interactions with AI should be documented via documentation in the appendix or via your data repository (as PDF or text file). It is recommended to maintain a version history of your thesis documents to be able to show the progression of your work over time.

The documentation and acknowledgement of AI usage depends on its application. For each application the requirement may differ. Please consult the table below for information:

Application [5]	Usage in research methodology	Usage outside of research methodology
Spelling/grammar checking	Acknowledgement with prompt	Acknowledgement only
Coding / Script development	Acknowledgement with prompt, incl. outputs and modifications for significant/major changes.	N/A
Transcription	Full documentation, incl. tool used.	N/A
Image/Video/Audio generation	Full documentation with prompt, tool used, modifications.	Full documentation with prompt, tool used, modifications.
Sparring partner / Brainstorming	Acknowledgement only	Acknowledgement only
Literature searching	Acknowledgement with embedding in conventional methodology.	Acknowledgement with embedding in conventional methodology.

[5] If your application method is not listed in this table, your examiner/supervisor may decide how to document/acknowledge the usage.

3.5 Progress evaluation

The progress of the thesis project should be evaluated according to the schedule in the learning agreement, ultimately before one third of the duration of the thesis project. The principle of two-way feedback applies. The progress evaluation is a moment of reflection to determine which aspects of thesis process are going well, which aspects the student needs to improve on and how supervision should facilitate this.

It is strongly advised to use the applicable criteria in the rubric (available here) to evaluate the student's performance. These cover all aspects of the thesis project at that point (i.e. performance, research proposal) and supervision. Your supervisor may ask you to assess your own level of performance. Additional aspects in the progress evaluation may be your participation in seminars and thesis rings, data management, record keeping, etc. Your supervisor may also ask you to orally present your research plan to colleagues and peer students, which also serves to help you practice presentations. Generally, the conclusion of the progress evaluation will be that you continue with your thesis project, potentially with some adaptations in planning, content, supervision and/or improvements in your knowledge, skills or attitudes.

If your supervisor considers that your progress is such that successful completion of the project is unlikely, you should be given the opportunity to improve. Your supervisor should clearly indicate what improvements are required and within which timeframe. If the lack of progress is the result of a mismatch between your supervisor and your, a switch of supervisor should be considered.

If, after the set timeframe for approvement(s), your supervisor considers your progress as being still not enough to successfully complete your thesis, the supervisor should involve an examiner (four-eyes principle). Together, they could consider termination of the project with a 'no-go' decision. A no-go decision must be taken by the examiner. It must be well explained to you, and the explanation should be recorded in Osiris. The supervisor should ensure that this 'no-go' decisions is taken before half way the nominal duration of the thesis project, to prevent further delay for the student. Your supervisor must inform the study advisor to create a safety net for the student outside the chair group and facilitate a 'warm handover'. Note that the student may disagree with the no-go decision and submit an appeal to Examination Appeals Board (CBE)[6].

Depending on the reason for the no-go decision, there may still be a role for the chair group in the follow-up. In consultation with the study advisor, the supervisor and the examiner, the student may, for example, be recommended to take additional education first (e.g. courses on content or skills, like academic writing). The student can also be assigned a topic that fits their knowledge and skills better. These adjustments require them to restart their thesis.

3.6 Meetings (lab meetings, colloquia, seminars)

During your thesis period, you may participate in work discussions and other meetings of the chair group. Many chair groups have weekly work discussions in which research progress of all group members is discussed. Depending on the chair group, you may be asked to join the discussion group that is related to your research topic. Ask your supervisor when your chair group holds discussion sessions.

[6] Rules and Regulations of the Examining Boards, Article 28.2

Both students and staff present their results to the other members of the chair group during colloquia. In general, students have to attend these colloquia.
Some chair groups organise literature discussions on papers that are relevant to their field, or organise seminars, during which guest researchers present their research or designs.

4 Thesis activities

This section describes the different stages of the thesis project in general terms. See Part B of the course guide for the specific requirements of your chair group.

4.1 Research proposal/planning

At the start of the thesis, you will discuss the topic with your supervisor and read literature related to the project. After this initial orientation, you write a research proposal, which has to be discussed in depth with your supervisor(s). The research proposal should include a problem statement, research questions or a hypothesis that is supported by up-to-date literature related to the topic, an explicit and specific plan regarding how the research is to be conducted (e.g. study design, data collection and analysis methods) and a time schedule.

