

HWM thesis and internship rules

Hydrology and Quantitative Water Management Group

www.hwm.wur.nl

August 30, 2022

1 Theses and internships

The MSc programmes Earth and Environment (MEE) and Climate Studies (MCL) include a specialisation *Hydrology and Water Resources* or *The Physical Climate System*. In both programmes this specialisation includes a compulsory thesis of 6 months (36 credits) and internship of 4 months (24 credits). In some cases, the internship can be replaced with a research practice (24 credits). The main difference between the thesis and internship is that for a thesis you ask and answer a research question at academic level, while for an internship you complete an assignment at academic level.

The aim of this document is to clarify the rules and regulations and show some possibilities you have as a student to personalise your MSc programme. Since the regulations may change somewhat over the years, the most recent version on the day you start your thesis or internship counts. The most recent version of this document and other information can be found via www.hwm.wur.nl → education → MSc theses & internships and on the HWM thesis Brightspace, where all thesis and internship related information is collected.

1.1 Thesis

The MSc thesis is the most important part of the study programme. You develop research skills and become an expert on a topic of your choice. By designing a project, collecting and analysing data, communicating your findings through a written thesis and colloquium (final presentation), and a critical reflection on your own research, you complete a full research circle. This is your chance to show what you have learnt at the university and you can use your thesis as proof of your quality.

1.2 Internship

The academic internship gives the student a unique opportunity to experience how it is to work at a consultancy firm, water board, government agency, research institute, or foreign university and will help to find a job after graduation. You will work on one concrete assignment and become familiar with the background of the company/organization, the market and customers, research aims or public tasks and of course the employees of the internship provider. However, the internship is part of the curriculum, and therefore the academic level is important and the final report is an important outcome.

1.3 Research practice

Students with (supervised) work experience on an academic level and students who did internships at a previous university (of applied sciences) are sometimes allowed to exchange the internship for a research practice (ask your study advisor). The research practice is similar to a 24-credit thesis, but contains the self reflection and career orientation aspects from an internship.

2 Choices

2.1 Planning

Most students use their last year for their thesis and internship, but theses and internships is relatively flexible. These “courses” don’t have to fit in the 6-period academic calendar and you can work during the holidays or go on vacation when the rest of the university is working (as long as you specify it in your learning agreement – see Sec. 3.7). Do realize that supervisors may not be available the whole summer.

Plan your thesis/internship well in advance, especially when you depend on people from outside the university (abroad or internship provider).

As soon as you are seriously thinking about doing a thesis at HWM (usually 6–2 months in advance; see checklist on the last page), send an email to hwm.office@wur.nl specifying when you expect to start. The secretary will add you to Brightspace and the DES-HWM-STUDENTS mailing list, so you are informed about all relevant topics. When you have more details about your project, you can startup the administrative process on OSIRIS by following the instruction at: wur.eu/tir-start. If you decided not to do a thesis at HWM after all, please inform the secretary at <https://wur.eu/tir-start>.

2.2 Thesis or internship first?

You can choose in which order you want to do your thesis and internship. A reason for doing an internship last could be that you hope to find a job there after graduating. A reason for doing a thesis last could be that it is the most important part of your curriculum and you want to be as well prepared for this final assessment as possible.

2.3 Courses

Following courses at the university is very cheap compared to following courses after you graduate (3000 euros for a week is no exception). Therefore, you may want to use the

Table 1: Summary of thesis and internship specifications. Contact hwm.office@wur.nl for administrative issues.

	Thesis	Internship	Research practice
Code	HWM-80436 (80418–80439)	HWM-70424 (70424–70439)	HWM-79324
Credits	18–39 (typically 36*)	24–39 (typically 24*)	24
Duration	12–26 weeks (typically 24*)	16–26 weeks (typically 16*)	16 weeks
Coordinator	Roel Dijksma	Bart Vermeulen	Bart Vermeulen
Supervisors	At least 1 from HWM	1 from HWM + 1 from internship provider	At least 1 from HWM
Topic	Linked to HWM research	Linked to field of internship provider	Linked to HWM research
Evaluation	40% performance	50% performance	40% performance
	50% research report	40% project report	50% research report
	5% oral presentation	5% oral presentation	5% oral presentation
	5% oral defence	5% oral defence	5% oral defence
		Pass/fail self-reflection note	Pass/fail self-reflection note

* depending on study programme

opportunity while you are still a student and follow additional courses to strengthen your profile.

