# Study guide Graduation project 2023-2024 MSc Systems and Control



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This study guide applies to students doing their graduation project of the Master Systems and Control in the academic year 2023-2024.

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# TU/e

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# **1** Introduction

The graduation project is a research project on a topic related to Systems and Control (S&C). It is supervised by a TU/e thesis supervisor who is a (assistant/associate/full) professor from the allocated section/research group of the student. The graduation project offers you the opportunity to apply your acquired knowledge, competences, and skills to a research project. The type and content of the graduation project depends on your background and ambitions. The graduation project can be carried out within the TU/e, within a company, at another university or research institute in the Netherland or abroad, as long as this is agreed upon by you and your TU/e thesis supervisor. A graduation project may be preceded by lab training on equipment safety and emergency protocol.

We advise you to read through this entire study guide before you start your graduation project so that you are well informed about the whole process and know what to do and pay attention to.

# 2 Learning objectives

After completing the graduation project, you have learned to apply your knowledge and skills to a complex research problem in the domain of S&C. You have gained experience in a mono-or multidisciplinary team within an engineering environment. This environment includes (A) the TU/e section/research group where you are allocated, or (B) a university, research institute or a company outside TU/e (note that you still have a TU/e thesis supervisor from your allocated section/research group).

After finalizing the graduation project, you are able to:

- Set up, plan and successfully execute the project. Setting up and planning the graduation work is expressed in the formulation of a project goal, research plan and project planning written down in the preparation phase report. Successfully executing the project also means regularly reviewing and updating the research plan if needed, showing a proactive attitude in informing your company and/or university supervisor about the status of your project, seeking help from your daily supervisor and/or fellow students, integrate into a team (if applicable).
- Work independently on a large individual research- or design project, relevant to their master's degree program, within a predefined time period. Independently implies that the students are able to solve many problems independently, but know when to ask for help. Moreover, the students are able to search for relevant literature and to apply the knowledge from this literature in the project.
- Analyze the results (experimental, numerical, qualitative, or mixed-method) of the research and, where relevant, are able to perform an analysis of the required design or model of the project. The students are able to combine the new knowledge, acquired during the project, with the relevant knowledge obtained during their master's program.
- Create or adapt tools, for example software, experimental set-up, theoretical model, conceptual framework, assessment tool or simulation model, required to carry out their project and come up with solutions for the problems encountered.
- Write a report or scientific paper in English about the project, that is understandable to the members of the graduation committee, that satisfies the standards written down in the TU/e code of scientific conduct, that shows how study-related knowledge and newly acquired knowledge have been applied and that exhibits the student's critical thinking and problem-solving skills.
- Present the work to an audience consisting of fellow master students, unfamiliar with the graduation project. Answer questions raised by the audience. Interact with the audience and make good use of facilities during the presentation.
- Discuss the project with the members of the graduation committee and show in their answers to questions of the committee members that they are aware of the boundaries of their knowledge and that they have a broader understanding of the implications of technologies/sources as part of the energy supply chain and/or as part of the economic/societal energy system, considering sustainability aspects.

# 3 Timeline

Phase 1: Preparation phase			
When	Who	What	
A few months before start graduation project	Student	Find a graduation project	
In case of graduation project abroad At least 6 weeks before the planned start date of Phase 2.	Student	Request approval from Examination Committee	
	Student & TU/e supervisor (& external supervisor)	Meeting to discuss scope and planning	
Start preparation phase (Phase 1)	Non-EU/EEA-students doing a graduation project in a company	Register for the NUFFIC- employment agreement	
Preparation phase (Phase 1)	Student	Starting your graduation project	
End of preparation phase	Student	Upload your preparation phase report in SharePoint*	

\*As the preparation phase report of this master's program is never published by TU/e, no additional actions are required in case of a confidential report.