If drafted correctly, sections of the proposal can be used to write the final thesis report (e.g. the Introduction and Methodology sections). However, you cannot start conducting the research project before the research proposal has been approved by your supervisor(s).

When your proposal is completed, you may be asked to present your research proposal to other students and staff members in order to acquire feedback and suggestions for improvement. Discuss format and content for your presentation with your supervisor. The presentation should be given in English in order to allow international students and staff members to participate in the discussion.

In the planning part of your proposal, also pay attention to data management: e.g. safe storage / sharing / transfer of data (during and after the thesis), (personal) sensitive data, ownership (especially when data is provided by others), organising folders and files, file naming, etc. (see also the relevant part of the Learning Agreement, section 2.3).

4.2 Carrying out the research project

You should document your research activities, findings and sources carefully, including seemingly small details. During data collection, analysis and synthesis, you should follow the agreements made in the data management plan. In experimental research, a lab or field journal has to be kept.
You are recommended to keep in close contact with your supervisor throughout the project. Should unforeseeable circumstances occur, you will have to adapt your research proposal; any changes in planning must be discussed with and approved by your supervisor.

4.3 Feedback

Dealing with feedback and providing feedback to others is one of the learning outcomes of the thesis. While carrying out your project and attending meetings, there will be ample opportunities for you to ask for and receive feedback from staff and students, and to give feedback to others as well. The chair group will request that you participate in thesis rings or other peer-learning sessions. Using this input will help you to further develop your knowledge, skills and attitude and make the best of your project.

4.4 Thesis report

Your research should result in a comprehensive, consistent and concise thesis report. It is important to realise that the thesis is not a chronological account of the project or a summary of the lab-journal. Furthermore, as good scientific writing dictates, the results should be properly organised and

data should be correctly processed, analysed and presented. In principle, an MSc thesis report should contain all the elements of a full scientific paper in your discipline (see Part B for specific criteria for your chair group).

In some cases, it may be possible to write your thesis in the format of a scientific article, which is usually much shorter than a regular thesis report. Discuss this with your supervisor. Publication of the results of your research in proceedings or a scientific article is also possible. The supervisor of the chair group will generally be co-author of any publications originating from thesis work. In case of publication of the work of an MSc-thesis, proper publication of the data in a open repository may be required.

You usually get one possibility to discuss a draft report with your WU supervisor before handing in the final report. In many chair groups it is common practice to discuss chapters separately in the final stage of the project.

4.5 Oral presentation (colloquium)

Once your research has been completed, you are required to present your thesis and your major findings to other students and staff members of the chair group. Chair groups usually have a fixed schedule for these presentations. Appointments for a date, and the publication of the announcement should be made well in advance. You may discuss the structure and content of your presentation with your supervisor in advance so they can offer feedback and advice. The presentation must be in English so international staff and students can participate in the discussion.

4.6 Oral defence

The final oral defence is a discussion with your supervisor, the examiner and, in some cases, a supervisor from outside the chair group not involved in the grading of the thesis. The discussion focuses on the content of the thesis, in which your knowledge, understanding, insights, as well as creativity and scientific attitude are evaluated. You are expected to be able to place your results and conclusions in the wider context of the field of science. The oral defence will be scheduled ten working days after you have submitted your reports to the supervisor and examiner. You must make an appointment for the oral defence.

5 Completion of your thesis

5.1 Assessment of the thesis

For the Wageningen University assessment, supervisors/examiners use the Wageningen University Thesis Assessment Form (see Appendix II: Assessment form, rubric and learning agreement). The average grade for each category (performance, thesis project report, oral presentation (colloquium), oral defence) should be at least 5.5 for a pass.

The assessment strategy below shows the relation between the learning outcomes and the different parts of the assessment.

		Assessment categories			
Weights	Description	Performance	Research Report	Oral presentation	Oral defence
	% of grade	40%	50%	5%	5%
Learning outcomes	1 Develop a research plan, including: a description of the research topic in relation to the wider scientific context; an identification of the knowledge gap; formulation of research questions and/or a hypothesis, aims and objectives; an explanation of how you intend to conduct the research (e.g. in terms of a design for the project, data-collection and -analysis methods, research tools).	x	x		x
	2 Collect, select and process data, using the design for the project, methods and tools described in the research plan.	x	x		x
	3 Analyse and synthesise the data in order to answer the research questions and/or test the hypothesis.	x	x	x	x
	4 Formulate answers to the research questions that are supported by the research outcomes; pay attention to potential limitations; critically discuss the outcomes in relation to the wider scientific and societal context.	x	x	x	x
	5 Report on the research, both in writing and in oral presentation.	x	x	x	
	6 Work in compliance with academic codes of conduct, and with proper management of time and resources.	x	x		
	7 Make use of input and feedback for executing the research project and provide feedback to others.	x			
Assessors	Assessor 1	x	x	x	
	Assessor 2	optional	x	optional	
	WU Examiner (grade)*	x	x	x	x

* The examiner will determine the final grading after a discussion with the supervisor/second assessor.