You can follow courses during your thesis project (apart from a few compulsory courses, which you should have passed before starting your thesis/internship – Sec. 3.1). For example, you can follow Hydrogeology in period 1 and work on your thesis only in the afternoons, or you can do your ACT-project part-time when you’ve already started on your thesis project.

If you want to follow extra courses, but don’t want to delay your graduation, you can choose to work on your thesis/internship in the summer months (be aware of the limited availability of supervisors).

2.4 Deciding what you want

Before you start looking for specific topics, you should think about what you want to learn during your thesis/internship. In every thesis and internship project you will improve your research skills and skills in project management, reading, writing and presenting, but there are differences in focus between research projects.

- Do you want to focus on improving data processing, modelling or field work skills?
- Do you want to dive into the scientific literature or do you want a project with a direct link to practical application?
- Do you want to specialize and do your thesis and internship on a similar topic or do you want to widen your horizon and choose very different topics.
- Do you want experience abroad?

2.5 Finding a topic

The thesis/internship topic must fit within the specialisation of HWM and have a close relation with the MSc courses of HWM. For MCL students, the topic should also fit within the theme of that programme, so you should be able to explain how your thesis topic relates to Climate Studies. Theses and internships can only be done individually. Sometimes, parts

of the thesis research project (e.g. field work) can be combined with the thesis work of another student. There are several ways to find a suitable topic.

- Look at the announcements theses and internships on tip.wur.nl (this list is not exhaustive, but gives some idea of the possibilities as well as some concrete topics we received from internship providers).
- Look at internship opportunities on wur.jobteaser.com. Please note that companies can post topics on jobteaser themselves, so check if a topic is suitable for an HWM internship yourself by asking a staff member.
- Talk to staff members when you follow their courses.
- Talk to current thesis and internship students.
- Visit the annual thesis market in February where HWM staff will present current topics.
- Find out what research HWM staff members are involved in. Just typing their names in Google Scholar already gives a good overview.
- Look at the thesis and internship reports on the MSc thesis Brightspace (ask the secretary hwm.office@wur.nl if you don’t have access).
- Attend other students’ thesis and internship presentations to get an idea of what they did (ask hwm.office@wur.nl if you want to receive invitations).
- Look in the Pyrus news letter.
- Talk to the thesis/internship coordinator. He can give an overview of possibilities and direct you to other staff members. Please don’t make appointments with more than two staff members yourself (unprepared “shopping” is time consuming).
- For internships: many companies and government institutes have contact forms for internships on their websites which you can fill out, but it is usually easier to find a suitable place through the network of the lecturers. If you know which kind of topic (and type of provider) you would prefer, you can approach a lecturer from a similar field and ask if (s)he has useful contacts.
- For internships: be aware that internship providers

get students from different universities (of applied sciences), with varying regulations concerning the topic, academic level and duration. Make sure that the ideas from the provider are aligned with the HWM regulations at an early stage, by finding a university supervisor and discussing the direction before the plans solidify.

- For internships: it is allowed to split the project in two or three sub-projects, as long as they are connected and combined in one report.

2.6 Minor thesis

Second (minor) theses could be a nice addition to your programme, if you don't mind delaying your graduation with a few months. Minor theses are especially useful when you want to specialize in several topics or when you want to achieve different learning objectives (e.g. both field work experience abroad and an in-depth research topic).

2.7 Going abroad

2.7.1 Thesis abroad

Because it is such an important part of your study programme, it is very important that the academic level of theses is guaranteed. There are several possibilities for doing (part of) a thesis abroad.

- You are supervised by an HWM staff member, start and finish your thesis at HWM, but go abroad for a few months in between for instance for field work, often related to ongoing research projects.
- You are supervised by an HWM staff member and a researcher from a university abroad with whom the staff member has close contact and can guarantee appropriate supervision and facilities during your stay abroad.

