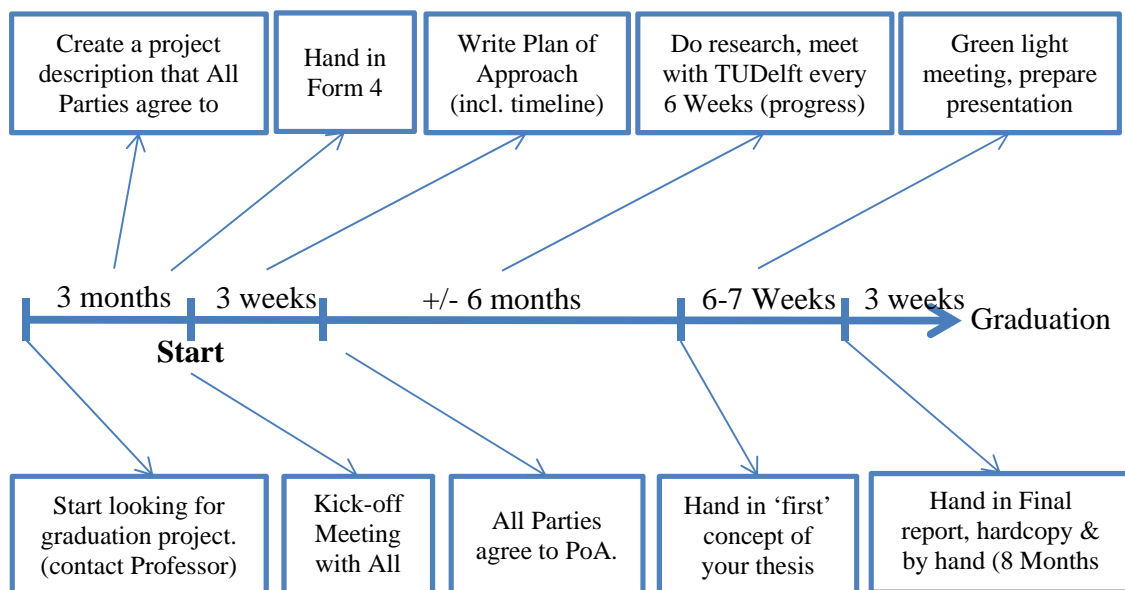


Graduation guidelines

This document is meant for students of MT, it describes the duties and rights of the graduation student and the graduation (course code MT54015, see also Brightspace for more documentation). It should be seen as guidelines and support for the successful completion of your Master Thesis.

Summary Graduation Process flow (not to scale!)



Definitions

All Parties – Student, Problem owner and TUDelft

OSA – Student administration

Problem owner – PhD student, Staff-member or Company which makes available the assignment

Student – You

TUDelft – Staff member or Professor responsible for your graduation project

Expectations

- Register and get permission to start your thesis from the MSc Coordinator at least 10 working days before the start of your thesis using Form 4
- Both student and staff should focus on finishing the final thesis report within 8 months after the start (the defense/grading is 3 weeks later).
- If time is of an issue to you, discuss this with us. Too speed up the process you could put in extra hours and/or accept a lower final grade by skipping the last revision(s). You can always graduate as soon as the work passes our minimal bar. Just discuss your needs and options.
- After 8 months you will be requested to plan a green light meeting within 6 weeks from that date, if one has not already been planned. As the nominal duration has passed at that moment.
- If the first green light meeting is a "No Go", two months after that, you will receive a request to plan a second and final green light meeting within 6 weeks from that date. This signals the end of the re-sit period. A second "No Go" therefore means you have failed the project and will need to redo entirely.
- **You're in the lead**, this means:
 - o You arrange for the non-obligatory meetings (only green light and defense are obligatory).
 - o You create agenda's for the meetings, send the paperwork (to be discussed) at least one week prior to the meeting and report back the main decisions of the meeting to those involved
 - o If provided timely, your supervisors will be able to give feedback on the paperwork submitted during the meeting.
 - o Also update and distribute your progress and compare it to the original planning (both global and short term).
 - o For the green light and final thesis hard copies are to be distributed by you to all present before the specified date of delivery (this is the default, it can be agreed upon to do elements otherwise)
 - o Feel free to contact the TUDelft for a discussion on content any time you feel like. The mentioned 6 weeks are regular progress meetings, if you want to discuss content, don't wait for them, do that as soon as you feel the need.