A rubric (DOI) or at support.wur.nl is used for feedback and grading (see also Appendix II: Assessment form, rubric and learning agreement). Both assessors independently assess one or more aspects of your thesis work. Subsequently, the examiner, usually in consultation with both assessors will determine the final grade for the different criteria. Apart from that, you will generally have a final meeting in which your supervisor and/or examiner will provide you feedback on the overall project (beyond just the assessment). In some groups, the oral defence and the final meeting may be combined in a single meeting.

The assessment, the final grade, as well as an underpinning of the grade will be registerered in OSIRIS. After the examination, you will receive the reasoning behind your thesis grade, including specific feedback on all assessment categories.

5.2 Delay and possibility to resit

The start and end date of your thesis are recorded in the Learning Agreement. You should complete the thesis project within the time allocated to this programme component (i.e. 6 months for a 36 EC thesis or 6.5 months for a 39 EC thesis). Ensure that the research proposal is realistic and contains a contingency plan ('plan B').

Below we discuss the three acceptable reasons for a longer runtime of a thesis project. There are a three acceptable reasons for a longer runtime of an thesis project: planned longer duration of your thesis project, force majeure or an insufficient result for your thesis. Other causes for delay are *not* acceptable.

5.2.1 Planned longer duration of the thesis project

If the student plans to undertake additional activities next to the thesis, the total runtime of a thesis project can be longer than the nominally allocated time. Examples are you have a job, have planned holidays, or will do a student-assistantship. You can take this into account when registering the expected date of completion (to be filled out in the learning agreement). This situation is *not* considered as delay.

5.2.2 Delay due to force majeure

If the planned period needs to be extended due to *force majeure*, you should submit a request to the student dean. The dean is to decide whether this is a case of *force majeure*, and advises the Examining Board. The Examining Board can then decide to extend the term for the thesis. In that case, the expected date of completion will be moved forward, in accordance with the extent of the delay.

5.2.3 Delay due to an insufficient result

Around the expected date of completion of the thesis, the thesis is assessed, and the grade is registered in Osiris. In this way all students are graded after the same amount of time, which makes the grading fair for all students.

If the assessment is insufficient, but your supervisor and you expect that you will be able to finish the project successfully within two extra months, the examiner registers the grade in Osiris as INCOMPL. Next, you have two months to improve the work to a sufficient level. In the case of *force majeure,* these two months can be extended under the same conditions as above (via student dean and Examining Board).

After two months, the work of the student's work is assessed again (again with two independent assessors, and the examiner determining the final grade). If the result is sufficient, the grade is registered in Osiris. If the result is insufficient, INSUFF will be recorded in Osiris.

In case of an insufficient final grade, you can start a new MSc-thesis, not necessarily with the same supervisor or in the same chair group. This is officially considered a resit but means that the entire thesis needs to be redone.

5.3 Course evaluation for your thesis

Following the assessment, Wageningen University will send you a link to an online evaluation questionnaire. Please complete this, even if your thesis project is finished. The results of the questionnaires help us to improve the quality of the thesis supervision and organisation, and to identify potential (or actual) problems. The evaluation is anonymous.

Part B: Chair group specific regulations

Additional regulations and guidelines may be applicable for specific theses and can be provided by the chair group. This could concern matters like:

- Safety regulations (building, laboratory, equipment, materials, data, etc.).
- Guidelines for recording your research (data management plans, keeping lab journals or other means).
- Guidelines for handling literature references.
- Guidelines for writing a thesis report.
- Guidelines for giving an oral presentation (for colloquia, seminars, etc.).

In addition the chair group could provide additional details about how the thesis process is arranged at that particular chair group.