MSc theses should always be connected to current HWM research projects. Staff members decide if a topic meets this requirement. It is your responsibility to make sure that you make the best use of the scientific expertise available among the staff members of the chair group HWM.

2.7.2 Internship abroad

For internships, the academic requirements are less strict, because one of the learning objectives for internships is to get acquainted with other working environments. There are several possibilities for doing an internship abroad.

- The internship provider is a Dutch company that has an office or project abroad.
- The internship provider is a foreign company or NGO.
- The internship provider is a foreign university or research institute.

Of course you should also have an HWM supervisor (just like internships in the Netherlands; Sec. 3.5).

2.8 FAQ

- *Is it possible to involve another chair group?*
Yes. This happens quite often. You need supervisors from both groups. In the learning agreement, you should specify the percentages of contribution from the groups.
- *Is it possible to extend the thesis/internship?*
Yes (see Sec. 3.1). Ask your study advisor for advice and approval.
- *I don't like travelling. Can I do my internship in Wageningen?*
Yes. There are a few companies and of course Wageningen Environmental Research. It is also possible to do an internship at the Laboratory for Water and Sediment Dynamics, but we recommend spending time outside the university.
- *Can I do my thesis at an institute, government agency or company?*
Yes, in exceptional cases, but only if we have very good contact with your supervisors, such that the academic level of your thesis is guaranteed.

3 Rules and regulations

There are quite some rules for theses and internships. Some are set by the university and exam committee, others by HWM. This section gives an overview of the HWM rules.

3.1 Requirements

Before you are allowed to start your thesis/internship, a significant part of the MSc courses should be completed, including passing several courses. You should have passed two courses in the following set:

- Catchment and Climate Hydrology (HWM-32806)
- River Flow and Morphology (HWM-30306)
- Advanced Hydrological Systems Analysis (SLM-33306)
- Water and Air Flow Numerical Techniques (HWM-33806)
- Coastal Oceanography and Delta Geology (HWM-33306)
- Urban Hydrometeorology (MAQ-35306)
- Hydrogeology (HWM-20806)
- Geophysical Fluid Mechanics (HWM-23806)

and at least one of these courses should be in the set:

- Catchment and Climate Hydrology (HWM-32806),
- River Flow and Morphology (HWM-30306)
- Advanced Hydrological Systems Analysis (SLM-33306).

A less extensive study programme may result in a restricted choice of topics. For example, if you haven't followed *River Flow and Morphology*, you are allowed to do a thesis at HWM, but discouraged to choose a topic which requires knowledge from that course.

Your study advisor (MEE: Kim Janssen, Monica Gorska or Femke Hilhorst, MCL: Saskia van Bakel or Annemarie Hage) has to approve that you are allowed to start. Email her and send the response to your supervisor(s).

3.2 Size

The standard number of credits is 36 credits (24 weeks) for a thesis, 24 credits (16 weeks) for an internship and 24 credits for research practice. If you want to extend the duration of your thesis or internship (max. 39 credits = 26 weeks), you must consult your study advisor first. Thesis topics with a size of 18 – 33 credits can be used as minor thesis (ask study advisor and exam committee for approval).

3.3 Academic level (internship only)

At Wageningen University, the internship has an academic level, because it is part of the curriculum. This means that at your internship provider, you have to be supervised by a specialist with academic background. The academic level of the internship will be estimated at the start, based on a project description (see Sec. 3.8.2), and evaluated afterwards, based on the final report. The report is an important part of the evaluation (see Table 1). Showing that you can evaluate your results critically (and not just carrying out what the internship provider tells you to do) is an important part of the internship.

Typical activities for an internship are: modelling, data collection and analysis or data processing and interpretation. The internship provider sets a concrete project in close consultation with the HWM-staff and the student (written down in the project description; Sec. 3.8.2) well before the internship starts, and the student can start from the beginning.

Preferably, the internship consists of one project, allowing sufficient time for critical evaluation of the result. If the internship consists of 2 or 3 smaller projects, this should be clarified at the start in the learning agreement, covered in the personal learning objectives and the project report. A student is allowed to spend a little time on side-projects (at academic level), but this should not come at the cost of the main project(s).

