

BSc-Thesis assignment

MODULE 12 – CIVIL Engineering

Manual for Civil Engineering Students

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Preface

This manual regarding the Bachelor Thesis Assignment is meant for students of the bachelor program Civil Engineering at the University of Twente. The manual contains the most relevant information. For more information please also check the program website: www.utwente.nl/ce. During your Bachelor Thesis Assignment you will be kept up to date via the Canvas site of module 11 and 12.

For questions to which you do not find the answers in either the manual, on the website or on Canvas, please contact Ellen van Oosterzee of the Civil Engineering Program.

We wish you a successful assignment.

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Introduction.

With the Bachelor Thesis Assignment you will round up your Civil Engineering Bachelor Program. This manual will help you understand what doing this assignment contains. Before you even start your actual assignment you have to put in time and effort to prepare yourself.

For assignments performed in the Netherlands you should start preparing 4 – 6 months in advance. For assignments abroad, you should reserve some more time. This manual will help you organize and execute your BSc Thesis Assignment as well as possible.

Chapter 1 describes what the BSc Thesis Assignment entails, after which Chapter 2 elaborates on the preparation of the assignment. Chapter 3 provides information on everything *during* the assignment, followed by Chapter 4 which helps you to finish your assignment. Chapter 5 contains information on regulations regarding the BSc thesis assignment, like funding and insurance; which is most important when you go abroad. In appendix 1 you will find a timeline regarding preparation and execution and registration of the assignment. Appendix 2 describes deadlines and activities during the last semester (module 11 and 12)

1 General information Bachelor Assignment

1.1 Introduction

Below you will find general information about the execution of the BSc-thesis Assignment; about the goal of your assignment, the enrollment criteria and the different kinds of assignments.

1.2 The BSc Thesis Assignment in short

During your (at least) 10-week assignment you will prove to have enough content knowledge, but also your capability to work systematically and report your work. You execute your assignment within in a Civil Engineering company/institution; this hands-on experience is the only way to link your obtained knowledge and skills with practice.

The supervisor at the company you execute your assignment at, will supervise your daily work, whereas the supervisor at the UT will monitor the progression with regards to writing the thesis. The product you hand in at the end of the assignment, contains (among other things) a report in which the execution and results are described.

1.3 Intended learning outcomes of the BSc Thesis Assignment

The Civil Engineering program has the following intended learning outcomes for the BSc Thesis Assignment:

- the student is able to integrate and apply knowledge in a subfield of Civil Engineering and if necessary broaden and/or deepen this knowledge independently
- the student is able to work methodically and plan his/her work
- the student is able to communicate effectively about his/her work both written/oral and formal/informal
- the student is able to work independently on a project of limited complexity
- the student is able to make effective use of input and feedback from supervisors and/or colleagues
- the student shows that he/she is able to work effectively in the professional civil engineering context.

1.4 Prerequisites to start with the BSc Thesis Assignment

1.4.1 For Civil Engineering Students

In the period towards the BSc Thesis Assignment there are three **Go or No Go** moments, that determine whether or not you can proceed and/or start with your assignment:

Go / No go 1 Enrollment criteria: modules 1 – 8 are completed

When: Before the start of module 11

Participation in module 12 is solely allowed when a student has completed module 1 through 8 completely (year 1 and 2 of the BSc program). On top of that, the student needs to participate in module 11, as preparation on the BSc Thesis Assignment. Module 11 and 12 are intertwined in what is called 'the graduation-semester'. In exceptional cases and with permission of the Exam Board of Civil Engineering a student can get exemption of the enrollment criteria. To get this exemption, a request has to be made with the Exam Board.

Go / No go 2 Approval of the assignment

When: at the very last at the start of module 11.

The intended assignment has to be approved by the BSc-thesis coordinator of the department of the chosen specialization (Water, Construction or Traffic). Approval means that the assignment (at least) complies with the demands of the program:

- The assignment will be performed within an organization in the work field of Civil Engineering;
- The external supervision is (or expected to be) of sufficient level and range;
- The initial content of the assignment is clear enough to start with the preparation report.

When and if these demands are met, in other words when the department BSc-thesis coordinator gives a 'GO', a UT supervisor will be assigned. In consultation with the UT supervisor and the external supervisor the assignment will be defined in more detail. With this 'GO' you could also start rounding up a contract, arrange accommodation or a visa (if necessary).