- There will be at least 3 persons involved in your thesis work;
 - A daily supervisor. When with a company, they will provide him, when at the TUDelft, usually a PhD or staff member whose project it is.
 - A faculty supervisor. He'll be your point of contact for the entire thesis/scientific content. He's there for questions, discussions and progress meetings. He might be the same as the daily supervisor, but this is rare
 - The professor of the chosen specialization, to be involved at least in the greenlight meeting and final exam. But most of the time he will also be involved at other stages

Pitfalls to guard against

1. **The rabbit hole.** Don't keep on digging. Alternate between digging and a helicopter view, so you have a clear vision on the direction your digging in. A clear plan of approach can be very useful in determining where to go
2. **The man with the butterfly net.** I can solve this, and that and that ... and that. Especially when at a company, you'll be tempted to dig in to a multitude of issues that you feel you can solve also. DON'T! Your job is to graduate, not to save the company, or solve the world food problem overnight. You're free to do both after you graduate, but for now focus on the assignment. You can still mention the other issues as recommendations, but steer clear of them. Again a good plan of approach sets your goals and you can use these to see if your current investigation is in line with this.
3. **The writers' block.** Have... to.... finish... this.... report.... (include a mental image of student dying behind his laptop). 90% of the delays in the master thesis project can be (partially) related to the writing of the report. Some of you just haven't taken the opportunities provided throughout the study to practice. Others have much difficulty in committing their train of thoughts to the paper. In many cases great ideas in your mind, don't look so great on paper. There is a simple solution, write a lot and start early. Make a detailed progress report for each meeting, describing not only what you have done, but especially why and how this is true, or should be done. Many choose to start on the report for this purpose, which seems a good idea, however; your supervisors, will need to read more than necessary, increasing the chance of missing out on what's important and in a later stage it will be hard for you to abandon what you've written, as it is part of the Report, instead of just a progress

report. Of course writing for meetings, will mean you'll need to compile a real report in the end, not just put all meeting reports behind each other.

- 4. The Slippery Slope.** You did not quite finish what you wanted, but you're sure you can do it next week. However, if you do that, the next part of the work is delayed too and in the end, that one week led to 1-2 months of delay in the end. It is important to maintain and update your original (milestone) planning. A revision of it is not a problem, but again be aware of what can still be done in the remaining time and if this extra work you do, or did, really is needed for the results envisioned at the start. You (and your supervisor) cannot accurately estimate all tasks at the start, however, letting one task slip without compensating in the work of the other tasks, is quite impossible, so use the progress meetings to discuss, what is required and what can be abandoned to keep everybody happy.
- 5. Yourself vs. Alone.** The thesis is your final project, this means we expect you do take the lead and demonstrate you can solve a problem. However, this does not mean we expect you to do it alone, in isolation. Don't stay stuck in a situation, or wait for the next meeting to discuss an issue you see no way out of. Contact your supervisors and/or other for this and discuss them. The same goes for your solutions and ideas, you will sharpen them by discussing these with others, you cannot cover all viewpoints alone. Of course you should not ask for directions and ideas all the time, but a good rule of thumb is if you are stuck for more than 2 days, you should definitely discuss the situation with others.

The initial phase (+/-3 months before the start)

You can get in contact with the relevant research group. to see if there is a project available you might like. TUDelft is frequently contacted by problem owners for such projects, but this is not guaranteed. In a discussion you can both find out what kind of project it is you'd like to do and if there is a subject that interests you. In most cases there is a rough problem description available of about ½ an A4.

Another option is to contact a problem owner (company/PhD student/Staff Member) yourself (e.g. through your network). If they agree to take you as a graduation student on a subject you find interesting, you should write a short description of about ½ an A4 to discuss with the specialization prof. This is usually enough for to see if a problem is a viable subject to graduate on.

Based on the initial description and discussions with the all parties, you should extend the description with the most important boundary conditions set, so all of you have an idea what you will do in the 8 months and if this is feasible. If all parties agree to this text (roughly an A4), the initial phase is concluded and it is time to set the date for a kick-off meeting. Usually at this point, you should also be assigned a daily supervisor (the problem owner) and an academic supervisor (TUDelft).

Compensation/Contract

If you do your project with a company. The TUDelft only requires the real extra costs (like traveling) to be reimbursed. Any other graduation compensation is a private negotiation between you and the company. For international students it is important they stay within the limits of the educational visum.

The TUDelft has a common tripartite graduation contract for graduation projects at a company, available on Brightspace, under Student information MSc Marine Technology (DPO or Science) - Graduation. This contract can be signed relatively quickly. If companies insist on their own version, this will have to be approved by Legal and may take significantly longer to get signed.

It is also possible to sign a contract only between the student and the company. Be careful however that you must publish your report in the repository. The confidentiality thereof is commonly 3 years and maximum 5 years, after which the information becomes public. So make sure your contract allows this. Also the contract cannot claim for the company research that is brought in by the supervisor, for its sole benefit.