3.4 Provider (internship only)

Finding an internship provider is your own responsibility, but the HWM staff is always willing to help and can use its (inter)national network if necessary. Sometimes companies or institutes have open positions for an internship student, and inform the chair group about it. Internship possibilities are posted on a regular basis on tip.wur.nl and in the Pyrus newsletter. The following list contains possible locations for an internship:

- Engineering and consulting firms (see www.nwp.nl for water related firms and institutes)
- Water boards (www.waterschappen.nl)

- Provinces and municipalities
- Government and research institutes (Rijkswaterstaat, KNMI, RIVM, Wageningen Environmental Research, Deltares, KWR, NIOZ)
- Foreign universities and research institutes
- External contacts of the HWM-staff (domestic and foreign)

You can also look at the reports from previous internships on Brightspace for inspiration or ask the internship coordinator for contact suggestions.

3.5 Coordinator, supervisors and examiner

The thesis/internship coordinator (see Table 1) can give you information on possible topics, internship providers and supervisors.

There are two secretaries (Tamara Schalkx and Rachèl Croonen) who can be contacted through hwm.office@wur.nl for administrative issues. Rachèl mostly handles student-related issues (but please email to hwm.office@wur.nl, so Tamara can step in when needed).

HWM thesis and research practice students have at least one university supervisor, which should be an HWM permanent staff member¹. A second supervisor can be added to the supervision team. The second supervisor can be another permanent staff member, an HWM temporary staff member (PhD candidate or postdoc) or an external supervisor (from another chair group or institution).

Thesis students are officially entitled to two hours of supervision per week during 24 weeks (combined effort of all supervisors). In practice, HWM supervisors spend more time on supervising than required, especially during the period when supervisors read and provide feedback on the proposal and report.

HWM internship students have one supervisor at the internship provider and one from HWM (Table 1). The HWM supervisor should be a permanent staff member. Most supervision is done by the internship provider, but the HWM supervisor should be kept informed to safeguard the academic level.

For theses, internships and research practice, you also need an examiner. The examiner is not involved in the project but checks the level of the products (proposal / internship plan + thesis / report) and grading and is present at the examination (Sec. 3.17). The examiner should be a permanent staff member. Who the examiner will be, is determined at the start of the project and fixed in the learning agreement.

Note that just like between students, there are differences between supervisors in their way of working. Some supervisors prefer to have two-weekly updating emails and regular meetings, while others prefer a more loose contact. Some supervisors prefer to read the whole draft report at

¹Permanent staff members at HWM are Victor Bense, Claudia Brauer, Roel Dijkema, Tim van Emmerik, Ton Hoitink, Hidde Leijnse, Lieke Melsen, Syed Mustafa, Martine van der Ploeg, Ryan Teuling, Bart Vermeulen, Kryss Waldschläger and Albrecht Weerts

once, while others prefer to read it in parts (so they can comment directly and students can apply the new knowledge directly when writing the next chapters). Discuss what you can expect from each other during the first meeting and write it down in the learning agreement, so you won't be surprised or disappointed.

3.6 Workplace

HWM wants to provide work space for thesis students. Currently, the Lumen and Gaia buildings are being remodeled and the space for students is limited and changes often. At this moment, there are desks and computers available in the 'Chemistry building' at Dreijenplein 4. Please email Roel Dijkma if you want to use one of those work places.

Please note that we share the rooms with MAQ, but that the computers are bought and maintained by the two groups separately. So please use a pc marked with HWM and do not rearrange monitors and other hardware.

Internship students work at their internship providers. There may also be space in the Chemistry building for internship students to spend some time (e.g. one day a week). We will keep all students informed about changes in the housing procedure through the DES-HWM-STUDENTS mailing list.

3.7 Agreement

The student, supervisor(s) and examiner fill out and approve the learning agreement. Download the agreement (Word document) from Brightspace, fill it in together with your supervisors and examiner. For theses and research practice, copy the contents into OSIRIS (for this you need to have started up the thesis procedure on OSIRIS as explained at wur.eu/tir-start). For internships, the option to fill in the learning agreement in OSIRIS is available from November 15, 2022. Also save the Word file as pdf, let all supervisors and examiner sign it (signing is only necessary if that isn't done in OSIRIS, so for internships before Nov 15th) and email it to the secretary at hwm.office@wur.nl and your study advisor. Complete these steps before you start (for theses the first week is also allowed).