Progression check Sufficient progression in preparation and direction of the assignment.

When: at the very last in week 6 of module 11

There needs to be proof of contact between student, UT supervisor and external supervisor about a (draft)version of the preparation report. This contact may be via Skype in case of an assignment abroad. Based on this meeting the UT supervisor will determine whether or not the student can start at the planned date, or whether there needs to be an extension of the start date, or that the assignment is not suitable to be carried out. This estimation by the UT supervisor will be captured on an assessment form (including motivation). Based on the meeting with your UT supervisor and your external supervisor you write your own report to which the assessment form will be added. In this report you elaborate on the feedback you received and how you intend to process this. This report will be handed in as part of module 11.

A positive verdict of the UT supervisor means that you are well on your way to start the BSc Thesis Assignment at the very moment that is scheduled in the timeline (week 9 of module 11). A negative verdict means that, without extra effort, you risk a significant delay or even cancellation of your BSc Thesis Assignment. In the case of an insufficient assessment, it is important to include some improve points/action points in your report. In case these needed action points have an influence on the date that your start of your assignment, your planning has to be updated too. In case you are unsuccessful or when there is no other assignment possible within the company, the process starts from scratch and you have to talk to the department coordinator about a new assignment.

Important: please start thinking about your BSc Thesis Assignment before you even start module 11. You can also start searching for an assignment/company before starting. All the prerequisites mentioned above are still relevant, but you are free and encouraged to start searching before the semester actually starts. Especially when you are going abroad.

1.4.2 *Students from other programs*

In case a student from another program wants to execute a BSc Thesis Assignment within Civil Engineering, there are possibly different prerequisites. This has to be established on a case to case basis.

1.5 **Kinds of BSc Thesis Assignments**

Obviously there is a variety of companies and organizations, in the Netherlands and abroad, where you could execute your BSc Thesis Assignment. This paragraph elaborates on these differences.

1.5.1 *Difference company/organization*

Different types of companies and organizations:

- Contractors
- Engineering- and advice companies
- Governments: national, regional, local and water authorities (also: Rijkswaterstaat)
- Research institutes (for instance universities, TNO, Deltares)

These companies/organizations each have their own specific set of characteristics. More information on the different kinds of companies will be provided during the workshop 'Searching for a Bachelor Assignment and interviewing' within module 8.

1.5.2 *Difference between an assignment in the Netherlands and an assignment abroad*

It is your own decision to do the BSc Thesis Assignment either in the Netherlands or abroad. Below are some issues you may want to take into consideration:

In the Netherlands

- Communication is more simple (especially for Dutch students)
- Relatively cheap (also because of possible internship-wages)
- Familiar culture (especially for Dutch students; but possibly also for foreign students who have been here for almost three years)
- The capabilities of the student are more apparent, because the organization knows the program or possibly had a student from the program before.

Abroad

- Communication could be harder and less frequent
- Takes more preparation (shots, visa, tickets)
- Costs are higher (sometimes no wages – however there are funding possibilities)
- Learn to deal with a different climate
- Learn to work in an international environment/different culture.

1.6 When is the BSc Thesis Assignment offered?

The BSc Thesis Assignment is offered twice a year, compared with module 11. For students that study the normal program, module 11 and 12 will take place in quartile 3 and 4 of their third Bachelor year. Student who get a delay, however, have the possibility to take module 11 and 12 in quartile 1 and 2. Please take into consideration that the moment at which you can start your assignment is dependent on the demands from paragraph 1.4.

1.7 Study load

Overall the study load of the BSc Thesis Assignment in module 12 is equal to 420 hours of work, which is, in its turn, equal to 15 EC. This study load excludes the work on the thesis proposal and the evaluation, which are embedded in module 11. The ECs for module 12 will be awarded when you comply with all the demands of the BSc Thesis Assignment.

It is not possible to get extra ECs for your BSc Thesis Assignment when you put more time into your assignment. There is 10 weeks to complete and one week extra to process feedback if necessary.

1.8 Definitions

The BSc Thesis Assignment is an individual assignment that completes the Bachelor Program Civil Engineering, in which a student works on the assignment at an external organizations under supervision of an external supervisor.

The external organization is a company, government body or a research institution where you execute your assignment. The external organization needs to be operating within the Civil Engineering discipline.