Phase 2: Project phase			
When	Who	What	
Before start project phase (Phase 2)	Student	Registration and administrationSubmit 'Registration graduationproject phase S&C 2023-2024'	
First day of project phase	Student	Start your project execution. Good luck!	
During graduation project	Student & TU/e supervisor (& external supervisor)	During the graduation project	
4 months after the start of the project phase	Student & TU/e supervisor (& external supervisor)	Discuss progress, planning and expected submission date of the graduation report	
Before the end of the project phase	Student	Write the <u>graduation report</u> (do that alongside the thesis work)	
	Student & TU/e supervisor (& external supervisor)	Discuss how to organize the feedback process of the graduation report	
	Student & TU/e supervisor (& external supervisor)	Decide whether your graduation report should be confidential.	
	Student	If confidentiality is imposed, write a <u>public summary or public</u> <u>version</u> and submit the 'confidentiality form'	



Before the 8-month date and minimally one week before the final presentation the final version of the graduation report should be ready.		
End of project phase	Student	Upload your final graduation report in Sharepoint

Phase 3: Defense and grading phase			
When	Who	What	
The defense and grading phase (Phase 3) starts 1 day after uploading the final report in Sharepoint*. It ends at the day of the final presentation and defense. *only if the student has 75EC of the approved exam program. As it is not possible to organize the final presentation and defense in a couple days (certainly not in July and August), student and TU/e supervisor must start well in time with planning the defense. It should be			
2-3 months before the final presentation.	Student and TU/e supervisor	Check the timeline with respect to your final presentation	
1-2 months before the final presentation	TU/e supervisor	<u>Compose and invite members</u> graduation committee and external supervisor	
6 weeks before the final presentation	Student	Register for the examination committee meeting	
At least 10 working days before your final presentation	Student	Request 'Registration final exam' form	
At least 10 working days before your final presentation	Student	Submit 'Registration final exam' form	
At least 1-5 working days before the final presentation	Graduation committee	Assess the graduation report	
Last day – final presentation	Student & graduation committee	Give final presentation about your graduation project and defend it against your graduation committee	
Last day – final assessment	Graduation committee	Assess and grade the graduation project right after the final presentation	
Last day – after final assessment	Student & graduation committee	You are informed about your grade	
	Chair graduation committee	Email final assessment form to Examination committee	



# 4 Finding a graduation project

The initiative for finding a graduation project and a TU/e supervisor lies with you. Be pro-active and start looking for a graduation project and TU/e supervisor in time. You need to start making arrangements for your graduation project well in advance, approximately three months. A graduation project at an institute, company or abroad will need a longer preparation time!

Discuss if confidentiality may be an issue with your project. Try to find a topic that does not require confidentiality. If need be, discuss the issue with your supervisor(s).

# 4.1 Finding a TU/e supervisor

As mentioned above, you must find a TU/e supervisor for your graduation project yourself. A graduation project can be supervised by a TU/e assistant professor, associate professor or full/part-time professor, or anyone explicitly appointed by the Examination Committee. The TU/e supervisor is ultimately responsible for your graduation project. If you do your graduation project within the university the TU/e supervisor can appoint another staff member, like a PhD or postdoc, as your daily supervisor.

Once you have found a graduation project, meet up with your TU/e supervisor and discuss the details of your graduation project (e.g. contents, scope, location and planning) plus any other questions you might have.

# 4.2 Finding a graduation project at the TU/e

The procedure for finding a suitable project differs per section/research group. Some sections/research groups have a notice board presenting all available projects. Other sections/research groups advise their students to pay a visit to each staff member to get an overview of the latest projects. The topic of your graduation project will lie within the field of research of the section/research group concerned.

As every section/research group has its own procedure you can best contact your mentor to help you find a graduation project within your allocated section/research group.

### 4.3 Finding a graduation project in a company

Maybe you have a specific company in mind where you want to do your graduation project. You should not contact the company without the prior consent of your mentor.

As a graduation project at a company should always be supervised by a TU/e professor, you must first find a TU/e supervisor in your allocated section/research group who matches the company's field of research. A graduation project at a company should be of sufficient level for a master student, large enough for the minimal duration, and daily supervised by an external supervisor (in addition to the TU/e supervisor who is ultimately responsible for your graduation project). The external supervisor should minimally hold a MSc degree in the technical science domains.

### 4.4 Finding a graduation project abroad

Maybe you are interested in going abroad for your graduation project. This can be of great value for you. You can immerse yourself in another culture and develop new skills.