This could encompass:

- Safety regulations (access to building, laboratory, equipment, materials, data, etc.)
- Allocation of students to topics/supervisors
- A timeline: when oral presentations should be planned, the progress evaluation, how long before the assessment should a report be submitted, etc.
- Availability of supervisors
- Guidelines for:
    - recording research (data management plans, lab journals, etc.)
    - handling literature references
    - writing a thesis report, scope/length and any other requirements on the report as applicable within your discipline
    - confidentiality
    - giving an oral presentation
- Additional requirements for completion of the thesis, for instance:
    - submission of data files
    - participation in thesis rings/seminars, etc.

6 Appendices

6.1 Appendix I: Netherlands Code of Conduct for Research Integrity

Students and staff at Wageningen University Research are bound to the Netherlands Code of Conduct for Research Integrity (it is part of the Student Charter).

6.1.1 Principles

The main principles described in this code concern: Honesty, Scrupulousness, Transparency, Independence, Responsibility.

Chapter 2 of the Code of Conduct summarizes the principles as follows:

Honesty means, among other things, reporting the research process accurately, taking alternative opinions and counterarguments seriously, being open about margins of uncertainty, refraining from making unfounded claims, refraining from fabricating or falsifying data or sources and refraining from presenting results more favourably or unfavourably than they actually are.

Scrupulousness means, among other things, using methods that are scientific or scholarly and exercising the best possible care in designing, undertaking, reporting and disseminating research.

Transparency means, among other things, ensuring that it is clear to others what data the research was based on, how the data were obtained, what and how results were achieved and what role was played by external stakeholders. If parts of the research or data are not to be made public, the researcher must provide a good account of why this is not possible. It must be evident, at least to peers, how the research was conducted and what the various phases of the research process were. At the very least, this means that the line of reasoning must be clear and that the steps in the research process must be verifiable.

Independence means, among other things, not allowing the choice of method, the assessment of data, the weight attributed to alternative statements or the assessment of others' research or research proposals to be guided by non-scientific or non-scholarly considerations (e.g., those of a commercial or political nature). In this sense, independence also includes impartiality. Independence is required at all times in the design, conduct and reporting of research, although not necessarily in the choice of research topic and research question.

Responsibility means, among other things, acknowledging the fact that a researcher does not operate in isolation and hence taking into consideration – within reasonable limits – the legitimate interests of human and animal test subjects, as well as those of commissioning parties, funding bodies and the environment. Responsibility also means conducting research that is scientifically and/or societally relevant.

6.1.2 Standards

Chapter 3 of the Code of Conduct provides standards for good scientific practice on the following phases of the research process: design, conduct, reporting, assessment and peer review and communication.

Design

- Consider the interests of science and scholarship and/or society when determining the subject and structure of your research.

- Conduct research that can be of scientific, scholarly and/or societal relevance.
- Do not make unsubstantiated claims about potential results.
- Take into account the latest scientific and scholarly insights.
- Make sure that your research design can answer the research question.
- Ensure that the methods you employ are well justified.
- If the research is conducted on commission and/or funded by third parties, always specify who the commissioning party and/or funding body is.
- Be open about the role of external stakeholders and possible conflicts of interest.
- In research with external partners, make clear written agreements about research integrity and related matters such as intellectual property rights.
- As necessary, describe how the collected research data are organized and classified so that they can be verified and reused.
- As far as possible, make research findings and research data public subsequent to completion of the research. If this is not possible, establish valid reasons for their non-disclosure
- In the event of an investigation into alleged research misconduct, make all relevant research and data available for verification subject to the confidentiality safeguards established by the board of the institution.
- In highly exceptional cases, there may be compelling reasons for components of the research, including data, not to be disclosed to an investigation into alleged research misconduct. Such cases must be recorded and the consent of the board of the institution must be obtained prior to using the components and/or data in question in the scientific or scholarly research. They must also be mentioned in any results published.
- Ensure that the required permissions are obtained and that, where necessary, an ethical review is conducted.
- Accept only research assignments that can be undertaken in accordance with the standards in this Code.
- Enter into joint research with a partner not affiliated with an institution which has adopted this or a comparable Code only if there is sufficient confidence that your own part of the research can be conducted in compliance with this Code and the joint research results meet generally accepted principles of integrity in research.