The internship project proposal (Sec. 3.8.2) is added as annex to the learning agreement. For internships, a second agreement should be filled out: the internship agreement. This agreement is about the working conditions at the internship provider (financial compensation, illness or leave days) and should be signed by the internship provider, the internship coordinator (Bart Vermeulen, because of legal reasons) and yourself. Send the internship contract with signatures from the internship provider and yourself to the internship coordinator. He will sign it and send it to the secretary.

The learning agreement is important for you, especially in the case of internships. When all parties have signed it, your supervisors have committed to your project and promised to guide you through it, and in turn you have

promised to work on this project and finish within a certain period (see Sec. 3.9 on what to do in case of delay). The signed agreement gives you proof of the intended project and planning, which you can use in case of conflicts. For internships: if you want to combine two or three projects, you have to specify it in the agreement and set up learning objectives for each project.

In the agreement, you already set the date of your final presentation (Sec. 3.15) and proposal presentation (for theses; Sec. 3.10) or progress evaluation meeting (for internship; Sec. 3.11). Check these dates first with your supervisor(s) and examiner and then with the secretary (send email to hwm.office@wur.nl) and ask her to send the meeting request for the final presentation. Send Teams/Outlook meeting requests to supervisors and examiner for the progress evaluation meeting (in case of internship; 30 min) and assessment (45 min, after the final presentation) yourself as early as possible. Check in the HWM thesis organization Excel sheet (link on Brightspace) if your agreement has been received and that the information has been entered in the sheet.

3.8 Proposal

3.8.1 Thesis and research practice

The thesis work starts with writing a research proposal. Important aspects of this proposal are the research objective, research question, methods and time schedule. Preferably, in order to avoid that too much time is spent on the proposal, the first drafting of the proposal starts prior to the real start of the thesis work. You can use the LaTeX thesis proposal template, which includes the main chapters (see *HWM thesis and internship tips*), but you are not obliged to use it. The proposal should not exceed 4 pages (excluding time table and references).

The proposal should be iterated with the supervisors towards a final draft and sent to the examiner at least one day before the presentation (Sec. 3.10). After the proposal presentation, you may have to adjust the final draft using feedback from the discussion and comments from the examiner (see Sec. 3.11). Send this final proposal to your supervisors and the examiner (for progress evaluation, Sec. 3.11) and upload it to Brightspace.

Whenever you plan to do experiments in the Water and Sediment Lab, it is important to involve David Boelee (david.boelee@wur.nl) as early as possible. He can help you making a realistic plan and keeps an overview of all the activities in the lab. He can provide you with useful insight about what is and what is not possible in the lab. During the course of your thesis, any communication with David must involve your daily, first supervisor, especially when important decisions regarding your experiments are made.

For fieldwork equipment, make sure you contact Victor Bense (victor.bense@wur.nl) to check the availability of field equipment.

3.8.2 Internship

Internship students write a 1-page project description with subject delineation and time schedule prior to starting the internship. This project description is added as Annex to the learning agreement. About 3 weeks after the start of the project, this project description is updated and expanded to a more extensive project plan (3–5 pages, structured like a research proposal with motivation, objectives, methods and timeline), which includes the experience from the first weeks.

3.9 Delay

In the learning agreement, the date of completion is set (see also Appendix B). If you need an extension, you must write an email (no later than 4 weeks before the deadline) to the examiner, indicating the reason(s) for the delay and an adapted planning. Explain what you will do in order to meet the new deadline, for example change the way you work, communicate differently with supervisors or alter the topic.

3.10 Proposal presentation (thesis only)

Every thesis (and research practice) student will give a short lunch presentation after about 4–5 weeks (3 weeks in case of research practice or minor thesis), but no more than 8 weeks (this is doubled if you work on the thesis part-time). You present your research proposal in 7 minutes, followed by 8 minutes of discussion.