The external supervisor is the person that guides you within the external organization.

The UT supervisor is a member of the UT scientific staff who guides and assesses you in terms of content.

The second assessor is a member of the scientific staff of a different department than the department you are doing your assignment at. They will assess your report and are present at the final examination.

The mobility coordinator (Ellen van Oosterzee) is the person that checks your registration and is available for all peripheral business. Next to that, when you are experiencing problems, you can contact her. The mobility coordinator also arranges practical and organizational factors surrounding the BSc Thesis Assignment and advises regarding funding, insurance and visa.

The module coordinator (Eva Blokhuis) is responsible for overseeing the entire module and monitoring progress. Whenever there are severe issues, or when you experience issues with your planning, you can contact the module coordinator. Next to that, most of the direct contact runs via the mobility coordinator. The mobility coordinator can redirect you to the module coordinator if this seems necessary. Behind the scenes the module coordinator is in touch with the Department Coordinators, the mobility coordinator and the second assessors.

The Department Coordinator is the first contact person from the specialization you have chosen and whom you will have a meeting with to determine what your exact assignment will be. Next to that the department coordinator will help you find your UT supervisor. The UT supervisor will be assigned when your department coordinator gives you a 'GO' on your assignment idea.

2 Preparation on the BSc Thesis Assignment

The preparation of the BSc Thesis Assignment in the Netherlands will take approximately 4-6 months. A foreign assignment might take even longer to prepare for. Therefore it is important to start on time. What the preparations actually entail is described below in chronological order.

2.1 Information session

In the second semester, 2nd year Bachelor students will be informed on B3 during an information session (somewhere in March). As soon as you have visited the information session and it is clear when you want to execute your BSc Thesis Assignment you can fill out your application form in Mobility Online (see paragraph 2.3 and appendix 1). Please check the Bachelor Thesis website for the checklist Mobility Online.

2.2 Workshop finding a BSc Thesis Assignment and interviewing

In preparation on the BSc Thesis Assignment you will be provided with a workshop within Module 8. In this workshop you will learn how to search for an assignment, how to write an application letter, and how to do an interview. The workshop entails three dayparts and an assignment. The workshop is mandatory for students that will do the BSc Thesis Assignment. You will participate in some form of self-analysis: what are your best qualities and what are your weaknesses, what is of importance to you, what do you like? Additionally, we will zoom in on the job market within the realm of Civil Engineering and you have to prepare your own CV and application letter. Finally the most important features of an application letter for a job, and important features for your curriculum vitae will be discussed. In the end you will practice having a job interview.

2.3 Application BSc Thesis Assignment and the start of looking for one.

Every student has to perform an individual assignment and there are multiple opportunities during the year to start module 11. So to keep track of everyone, there is a web application that is used to register and monitor the students start and progression: Mobility Online. You can find this application in the Student Portal under Educational systems for students. Choose the Graduation registration and after that for the Registration Extended.

You need to apply yourself when you start searching for your assignment (preferably as early as possible) by filling out the '**Application Form**' (see figure 1). This way all involved know that you are looking for and will probably soon (within a year) start your assignment. So you can apply as early as module 8, not a problem at all.

The screenshot shows a web browser window with the URL <https://www.serviceofmobility.com/europe/BewerbingServlet?sessionId=3BCD3ED1C398FE7BA3D745E9A811CF721worker?>. The browser tabs include 'UT - Universiteit Tw...', 'OSIRIS - Zoek s...', 'Universiteit Tw...', 'Announcemen...', 'UT - utwente.nl - M...', and 'Online appli...'. The browser's address bar shows the URL, and the browser's menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The browser's toolbar includes 'Convert', 'Select', and 'UT - Over...'. The browser's status bar shows 'UT - Over...', 'MOBI...', 'Welk...', 'OSIR...', 'Bla...', 'Google', 'Home...', 'Mobi...', 'UT - Regi...', 'Repo...', 'SMS UT - Stud...', 'Tele...', 'Univ...', 'WebH...', and 'EvaS...'. The form is divided into several sections: 'Study details (at the time you will start your mobility)', 'Additional information', and 'Preferred research chair'. The 'Study details' section includes fields for Nationality (Germany), Nationality (second) (<- No choice ->), E-Mail address (v.demostudent151@student.utwente.nl), Country of the home institution (Netherlands), Home institution (ENSCHED01 - UNIVERSITEIT TWENTE), Faculty (ET - Faculty of Engineering Technology), Study level (BSc), Study field (Civil Engineering), and Number of completed higher education study years (2,00). The 'Additional information' section includes fields for Approximate start date, Approximate end date, Preferred country/countries, Organization name (if applicable), and Remarks. The 'Preferred research chair' section has a field for (Preferred) research chair. At the bottom, there are buttons for 'Cancel application', 'MOBILITY-ONLINE powered by', and 'Send Application'.