A graduation project abroad should be of a sufficient level for a master's student, meet the minimal duration criteria and be supervised daily by an external supervisor (in addition to the TU/e supervisor from your allocated section/research group who is ultimately responsible for your graduation project).

A good starting point for finding a graduation project abroad at specific universities, research institutions or companies is the network of the TU/e staff members and sections/research groups. Many of the TU/e staff members have excellent connections abroad. Your mentor is a good starting point to discuss international options.

It is very important to keep in mind that arranging a graduation project abroad takes time, as explained in the

education guide. Within TU/e the registration system Mobility Online is used to register all international incoming and outgoing exchange.

This procedure will take approximately 6 weeks and needs to be finished 2 weeks prior to the start of your graduation project to be applicable for a scholarship. More information, see '<u>5.2.2 Graduation project abroad and registration in</u> <u>Mobility Online</u>'.

# 5 Starting criteria and registration

## 5.1 Starting your graduation project

The graduation project consists of three phases:

- Phase 1: preparation phase
- Phase 2: project phase
- Phase 3: defense and grading phase



Phase 1 has no entry requirements. This means that the student is allowed to start this phase at any moment during the MSc program. In practice, the majority of students starts this phase while completing their internship (i.e. finalizing the report and planning the internship presentation). The preparation phase is concluded with a preparation phase report, that will be graded with "VO"/"ON" by the thesis supervisor.

Your preparation phase report should contain a description of the background of your project and - if applicable - already obtained results, the project goal, the research methodology and your project planning. Use <u>this format</u> to write your 'Preparation Phase Report'. Upload your preparation phase report before the start of the project phase in the <u>SharePoint ME student reports</u>.

In case of a graduation project at a company it might be necessary to organize the following documents before the start of the preparation phase:

- For non-EU/EEA students: an employment agreement for non-EU/EEA-student), see 5.2.3.
- A company contract, see 5.2.4
- A non-disclosure agreement, see 5.2.5.

In case of a graduation project abroad: you can only start with the project phase after approval from the Examination Committee (see 5.1.2).

Phase 2 has a formal start and has strict entrance requirements:

- The program of examinations has been approved (see 5.1.1.).
- At least 70 EC of the formal program of examinations has been completed, i.e. including the internship.
- The internship report has been uploaded in the <u>SharePoint ME student reports</u>.
- The approved preparation phase report has been uploaded in the <u>SharePoint ME student reports</u>.
- The form '<u>Registration graduation project phase S&C 2023-2024</u>' has been signed by the TU/e thesis supervisor and submitted to the Center for Student Administration (CSA) of Mechanical Engineering and timely submitted before the starting date recorded on the registration form (see 5.2.1.).



### 5.1.1 Approval of exam program

You have already submitted your exam program for approval in your  $1^{st}$  master year. Please check in OSIRIS if your exam program is approved. If you have not submitted your study program yet, please do so now (see <u>to-do list</u>). If you have submitted your exam program, but your exam program has changed in the meantime, you need to resubmit your exam program for approval (see <u>to-do list</u>).

If you are obtaining an internal double diploma, please follow this procedure.

#### 5.1.2 Approval of 'Research proposal Graduation project Abroad' by Examination Committee

If you have found a graduation project abroad and a TU/e supervisor, you must ask the approval from the Examination Committee via a <u>formal request</u>. To that purpose you must submit your research proposal, using the form <u>'Research Proposal Graduation Project Abroad'</u>.

Please note that you can only start with the project phase after approval from the Examination Committee. Make sure to start in time and consider that the examination committee has one meeting per month (see <u>deadlines</u>).

### 5.2 Registration and administration

#### 5.2.1 Graduation project – project phase registration webform

You must register for the graduation project through the <u>'Registration graduation project phase S&C 2023-2024'</u> webform, not via OSIRIS.

Make sure you discuss all the details of your graduation project with your TU/e supervisor before filling out and submitting the webform. Your signed graduation project registration webform must be sent to CSA (me.CSA.AT.SC.SET@tue.nl) who will check whether your registration is correct. If anything is incorrect you will be notified. In some cases you will be asked to resubmit the registration webform, in other cases your graduation project cannot proceed (e.g. when you do not meet the starting criteria).