Proposal presentations are in English and take place on Wednesdays or Fridays during lunch. They are scheduled as hybrid meetings. In principle, you should be present in room E.112 in Lumen. You should arrange a laptop and set up the projector yourself before the presentation starts and put the projector back after the presentation(s). You will receive instructions from the secretary before your presentation. If there are other presentations before and/or after yours, arrange with the other speakers beforehand who will set up and who will put away the projector and laptop. If it is impossible for you to be on campus, please inform the secretary so the meeting can be altered to ‘online only’.

Both the supervisor(s) and examiner need to be present. Students are expected to attend as many presentations by other students as possible and contribute actively by asking questions.

The objective of this presentation is to show fellow students and staff what you are working on, which is both fun (it’s nice to know what other students are doing) and useful. You may get relevant feedback from people who are not involved in your project, which you can use during your project, or you can learn that other people are working on a similar topic and team up.

It helps you to get your research objective and plan very clear (7 minutes is not much). After the presentation, the audience should understand why your project is so important, what your objectives are and how you’re going to achieve your goals (and answer your research questions).

3.11 Progress evaluation

After about 4–5 (thesis) or 3 (internship + research practice) weeks, but no more than 8 weeks (full-time equivalent), a progress evaluation takes place. The supervisors and examiner decide whether the project has enough potential, resulting in the decision “continue” (go) or “terminate” (no go). For theses and research practice, this decision is based on the final thesis proposal and thesis proposal presentation (so no other meeting with the examiner is required). For internships, there is a (virtual) meeting with the supervisors, examiner and internship provider, using the updated and expanded project plan as input (send a Teams meeting request for 30 min to supervisors and examiner yourself well in advance). The examiner fills in a short progress evaluation form after the proposal presentation / meeting and shares that with student and supervisors.

3.12 Thesis ring

All thesis students should participate in the HWM thesis ring. There are two groups – the secretary will assign you to one of them. The thesis ring meets each Wednesday at 14.00, as a hybrid meeting (please attend in person if possible). During the meeting, students provide feedback on each other’s documents and share and discuss thesis-related issues. Each meeting is moderated by a HWM staff member (temporary or permanent). More information about the thesis ring can be found on Brightspace.

3.13 Report

At the end of the project you hand in a report. The report is a final version and will be evaluated by the university supervisor(s) and examiner. The report has the structure of a research report and should be in English. If you want to write in Dutch, you have to request permission from the examining board (ebel@wur.nl; Examining Board Environment and Landscape) and include a long (~10% of the total text) English summary. The report should have fewer than 40 pages (excl. appendices, min. font size of 10) and the maximum size is 10 MB (for the pdf), to allow easy storage and distribution. See the additional document *HWM thesis and internship tips* for tips on report set-up, text, figures and technicalities. We recommend LaTeX as an efficient text editor, but you are not obliged to use it.

If your thesis or internship report is very good, you may think of trying to publish it in a scientific journal. If you discuss this with your supervisors in an early stage, you can write your thesis report in the form of a scientific paper.

All reports are uploaded to the university’s library. If the report is confidential, please specify it in the learning agreement and it will not be uploaded.

3.14 Self-reflection note (internship and research practice only)

The student is requested to write a “self-reflection note” (max. 2 pages, structured like any report with a clear introduction, main text and conclusions). In the reflection note the student evaluates his/her own performance and write about the future. The personal reflection report should describe your personal development during the internship and your goals for further development. Questions on the learning outcomes you have to answer are for example:

- What were the most important learning outcomes?
- What activities did you perform to attain these learning outcomes?
- How do you evaluate your performance on these activities?
- What are your feelings on your performance on these activities?
- Could you have done things in another way? And, if so, how?
- What did you experience as your strong and weak points in this working environment?
- How can you improve your weak points?
- What gaps do you identify in your knowledge and skills in your professional development?
- What was the contribution of results to the goals of the organization/the larger project the internship was a part of?
- Based on your experience gained during this internship, which working environment (commercial, academy/research or public domain) is most suitable for you and why?
- What are your plans for the near future?