Figure 1: Web application Mobility Online

On the application form you will fill out all the information as thoroughly as possible. You will indicate in which department of Civil Engineering you want to execute your BSc Thesis Assignment (Traffic, Water or Construction) in the field for 'preferred research chair'. After filling out the application form you will get a confirmation per e-mail. This e-mail also contains an assignment in preparation for your conversation with the department coordinator. If you have a hard time choosing your 'preferred research chair', feel free to make an appointment with the Mobility Coordinator (Ellen van Oosterzee). Once your application has been handed in via Mobility Online and you have completed the preparatory assignment you will be invited to a meeting with the department coordinator within a number of weeks. You can access your Mobility Online account via the Login-button to check, adjust or add to what you have already filled out. Later on in the process you will also have to fill out the proposal form and the notification form. It is wise to check the Mobility Online checklist at the BSc Thesis Assignment website, to make sure you do not miss any crucial steps.

During the intake with the department coordinator you will determine what research you could perform at which company. Depending on your wished and demands, it could either be a ready-made assignment, but it could also mean that you will go looking for an assignment yourself (with or without help from the department coordinator)

About four months before you start your BSc Thesis Assignment, you will start sending out applications (in case you choose to find your own assignment). If the company is interested, they will most likely invite you for an interview. When you want to execute your BSc Thesis Assignment abroad you will have to start this process a few months earlier. Students that want to travel to a country with a different culture than ours, could consider aligning their assignment with the minor Crossing Borders. This combination, however, takes a lot of preparation. If you are interested in doing this, please contact the study adviser (Mrs. Roos).

2.4 An offer

Once you found the company at which you want to execute your BSc Thesis Assignment, a provisional assignment description needs to be formulated. A prerequisite is that the organization is operating in the Civil Engineering field, AND the assignment needs to fulfill (or be able to fulfill) the intended learning outcomes of the BSc Thesis Assignment. On top of that, the company has to be able to provide sufficient supervision - this will be determined by the department coordinator. The department coordinator will make an estimation based on these criteria whether or not the BSc Thesis Assignment lives up to the standards (GO/NO GO 2: for more details about the prerequisites to get started check paragraph 1.4), and will help you if necessary.

If your proposed assignment meets the requirements, a UT supervisor will be assigned. In consultation with your UT supervisor and the external supervisor the details of the assignment will be determined. When the assignment is approved by all parties, the contract can be arranged and possible housing and tickets/visa as well.

IF YOU LEAVE/START WITHOUT THE APPROVAL OF THE DEPARTMENT COORDINATOR AND BEFORE A UT-SUPERVISOR IS ASSIGNED, YOUR ASSIGNMENT WILL NOT BE APPROVED.

Arrangements with the company

As soon as you have found your assignment and when you are assigned a UT supervisor, you will fill out the '**Proposal form**' in Mobility Online. The form does not need to be printed or signed by the supervisor.

The company will often make arrangements regarding the assignment, like working hours, reimbursement, how to handle information, on paper. They will probably want you to sign a contract or an agreement. We prefer that you use our own assignment agreement ; <https://www.utwente.nl/en/et/student-mobility/documents/#assignment-agreement-opdrachtovereenkomst>. When the company insists on using their agreement (most of the time a contract in threefold), the Managing Director of ET needs to sign it. Therefore you have to hand it in with the administration office in building Buitenhorst (BH) 119.

There are several things you need to take into consideration when signing a contract, especially when the contract is two-fold:

- Does the contract say anything about confidentiality? Check the implications of confidentiality before signing the contract via <https://www.utwente.nl/en/et/student-mobility/documents/assignment-agreement-information-students.pdf>
- Is there anything in the contract about supervision provided by the company? If not, please talk about this with the company and make sure it is added to the contract.
- Is it clear in the contract that you will get access to the data you need to perform your research, and other facilities you may need (workplace, computer)? If not, please consult with the company and make sure it is put in the contract.