On the form you fill out the project start date, as well as a '6-months date' and a '8-months date'. The latter are respectively 6 and 8 months after the start date of your project.

#### 5.2.2 Graduation project abroad and registration in Mobility Online

It is very important to keep in mind that arranging a graduation project abroad takes time, as explained in the <u>education guide</u>. If you are interested in doing a graduation project abroad, please read the website information and all its subpages carefully for more information.

Within TU/e the registration system <u>Mobility Online</u> is used to register all international incoming and outgoing exchange. This procedure will take approximately 6 weeks and needs to be finished 2 weeks prior to the start of your graduation project to be applicable for a scholarship. <u>Information about scholarships</u> (e.g. eligibility) can be found in the education guide. A 'User manual student internship/project/research abroad' explaining the Mobility Online process is also available <u>in the education guide</u>. The International Office can assist you with your registration. You can contact the international office of the department of Mechanical Engineering <u>by mail</u> or <u>in an online meeting</u>, <u>see also:</u> <u>'Checklist internship abroad'</u>.

#### 5.2.3 For non-EU/EEA students working at a company: employment agreement

Non-EU/EEA-students who do a graduation project in a company in the Netherlands, need a mandatory working agreement (<u>Employment agreement non-EU/EEA students</u>). Dutch law requires that copies of the agreement are kept by both the graduation project provider and TU/e. You can find more information at <u>the Study in Holland-website</u>. The employment agreement should be signed by the ESA manager of the Department of Mechanical



Engineering. Please hand in a digital version of your employment agreement via the <u>International Office</u>. A signed version of the agreement will be returned to you as soon as possible.

#### 5.2.4 Company contract

If you do your graduation project at a company, <u>it is strongly recommended to sign a contract</u>. The company contract can include things like payment/allowance, insurance, working hours, legal information, intellectual property, confidentiality, etc. The contract can be a tripartite contract (you, the company and TU/e sign it) or a bipartite contract (only you and the company sign it). Although the company might have its own company contract, it is recommended to use the <u>TU/e's model work place contract</u>, as non-standard contracts will cost a lot of extra time (because it has to be approved by the legal department of the TU/e) and might cause delay.

In case of a tripartite contract, the contract must be signed on behalf of TU/e by the ESA manager of the Department of Mechanical Engineering. This will be arranged for you by <u>the International Office</u> Your TU/e supervisor should not sign the company contract.

If you do your graduation project at ASML, Vanderlande B.V. or Lely Holding S.à.r.l., please consult <u>this website</u> about the framework agreements between TU/e and these companies. Also for projects at TNO a special procedure is in place, for which you can contact <u>the International Office</u>.

#### 5.2.5 Non-disclosure agreement

In case the company wants to impose a non-disclosure agreement (NDA) for you, your TU/e supervisor and/or graduation committee members, please email the NDA to <u>the International Office</u> After approval of the legal department, the NDA will be signed by the Dean of Mechanical Engineering. In case of an NDA, make sure to first read paragraph 6.2.2 about confidentiality as well.

### 5.3 Internal double diploma

For students doing an internal double diploma, a combined graduation project is generally part of the internal double diploma program. A combined graduation project is usually 60 EC, depending on the regular sizes of the graduation projects of the programs involved, and the contribution of each program is 50%. The domain specific learning goals of both master programs must be clearly identifiable in the graduation project. This will be assessed by each of the Examination Committees for their own program. Another option for students doing an internal double diploma is to do two separate graduation projects. More information about the internal double diploma for master programs can be found <u>here</u>.

The combined graduation project will be assessed in one final presentation and defense session and is graded by two separate graduation committees, resulting in two grades, one from each program.

In addition, the following additional provisions apply:

- the chair of the graduation committee is not the same person as the chair of the other graduation committee.
- at least 2 as examiner appointed members of the graduation committee are not members of the other graduation committee.