Send the self-reflection note at least one week before the final presentation to the supervisors and examiner. They will evaluate it on the basis of evaluation criteria of a good reflection report (see for example ACT or the thesis Brightspace). The reflection note is graded as pass/fail. If you don't take it seriously, you will fail the whole internship or research practice.

3.15 Final presentation

The date of the final presentation (thesis colloquium or internship presentation) is already fixed in the agreement. When planning that day, you take into account the availability of the university supervisor(s), the examiner and external supervisors (if applicable). Please check in the HWM thesis organization Excel sheet if the presentations are indeed scheduled to avoid last-minute requests and disappointments if your preferred time slot is no longer available.

You are in charge of your planning, so don't wait for your supervisors to mention the final presentation, but raise the topic yourself. Ask your supervisors if they think the quality of your work is high enough to present within the planned

time frame; if not, apply for extension (no later than 4 weeks before completion; Sec. 3.9).

You can update the title (the title of your proposal is the default) up to four weeks before the presentation by emailing hwm.office@wur.nl. The secretary will then send a first invitation (as Teams meeting) to the HWM staff and HWM students. At least one week before the presentation, send an abstract (which has been approved by the supervisors) to the secretary. She will update the invitation. You can forward the Teams link to other people you want to invite yourself.

Your report should be finished two days before the final presentation. Send the final version to your supervisors and examiner and upload it to Brightspace.

Thesis colloquia consist of a 20 min. presentation and 10 minutes discussion; internship (and research practice) presentations are 15 min. presentation and 5 min. discussion. See the HWM thesis organization Excel sheet (link on Brightspace) for the scheduled presentations.

Presentations are in English and take place on Wednesdays or Fridays during lunch. They are scheduled as hybrid meetings. In principle, you should be present in room E.112 in Lumen. You should arrange a laptop and set up the projector yourself before the presentation starts and put the projector back after the presentation(s). You will receive instructions from the secretary before your presentation. If there are other presentations before and/or after yours, arrange with the other speakers beforehand who will set up and who will put away the projector and laptop. If it is impossible for you to be on campus, please inform the secretary so the meeting can be altered to 'online only'.

You are welcome to invite friends and family to your presentation (it's one of the few opportunities to show them what you've been doing), but target the level of your presentation to fellow students and HWM staff members that were not involved in your project. Students are expected to attend as many presentations by other students as possible and contribute actively by asking questions. The first questions from the audience are reserved for fellow MSc students. The presenting student should invite at least 5 students specifically to his/her presentation to ensure a large enough audience.

3.16 Presentation attendance

Students and staff are expected to attend as many presentations as possible. It is a matter of courtesy to listen to your colleagues present what they have been working on for months. As a (very) minimal effort, every thesis student has to attend 3 presentations from fellow students.

At the university many presentations take place as part of MSc theses, internships or scientific symposia. Attending presentations helps you to prepare for your own presentations, to get ideas for your thesis research and to put the thesis research at HWM into a broader scientific and societal context. Therefore, we strongly recommend to attend as many presentations as possible. Feel free to take notes and partake in the discussion. Do not be afraid to ask ques-

tions after the presentation – we value your contribution and will not use “bad questions” against you when assessing your own thesis.

3.17 Examination and final discussion

The final presentation is followed by a meeting of 45 minutes with supervisors and examiner (send an Outlook meeting request yourself well in advance). The first part of the meeting (15 min) is an examination. This discussion has the set-up of an oral exam, in which you should prove to the supervisors and the examiner that you understand what you did, what the effect is of your choices, what the contribution of your research to science and practice and how your research fits in a broader context. This exam determines part of the final grade (see Table 1).

3.18 Assessment

After the discussion (Sec. 3.17), you leave the (virtual) room and your project will be evaluated by the supervisors and examiner according to the official assessment forms (see HWM website; for weights of evaluation criteria, see Table 1), using the official rubrics (included in the assessment form on Brightspace).

Internship students should ask the internship provider to send their evaluation of the professional skills (form on HWM website and MSc thesis Brightspace) to the university supervisor at least two days before the final presentation. The university supervisors then make sure that all items are evaluated. Finally, you are invited back into the room and informed about the assessment. In exceptional cases, you can be asked to improve the report based on the presentation and discussion. The supervisors check whether the changes have been made.