Every now and then, a company may want have you sign a confidentiality agreement to make sure the results of the research will be confidential. Our advice, again, is to use the confidentiality agreement provided by the Faculty Engineering Technology:

<https://www.utwente.nl/en/et/student-mobility/documents/#assignment-agreement-opdrachtovereenkomst>

On this page you can also find the procedure for signing a confidentiality agreement.

2.5 Preliminary Discussion with the UT supervisor

Based on the content of your assignment the department coordinator will assign a UT supervisor. With this lecturer you will make an appointment to discuss the preparation of your assignment and to make arrangements regarding your supervision. The UT supervisor may have some pointers on how to best prepare yourself in terms of content. He or she will also guide you during the preparation and execution.

2.6 Preliminary discussion with the UT supervisor and the external supervisor.

Next to the preliminary discussion with the UT supervisor, you are supposed to keep in touch with the external supervisor to shape your BSc Thesis Assignment. Subsequently you have a conversation with your UT supervisor AND your external supervisor – to discuss and fine-tune the concept version of your proposal. The UT supervisor determines, based on the conversation and the contents of the proposal, whether or not there is sufficient progress and whether or not the assignment is suitable. This judgement (named: progression check) by the UT supervisor may have consequences for your planning or the contents of the BSc Thesis Assignment (see 1.4 for more information on the progression check). The feedback you receive during the meeting with your UT supervisor and the external supervisor will be put into a short report which you have to hand in as part of module 11. More details on this report will be provided during module 11.

2.7 Writing the proposal (module 11)

Before executing your assignment you have to write your proposal in preparation on the assignment. Writing the proposal is part of module 11 'Preparation Bachelor Assignment'. In the proposal you describe both a research plan and your planning. The responsibility for assessing the preparation lies with the UT supervisor. Once you have actually started at the external organization, you will have two more weeks until the deadline of the thesis proposal, to give you the opportunity to fine tune some last issues within the external organization.

Further guidelines and assessment criteria for writing your proposal will be provided in the manual for module 11, which you can retrieve from the Canvas page for module 11.

There is a possibility that, during the execution of your assignment, there are some changes in your research method or in your initial planning. For example, because the information or data you needed cannot be retrieved, or because the assignment appears to be too big to complete within the set timeline. These changes will be discussed with both of your supervisors (within the company and within the University of Twente). On top of that, you will describe these changes in your final thesis.

2.8 Enrollment in Osiris for module 12

Like with every other module within the Bachelor program, it is important to be enrolled in module 12 in Osiris. However, since we consider the last two modules a semester, you do not have to actively enroll in module 12 in Osiris. Once you have enrolled in module 11, the subscription to module 12 will happen automatically.

With your enrollment in Osiris, you also get access to the Canvas page for Module 11 and 12, which is a joint page. On this Canvas page, all relevant documents, procedures, and announcements will be shared with you.

3 The execution of the BSc Thesis Assignment

Executing your BSc Thesis Assignment within a company or organization is completely different than taking classes and studying. You will be expected to be present from 8.30 in the morning till 5.00 in the afternoon and work there. So what to expect during the assignment? And what is expected from you? This information is provided in the paragraphs below.

3.1 Meeting the company

During the entire assignment it is very important to be open to your new colleagues and surroundings, and it is equally important to gather as much information as possible about the organization. Please make sure that you:

- Introduce yourself to your colleagues and tell them what you are there for;
- Behave and act as a regular employee as much as possible;
- Be critical about the information you are provided with. But you should also be aware of the fact that you get certain information because of reasons of which you are not immediately aware of.
- Be sensitive to possible sore points within the organization.

3.2 Supervision

3.2.1 Supervision by the company

The first job of your external supervisor is to make sure you are being properly introduced to the company. This means introducing you to the employees, and showing you around the company. Additionally the external supervisor will provide you with your daily guidance. When you have questions regarding (the content of) your assignment, the external supervisor is the first person to approach. That is why it is really important that your external supervisor has read your proposal. You should meet with the external supervisor approximately once a week to discuss the progress of your assignment. It is wise to plan these progress meetings at the start of your assignment. At the end of your assignment you discuss the concept report with the external supervisor, and you will evaluate your functioning within the company. Your external supervisor will receive an evaluation form around about two weeks before your assignment ends. This form needs to be filled out by the external supervisor, as soon as the results of your research are clear.