# 6 **Project phase : Duration and progress**

# 6.1 Duration of the project phase of the graduation project

For students who started their graduation project from the academic year 2022-2023 the duration of the project phase is between 6 and 8 months. Counting 4-6 weeks for the preparation phase, the project phase is supposed to be 6 months full-time work (45EC = 32 weeks full-time work). To allow some flexibility a 6-8 month period is offered.

For students of an internal double diploma with a combined graduation project of 60EC, the duration of the project phase is between 8-10 months.

On the graduation project phase registration form you should clearly specify the start date and end date of your project phase. Make sure to discuss the start date and end date with your TU/e supervisor, and if applicable also with your external supervisor, before submitting the form. When planning your graduation project, you and your supervisor(s) should take holidays into account. Taking into account holidays, the actual duration of the graduation project should meet the criteria listed above (i.e. 6-8 months).

Graduation projects are typically done in fulltime. In case the student is planning to do the graduation project in parttime and expects not to complete the project phase in 8 months, it is recommended to request an extended duration of the project phase before the start of the project phase. If the student can demonstrate that he must work at least 50% part-time during the duration of the project phase, he can submit a motivated request to the examination committee. It is strongly recommended to first discuss the request with the <u>academic advisor</u>.

For students who started their graduation project before September 1, 2022 there is a minimum duration of 6 months, but not a maximum duration. Still, the expected duration is between 6-8 months.

# 6.2 During the project phase of the graduation project

You start working on your graduation project. Make sure to maintain regular contact with your TU/e supervisor or daily contact person and, if applicable, your external supervisor about your progress and to discuss your results and questions. At the start of the graduation project, discuss with your TU/e supervisor or daily contact person and, if applicable, your external supervisor how you will keep in contact (e.g., face-to-face meetings, online Teams meeting, or via email) and with what frequency. During your graduation project, adapt the communication, when necessary, e.g., if you encounter a problem. Keep in mind that your TU/e supervisor is there to help you, so do not hesitate to contact them if you are worried about something concerning your graduation project. In case you do not feel comfortable discussing a certain project-related or personal issue with your TU/e supervisor, you can contact the <u>academic advisor</u>.

In the <u>Regulations of the Examination Committee AT SC SET 2023-2024</u> (Appendix 9A of Article 4.5, p. 52-60) you can find more information about the graduation project, including guidelines for the graduation report (see also 6.2.1 and 6.2.2), the graduation project's assessment criteria as well as the assessment form. Have a look at it and make sure to work accordingly.

The end of the project phase is marked by the submission of the final graduation project report in the <u>SharePoint ME</u> <u>student reports</u>. The final report is the report that will be published in the library.

# TU/e

### 6.2.1 Graduation report

The graduation report must contain the following elements:

- summary
- definition of the research problem
- a clear description of the methodological aspects of the research
- context of the project in literature
- a clear description of the obtained results
- discussion and interpretation of the results
- conclusions and recommendations
- list of literature references

There are no restrictions with respect to the minimum or maximum length of the report.

The title page of the report must state the following information:

- title (and subtitle) of the graduation project
- surname student (including the initials)
- student IDNR
- section/research group and department
- name of the master's program (Sustainable Energy Technology)
- names of the thesis supervisor and other TU/e supervisors
- year of graduation
- study load (number of EC) of the graduation project
- An indication on whether or not the Master thesis is public information, and if not the date of publication
- A statement that the Master's thesis has been carried out in accordance with the rules of the TU/e Code of Scientific Integrity

Students must include a statement (on the titlepage) that their thesis report was made in accordance with the 'TU/e Code of Scientific Conduct for the Master thesis'. The statement is as following: "This report was made in accordance with the TU/e Code of Scientific Conduct for the Master thesis".

Students can review the TU/e code of scientific conduct here.

### 6.2.2 Confidential report

The Dutch government is of the opinion that publicly funded research should be freely accessible. Therefore, graduation theses are in principle public and Open Access. This means that a thesis must be included/published in the TU/e library.

If a company/organization involved in the preparation of the thesis believes that (commercial) interests may be harmed by publication of the thesis, the company/organization may impose a temporary embargo of up to two years. This means that the thesis may not be published for a period of two years and may therefore not be included in the TU/e library. The imposition of an embargo must have been announced by the student and his company/organization in good time, by submitting the <u>'Confidential report' form</u> at the latest two weeks before the student submits the thesis to the graduation committee.