Conduct

- Conduct your research accurately and with precision.
- Employ research methods that are scientific and/or scholarly.
- Make sure that the choice of research methods, data analysis, assessment of results and consideration of possible explanations is not determined by non-scientific or non-scholarly (e.g. commercial or political) interests, arguments or preferences.
- Do not fabricate data or research results and do not report fabricated material as if it were fact.
- Do justice to all research results obtained.
- Do not remove or change results without explicit and proper justification. Do not add fabricated data during the data analysis.
- Ensure that sources are verifiable.
- Describe the data collected for and/or used in your research honestly, scrupulously and as transparently as possible.
- Manage the collected data carefully and store both the raw and processed versions for a period appropriate for the discipline and methodology at issue.
- Contribute, where appropriate, towards making data findable, accessible, interoperable and reusable in accordance with the FAIR principles.
- Take into consideration the interests of any humans and animals involved, including test subjects, as well as any risks to the researchers and the environment, while always observing the relevant statutory regulations and codes of conduct.

- Keep your own level of expertise up to date.
- Take on only those tasks that fall within your area of expertise.

Reporting
- Do justice to everyone who contributed to the research and to obtaining and/or processing the data.
- Ensure a fair allocation and ordering of authorship, in line with the standards applicable within the discipline(s) concerned.
- All authors must have made a genuine intellectual contribution to at least one of the following elements: the design of the research, the acquisition of data, its analysis or the interpretation of findings.
- All authors must have approved the final version of the research product.
- All authors are fully responsible for the content of the research product, unless otherwise stated.
- Present sources, data and arguments in a scrupulous way.
- Be transparent about the method and working procedure followed and record them where relevant in research protocols, logs, lab journals or reports. The line of reasoning must be clear and the steps in the research process must be verifiable. This usually means that the research must be described in sufficient detail for it to be possible to replicate the data collection and its analysis.
- Be explicit about any relevant unreported data that has been collected in accordance with the research design and could support conclusions different from those reported.
- Be clear about results and conclusions, as well as their scope.
- Be explicit about uncertainties and contraindications, and do not draw unsubstantiated conclusions. Be explicit about serious alternative insights that could be relevant to the interpretation of the data and the research results.
- When making use of other people's ideas, procedures, results and text, do justice to the research involved and cite the source accurately.
- Avoid unnecessary reuse of previously published texts of which you were the author or co-author. Be transparent about reuse by citing the original publication. Such self-citation is not necessary for reuse on a small scale or of introductory passages and descriptions of the method applied.
- Always provide references when reusing research material that can be used for meta-analysis or the analysis of pooled data.
- Avoid unnecessary references and do not make the bibliography unnecessarily long.
- Be open and complete about the role of external stakeholders, commissioning parties, funding bodies, possible conflicts of interest and relevant ancillary activities.
- As far as possible, make research findings and research data public subsequent to completion of the research. If this is not possible, establish the valid reasons for this.

Assessment and peer review
- Be honest and scrupulous as an assessor or peer reviewer, and explain your assessment.
- Do not use information acquired in the context of an assessment without explicit consent.
- Do not use the system of peer review to generate additional citations for no apparent reason, with the aim of increasing your own or other people's citation scores ('citation pushing').
- Refrain from making an assessment if any doubts could arise regarding your independence (for example, because of possible commercial or financial interests).
- Refrain from making an assessment outside your area of expertise, or do so only in general terms.
- Be generous in cooperating with internal and external reviews of your own research.
- Do not establish a journal that does not apply the required standards of quality to its

publications, and do not cooperate with any such journal.

Communication

- Be honest in public communication and clear about the limitations of the research and your own expertise. Only communicate to the general public about the research results if there is sufficient certainty about them.
- Be open and honest about your role in the public debate and about the nature and status of your participation in it.
- Be open and honest about potential conflicts of interest.

Standards that are applicable to all phases of research

- As a supervisor, principal investigator, research director or manager, provide for an open and inclusive culture in all phases of research.
- As a supervisor, principal investigator, research director or manager, refrain from any action which might encourage a researcher to disregard any of the standards in this chapter.
- Do not delay or hinder the work of other researchers in an inappropriate manner.
- Call attention to other researchers' non-compliance with the standards as well as inadequate institutional responses to non-compliance, if there is sufficient reason for doing so.
- In addressing research misconduct, make no accusation that you know or should have known to be incorrect.
- Do not make improper use of research funds.

6.2 Appendix II: Assessment form, rubric and learning agreement

The WU-thesis assessment form and rubric will be used to grade your thesis after completion. We encourage you to look at the assessment criteria at the start of your project. You can download the most recent version of the from this page on support.wur.nl or at this DOI.