Permission to start (Form 4)

Currently as a pilot we are working with maximum durations for the graduation project and the re-sit period, might you fail in the regular time. This requires a proper administration of the start of you thesis. To do this you must fill in and hand in Form 4 (Brightspace-MSc Marine Technology (DPO/Science)-Graduation) with the Master Coordinator at least 10 working days before the start of you thesis. *Commonly a kick-off is planned in the first week of your project. If this is not possible due to circumstances you can take the first Friday of your project as the kick-off date.*

Plan of Approach (2-3 weeks)

The kick-off meeting is used to fine tune and line up the ideas of the all parties in the graduation project. After this meeting the student should work on a plan of approach. This contains the basic problem (and its introduction), research question, sub-questions and a time line/planning. It is also the time for the

student to acquaint himself with the problem and the (literature of) potential solutions suggested in the kick-off meeting. Usually the Plan of Approach goes through several revisions via e-mail before being finalized in a meeting attended by all parties, roughly three weeks after the kick-off (but sometimes this part takes much longer, especially if the project formulation is vague or broad). A good plan of approach is a key factor in finishing on time, so take your time and ask proper feedback from your supervisors.

In the later meetings you should provide your status relevant to the original planning, as well as planned work and realized work between the meetings. This will help you and us keeping an eye on the timeline. Deviations from the planning do not have to be an issue, but they have to be identified timely to deal with them efficiently.

Main project part

Every master thesis consist of roughly 3 parts: **the analysis phase, the solution design and using the solution to answer the questions**. The analysis phase is the first part, depending on the subject this is a good place to do a literature review. In this phase you'll look at your problem from all angles and try to capture its essence in a list of requirements for the solution. In the solution phase you'll convert this list into a working solution (design, calculation (Excel) model, CFD model, simulation, etc). Here you might also need to do a literature review to find the best solution to your problem. In this phase it is very important to be aware of the assumptions that you incorporate in the solution. Verification/Validation of the solution is also part of this phase. Though this does form the overflow into the final phase of answering the research question(s).

The size of these three phases is not fixed, in fact each one can be dominant depending on the subject. Some examples to clarify this. You are designing a ship. If you would do it from a Shipping management perspective, the analysis (of the market) is important to establish the design criteria, this will be your biggest part. The design/GA is much smaller as well as the economic calculations done on the vessel afterwards to establish it's the right design. Would you have been a designer, the analysis might already be largely done by the company, thus a much smaller part. The design of the vessel includes much more detail and depth and forms the main part of your thesis. The design is then also the answer, but proving this is again a small part of your thesis. Finally would you be into modeling, it might even happen that the answering part is the largest part of the thesis, though usually the analysis and solution (model) creation is also significant.

What is important in this part is to start writing early. You should have a meeting with your TUDelft supervisor roughly every 6 weeks and hand in a small report where you explain your work so far. This should be report style, to allow a good discussion, both on the result of your work, your approach and your writing style. All three are important for your graduation. Another benefit is that while writing your work down, you take a moment to reflect on your approach, this is important as many times decisions are taken intuitively or you might lose the structure of your approach. Finally it is our experience that in general students who postpone the writing are the ones that take (much) longer for their graduation thesis.

Concept 1 (9 weeks before graduation)

Concept 1 is the first time you hand in your entire report. It may still miss a summary, acknowledgement, finalized appendices and the proper lists of figures, tables and abbreviations, it does need to contain your conclusions and recommendations and all references. A week later concept 1 will be discussed with both the problem owner and the TUDelft. This can be done in one meeting, or in two separate meetings, that does not matter. Based on this discussion the “green light” meeting can be planned and most likely a graduation date can be reserved. If the concept is not up to standard a new concept 1 meeting will be planned with the student.

Be aware that as part of the proof for the MSc Title, you’ll also need to hand in a paper of 6-10 pages on your thesis subject. A draft should be included with the files handed in for Concept 1

Concept 2 / Green Light meeting (6/5 weeks before graduation) or after 9 months.

As part of the pilot the duration of the regular graduation project is limited to a maximum of 9 months. After which you will automatically have to go through a green light meeting. Eight months after the start date in Form 4, you will be requested by the Master Coordinator to plan a Green Light meeting within 6 weeks of that date. Note that nominally the Green Light Meeting will be held (not planned) already 2-3 weeks before this request. So normally a meeting would at least already be planned by this time.

A Concept 2 report will form the basis for your “green light” meeting. This should be as complete as possible, including a summary and (final) title of your work. The exact look and feel of the front page can be done afterwards as well as final lay-out. A week before the ‘green light’ meeting you should hand in Concept 2.