It is wise, however, to check this well in advance and to try to avoid this situation as much as possible.

If the company/organization deems it necessary to impose an embargo for more than two years, the company/organization will have to submit a substantiated request to the secretary of the Examination Committee. The secretary of the Examination Committee will forward a timely submitted and motivated request to the Dean of the department. The Dean may decide to extend the confidentiality period by a maximum of another 3 years. The submission of the substantiated request must be made in good time; at the latest two weeks before the student submits the thesis to the thesis committee.

In case of a two-year embargo a public summary of the thesis must be made available in addition to the confidential version. The student may choose to write a public version of the thesis instead of a public summary. The public summary or public version of the thesis will be included/published in the TU/e library. For the public summary students may use, if possible, the summary or abstract of the original report. Please add a title page to the abstract. The title page is similar to the first page of the confidential Master thesis. If there is an embargo of more than two years, a public version of the thesis must be made available in addition to the confidential version.

Your TU/e supervisor will check your graduation report *and* the public summary of your graduation report for fraud and plagiarism. Your graduation report will be used for purposes related to your final assessment. For this reason, the graduation report will be shared by your TU/e supervisor with your graduation committee and, if applicable, your external supervisor.

The public summary of your graduation report will be published during the two-year embargo in the TU/e library. After the two-year embargo your graduation report will be published in the TU/e library.

The embargo might also influence the contents of your final presentation. Make sure to check this in time and always include your TU/e supervisor in the communication.

### 6.3 Project phase end date extension

In order to successfully complete your master's thesis, the project phase of the graduation project must be completed within the pre-determined and fixed time period of 6 to 8 months (except for students who have started the project phase of their graduation project before September 1, 2022).

If the project phase result (final report) is not delivered in time or in case of (personal) circumstances a student may request for a deadline extension. The Examination Committee can allow extensions of 10 weeks. A student needs to submit the <u>request form</u> to the Examination Committee at least one month before the maximum end date of 8 months, that is stated on the graduation project registration form.

If you cannot meet this deadline, please contact your academic advisor as soon possible to discuss the consequences and options.



# 7 Defense and grading phase

The end of the graduation project is marked by the final presentation and defense. A graduation committee will assess and grade your graduation project, graduation report and defense. The graduation committees are chaired by assistant professors (from UD1), associate professors or full professors.

Students may not commence with the third phase of the graduation project until:

- 75 EC of the formally approved program of examinations (art.3.6.3) has been completed.
- Phase 2 final report is uploaded into the <u>SharePoint ME student reports</u>.
- Students register for final exam by sending an email to the Examination Committee (<u>me.Examination.Committee.AT.SC.SET@tue.nl</u>) stating the ID-number and requesting the form "Registration final exam" 2 weeks in advance of the date of the presentation.

### 7.1 Planning your final presentation and defense

### 7.1.1 Fixing a date and composing the graduation committee

Well in time (preferably around 2-3 months before the final presentation) you should check the timeline with respect to your final presentation, together with your TU/e thesis supervisor. Your TU/e thesis supervisor will compose the graduation committee.

A graduation committee consists of at least three voting members. at least one of the members does not work in the section and department where the student graduates but is employed in another section and department participating in the master's program as referred to in PER appendix 1 a6. With regard to the Master's program S&C, it suffices if at least one of the members does not work in the section where the student graduates, but is employed in another section participating in the degree program as referred to in <u>Program and Examination</u> <u>Regulations Master S&C 2023-2024</u>, appendix 1 a6.

The <u>Regulations of the Examination Committee AT SC SET 2023-2024 (see Appendix 9A, art. 5)</u> stipulate strict rules regarding the setup of a graduation committee. Your TU/e thesis supervisor should take these rules into account when forming your graduation committee. All deviations from these rules require permission from the Examination Committee. The secretary of the Examination Committee will verify the composition of your graduation committee.