When the grade for the MSc thesis is very high (9 or higher), the report needs to be graded by a second examiner (another HWM staff member).

3.19 Report distribution

Upload the final report to Brightspace before the final presentation. Send a digital version to your supervisors, the examiner and the secretary by email. You do not have to print hard copy versions of the report.

3.20 Data (thesis only)

At the end of your MSc thesis or research practice, you are required to send your data and scripts to ensure reproducibility (formal university data management requirements) and so it can be used in future (thesis) projects, of course with the appropriate references.

Send the main supervisor all thesis material:

- Data – not only the most basic data files (e.g. the raw data downloaded from a website), but also intermediate datasets you obtained after filtering or selecting or running a model

- Scripts
- Figures
- Report in pdf and tex (including figures) or doc
- Presentation in tex/ppt and pdf
- Readme files to help potential users understand your logic (see *HWM thesis and internship tips*).

3.21 Completion

- You should have uploaded to OSIRIS:
 - learning agreement - also send the signed PDF version to hwm.office@wur.nl (for internships the upload option to OSIRIS starts from November 15, 2022)
 - internship agreement (internship only)
- Your supervisor should have uploaded in OSIRIS:
 - progress evaluation
 - assessment forms from:
 - * supervisor(s)
 - * examiner
 - * internship host (internship only)
- You should have uploaded on Brightspace:
 - thesis proposal (thesis and research practice) or extended project plan (internship)
 - report (max. 10 MB)
 - reflection report (internship and research practice)
- You should have sent to your supervisor:
 - data and other material (for thesis)

A Planning checklist (for students)

* 4-5 for theses and 3 for internship and research practice.

When	What	Thesis	Internship	Research Practice
6-2 months before start	Contact coordinator (Roel Dijkema for thesis and Bart Vermeulen for internship + research practice)			
6-2 months before start	Contact secretary to announce your start (even if you're not certain yet), be added to Brightspace and mailing list		NA	
6-1 months before start	Find topic and supervisors			
1 month before start	Contact secretary (hwm.office@wur.nl) to receive starting info, be added to Teams and be assigned to a thesis ring group			
1 month before start	Contact secretary to request work space		NA	
2-1 weeks before start	Write 1-page project proposal	NA		NA
2-1 weeks before start	Complete and sign learning agreement, upload to OSIRIS or send to secretary			
2-1 weeks before start	Complete and sign internship agreement, send to secretary	NA		NA
Week 1	Schedule proposal presentation with secretary		NA	
Week 1	Schedule final presentation with secretary			
Week 1	Send Teams meeting invitation for progress evaluation meeting to supervisors (both internship host and university) and examiner	NA		NA
Week 1	Send Teams meeting invitation for examination meeting with supervisor(s) and examiner			
Throughout project	Check progress of administrative arrangements in Excel sheet			
Throughout project	Attend presentations (3 is the very minimum)			
Week 4-5 or 3* (min. 1 day before presentation)	Send final draft thesis proposal to supervisors and examiner		NA	
Week 4-5 or 3*	Present thesis proposal		NA	
Week 4-5 or 3*	Adapt draft (if requested) and upload final thesis proposal to Brightspace		NA	
Week 4-5 or 3* (min. 1 day before meeting)	Send updated project plan to supervisors and examiner and upload to Brightspace	NA		NA
Week 4-5 or 3*	Progress meeting with supervisors (both from university and internship provider) and examiner	NA		NA
Week 4-5 or 3*	Supervisors and examiner decide go/no-go and communicate with student and secretary			
4 weeks before end	Send title (if different from proposal) to secretary			
1 week before end	Send abstract to secretary			
1 week before end	Send reflection note to supervisors and examiner	NA		
1 week before end	Ask external internship supervisor to send evaluation (part A on assessment form) to university internship supervisor	NA		NA
2 days before end	Send pdf of report to supervisors and examiner and upload to Brightspace			
2 days before end	Send data and scripts to supervisors		NA	
End	Give final presentation and do examination			