The learning agreement is filled out in OSIRIS. To have an overview of the various topics covered in the learning agreement you can consult the checklist learning agreement. Information about the process in OSIRIS can be found in an interactive visual guide.

6.3 Appendix III: Intellectual property statement for student

In the learning agreement, one of the steps is that the student has to read and confirm the intellectual property statement below[7].

Introduction

It is important for you as a student to understand your rights and obligations concerning intellectual property and confidentiality. Please read this declaration and accept it by selecting 'yes' at the bottom of this page. If you have any further questions about intellectual property, consult info.eship@wur.nl.

[7] Note that the text of this statement differs from the text used in academic year 2022-2023 and before

Declaration

1. The student shall own the (rights to the) MSc Thesis / Research Practice[8]. This does not encompass the information and materials provided by Wageningen University (and others) to the student. The student hereby grants Wageningen University the right to use the MSc Thesis / Research Practice for education and internal research purposes and the right to publish the MSc Thesis / Research Practice in the WUR e-depot.
2. Wageningen University remains entitled to and the owner of the information and materials provided to the student for the MSc Thesis / Research Practice project. The student shall keep these information and materials confidential for a period of five (5) years, starting on the date that this declaration is accepted.
3. The student will perform the MSc Thesis / Research Practice in accordance with the Netherlands Code of Conduct for Research Integrity.
4. The student will process any personal data in connection with the MSc Thesis / Research Practice in accordance with the instructions and regulations given by Wageningen University. More information can be obtained from privacy.student@wur.nl.
5. The student and Wageningen University can agree on an alternative ownership agreement, for example in case of a specific research assignment or in case of an internship. In that case, the other agreement shall take precedence over this declaration.

The acceptance and execution of this declaration by selecting 'yes' in the box below, recorded in the Student Information System of Wageningen University, Osiris), shall be deemed to be an acceptance with the same validity, enforceability and admissibility as an original signature.

I, the student, have read the above declaration, I fully understood it, and I agree to it.

6.4 Appendix IV: Information on student guidance and social safety

- Resources about student guidance, including the student deans, student psychologists, online training, etc.
- Information about social safety.

6.5 Appendix V: Checklist for organising a thesis

The checklist below serves as guideline of the steps involved. Please note that your chair group may have additional/different steps. You should be informed about that in the chair group specific part of the course guide.

☐ Are you allowed to start your thesis in terms of required study progress (some programmes require a minimum progress before you can start your thesis?
☐ Does the chair group(s) you would like to do your thesis occur in your programme (and specialization)?

[8] Apart from the text of the report, this may also apply to **software and code** written by the student. Software and source code can be protected by copyright. If the student encodes or creates software as part of MSc Thesis / Research Practice process, the copyright to that code or software will rest with the student.
If the student **collects data**, there is no copyright yet. So as soon as that source data is shared with others, those others are allowed to use it without infringing student's rights. If the student makes creative choices in the structuring / ordering / selection of the data, it is possible that a copyright applies and that will also be due to the student.

- ☐ Do you meet the mandatory knowledge requirements for a thesis in the chair group? You can find those in the course description of that particular MSc thesis in the study handbook. Consult the thesis coordinator of the chair group, if in doubt.
- ☐ If you select courses to meet the mandatory knowledge requirements of the chair group, also check whether you still meet the requirements of your programme (consult your study adviser, if in doubt).
- ☐ Find a thesis topic.
- ☐ Check whether the topic of your thesis is consistent with your study programme (some programmes have requirements regarding admissible topics)
- ☐ Discuss the thesis topic with the supervisor.
- ☐ Start the OSIRIS process (https://wur.eu/tir-start)
- ☐ Check whether the country of research (if applicable) is a risk area or not.
- ☐ Discuss the requirements for your research proposal with your supervisor (length, depth etc.).
- ☐ Discuss your data management plan with your supervisor.
- ☐ Fill out the thesis learning agreement in OSIRIS and submit to your supervisor.
- ☐ Write a research proposal
- ☐ Ask your supervisor for feedback and approval of the research proposal.
- ☐ If applicable: arrange a date for the presentation of the research proposal.
- ☐ Arrange a meeting for a progress evaluation (the approximate date you already registered in the learning agreement)
- ☐ Arrange dates for the final assessment (handing in thesis report, final colloquium, examination).
- ☐ Provide the supervisor and examiner with a final version of your thesis report.
- ☐ Complete the thesis evaluation questionnaire.