When planning your date, take into account the following:

- When you expect to finalize your report
- The availability of your graduation committee (especially important in July and August)
- The Examination Committee meeting at which the result of your 'final examination' will be determined
- The diploma ceremony you want to attend
- The month you want to deregister from TU/e

Check the <u>deadlines</u> for master exam application.

### 7.1.2 Graduation request in Osiris

In order to graduate from your master program you need to request the Examination Committee to determine that you have completed your master exam program and are eligible for your master degree. Make sure to submit your graduation request **about 6 weeks** prior to the expected date of completion of your exam program. You submit your graduation request via Osiris Student by clicking on 'Progress' and then 'Status: Request graduation'.

#### 7.1.3 Registration of your defense date

To actually register your defense date to the Examination Committee, you must request the 'Registration final exam' form via <u>me.Examination.Committee.AT.SC.SET@tue.nl</u>. The form contains the presentation date and the committee members. At least two weeks before the final presentation you have to submit the filled form to the secretary of the examination committee via <u>me.Examination.Committee.AT.SC.SET@tue.nl</u>.

# TU/e

# 7.2 Final presentation and defense

### 7.2.1 Presentation and defense

You conclude your graduation project by a presentation and a defense.

Final presentations are public and held on campus. The defense can be secluded, with only the graduation committee, your TU/e thesis supervisor and, if applicable, your external supervisor being present. Your TU/e thesis supervisor will organize your final presentation and invite the members of your graduation committee and, if applicable, your external supervisor to attend the final presentation. For the public presentation you can invite your family, friends and fellow students.

Your final presentation takes 20-25 minutes. You present your graduation project in such a way that your own contribution can be distinguished clearly. After your final presentation, during 50-60 minutes, the defense takes place. In the defense, the graduation committee will ask questions about your graduation project and report.

In exceptional situations the examination committee can approve an online defense. In that case the student needs to send a request to the examination committee well in time.

#### 7.2.2 Assessment of the graduation project

Your graduation committee assesses and grades your graduation project right after your final presentation and defense during the final assessment.

Your graduation project will be assessed on the following aspects:

- Approach and execution of the thesis work
- Autonomy of the student during the project
- Analytical ability of the student
- Inventive and creative abilities of the student
- Report quality
- Quality of the defense
- Quality of the presentation

The committee members will assess these seven aspects based on the report and the process of execution of the project. However, these seven aspects can also (instead or additionally) be clarified during the graduation process.

The grades for each aspect must be explained in writing on the assessment form as well.

In the end, a final grade is awarded. The final grade of the graduation project is the average of the seven partial grades. The seven aspects may have a different weight. In that case, the weight of each aspect must be clarified on the assessment form. Both the partial grades and the final grade will be determined based on the graduation process, the report, the presentation and the defense.

You can find more information, as well as the assessment form in the Examination Regulations.

The final grade of your graduation project is rounded to the nearest half grade on a scale of 0 to 10. Your graduation project is considered successfully completed if it is assessed with a final grade of 6.0 or more.

### 7.2.3 After the final assessment

Following the presentation, defense and assessment your supervisor will give a personal speech to you and your family and friends. We encourage you to invite your relatives for this moment to celebrate the end of your master's education together and be able to give them a small insight into the content of your graduation project and the collaboration with your supervisor.



After the final assessment, the chair of your graduation committee (or the group secretary) emails your graduation project assessment form to the examination committee. Your grade will be processed in OSIRIS.

You have to deregister through Studielink before the end of the month. You can find all information on how that works <u>here</u>. In case you graduate in July or August, you don't have to deregister; your registration ends automatically. For questions, please refer to ESA (Central, MetaForum): <u>ESA@tue.nl</u>.

# 7.3 Diploma and/or diploma ceremony

You will receive a confirmation of your master's exam from the Examination Committee. Once your diploma is ready, you will receive an email about when you can pick up the diploma.

If you stated on your 'Registration final exam' form that you want to join a diploma ceremony ('Master's graduation event'), you will receive an invitation after the Examination Committee meeting. If you stated that you want to join a later diploma ceremony, you will receive an invitation approximately one month before that ceremony. The Master's graduation event will take place twice a year. During this event you will receive your diploma and you can celebrate your graduation together with your fellow students and friends.