You are expected to prepare a presentation of your work for this meeting, which will form the basis for the discussion together with your Concept 2. Also your scientific paper should be finished by this time. Including reference list and summary.

For this meeting you should also make sure that there are no loose ends in OSIRIS, which means, no courses without grading, no courses registered as extra, etc. **This includes the course Student Colloquia!**

The GL-meeting will be held with at least the following people:

- the supervisor
- A professor or other member of the same research group
- A third independent member, from another section.
- The student (absence results in a No Go automatically)
- Allowed, but not required:
 - a company supervisor

The GL-meeting can result in 3 options:

1. A "Go", with a graduation date set within 6 weeks of the GL-meeting date
2. A "Go", but pending minor revisions and with a graduation date set within 6 weeks of the GL-meeting date
3. A "No Go", meaning it is not expected the student will be able to graduate within 6 weeks.

If your work is accepted the reserved date will become final and you should as soon as possible hand in the exam request form (Form 5) as well as inform the secretary of the green light, so she can hand in the necessary paperwork as well. Although with a tight schedule, Form 5 might need to be handed in already before the Green light meeting (minimum 25 working days before graduation).

If there is a "No Go" the re-sit period of the thesis will start. This means the student will receive an additional 3 months to bring his work up to the expected quality to pass the exam.

Second (Re-sit) Green Light meeting +/- 12 months after the start

When the first GL-meeting was a "No Go", a 3 month re-sit period is granted. Two months after the first "No Go", the student will again receive the request to plan a second Green Light meeting within six weeks of that date. The meeting requirements and preparations are the same as for the first Green Light Meeting. However if a second "No Go" is given, which means the student is not expected to be able to graduate within 6 weeks, this will mean the student has failed the

current project and will not be able to graduate on this subject. It will mean the student has to start anew, find a new project (and supervisor(s)) and redo an entire project. This decision is not a light one, hence the student should realise that the overrun in time allowed before this point is reached is in the order of 60-70% of the nominal time.

Final Thesis (3 weeks before graduation) & presentation

After a Go in your Green Light Meeting, your final thesis is to be handed in as a hardcopy with all members of your committee (Academic and guests). Also a digital copy is to be provided to the secretary of the section. The remaining time you should use to create a presentation and if you did your project with a company, it is a good habit to give the presentation there for the people interested before your final defense, e.g. in a lunch break.

Graduation day

The final part of your graduation course will start with a presentation for your committee, friends and family. This session will be opened by the Professor in about 5 min, introducing the committee and welcoming the rest. After that you'll have 20 minutes to present your work. The idea is that you are presenting your work to Engineers (not necessarily Maritime though). So don't assume your grandma has to be able to follow everything you say, but do help her pick up if you just finished some technical part of your presentation, by having a clear red line. In principal the presentation is in English, unless everybody in the audience is able to speak Dutch, then you can do it in Dutch. Be aware that presentations can be visited by foreign master students, in order to get their colloquium points. In short, you won't now if you can switch to Dutch until you start your presentation. The last 5-10 min of this session are reserved for questions from the audience.

After the presentation session (this is the default, a prof sometimes prefers otherwise), the oral defense will follow. This will take roughly an hour and you can usually expect 2 rounds of questions from each committee member (Faculty and Company). The questions are related to your thesis, but can require you to think out of the box or to apply lessons learned in other parts of your (Master) study. After this hour of questions, you'll be asked to join your family and the committee will then determine your grade. This will take between 15-30 min. The elements to be discussed can be found in the assessment form on Blackboard.

The last part is the graduation ceremony. Here the professor will summarise our findings on your thesis work, and read aloud the text of your diploma. After that

you can sign it. Next Froude will say some words, usually followed by a short speech of the graduated student. After all that, the ceremony ends and your family, friends etc. have the opportunity to congratulate you.

Repository Upload

The TUDelft requires you to upload your thesis-subject in the TUDelft repository 10 days before your graduation (this is what you signed for in Form 5). The penalty is not receiving your final grade list. Depending on your situation you can hand in one of the following:

- Your thesis report (lowest confidentiality)
- Your thesis report with and embargo date set to 5 years after your graduation
- An adapted version of your thesis report, with redaction of the sensitive information. (the report should still be readable). (highest confidentiality, only after agreement of TUDelft)

The choice is made together with your (company) supervisors, but do at least inform your TUDelft supervisors as well.

Failing to upload the element with the right confidentiality rating will not only reflect bad on both the TUDelft and you, it could also be a breach of the contract you signed and will make placing future thesis students at a company more difficult.