3.2.2. Supervision by the teacher

When you stay in the Netherlands, you will have a progress meeting with your supervisor. Next to that, you will be in touch via e-mail and/or phone. Students that go abroad for their thesis will have to depend on contact via Skype, telephone or e-mail. If possible, your supervisor will visit your company (under the condition you are doing your assignment in the Netherlands), which will happen about half-way through your assignment. You are the one to initiate contact and visits. During the assignment you have to hand in a concept report, most of the time, twice. Usually you will hand in the first concept report somewhere before week 6, with both your UT supervisor and external supervisor. You discuss the exact moment of handing it in with your supervisors, but the final concept report needs to be handed in, in week 8 of module 12.

And then, 10 weeks (with possible delay of 1 week) after your start with the company, you will hand in the final BSc Thesis Assignment with you supervisor at the UT and the company, and you will make an appointment for your final feedback conversation.

Besides the aforementioned feedback moments, it is recommended to discuss your concepts and progress on a regular basis, to make sure you are on the right path. If there are any changes in your research questions, methodology or planning, you have the opportunity to talk this through with your UT supervisor. The feedback from your supervisors can be used for the final report and the evaluation report.

Eleven working weeks after the start of your assignment with the organization, you need to hand in the final report. The final grade will be awarded on average one week after handing in the report during the examination session. The UT supervisor is the one to grade your report, but will take the advice of the external supervisor and a second assessor from a different department of Civil Engineering. More information on the final assessment and the criteria can be found in appendix 3. More information on finishing the assignment is provided in chapter 4.

3.3 The Notification Form

Once you start working at the company, please fill out the '**Proposal Form**' in Mobility Online Based on this form we will make sure you get assigned a second assessor. Please indicate the language in which you are writing your report so that we can make sure that the second assessor has the right language requirements.

3.4 Evaluation (part of module 11)

After the execution of your assignment, we ask you to reflect on (the process of) the assignment, the organization/context and on your personal performance. The goal of the BSc assignment is that you learn to use your knowledge and skills in the real world. Further instructions on the evaluation report are provided during module 11 and can also be found in the module manual of module 11.

3.5 Questions or problems during the assignment

Below you will find information on who to contact in case the following situations occur:

- Is there insufficient guidance from your external supervisor, please contact your UT supervisor.
- Is there insufficient guidance from your UT supervisor, please contact your department coordinator.
- Are there any problems on a personal level and you feel like your supervisors can not help you, please contact Ellen van Oosterzee

4 Completion of the BSc Thesis Assignment

To finish the Thesis Assignment and to obtain 15 EC you have to fulfil the following requirements:

- You have worked in the company/organization for at least 10 weeks.
- You have digitally handed in the report with both your UT supervisor, your external supervisor AND your second assessor.
- A final examination session took place and you were awarded a final grade.
- You handed in a Pdf version of your report via bachelor-eindopdracht-cit@utwente.nl
- You digitally filled out the evaluation forms and sent them in. A link will be sent to you at the end of your assignment.

4.1 Writing the final report

The final report contains the process and results of your research.

A good report consists of the following at least:

A title page, with the title of the report, the name of the author, the name of the company and the assignment period.

A preface, in which you indicate what the direct cause for writing the report was. You can also use it to thank persons that were important and helpful to you during the execution of your assignment.

A table of contents, from which the reader can distract a clear report structure.

A summary, in which the goal, research questions, results and the main conclusions are presented (1-2 pages)

An introduction, in which you mention the company you execute your research at, what the background is, what the cause is and what the goal of your research is. You will also elaborate on the research questions and the methodology. You will explain what the structure of your report is and what topics you will address in which chapter.

The core of your report, in which you work out your assignment.

A discussion, in which you critically reflect on the results of your research, describe possible limitations and remarkable findings and link them to the results of your research.

A conclusion, which describes the result of your research and provides answers to your research questions.

Recommendations, that give usable advice to your client(s) and it should provide suggestions for further research.

Possible appendices, that provide additional information to your report, for example extensive calculations or theories. In the actual report you will use the results and for more information you will refer to the appendices. The main text of the report should be readable and comprehensible.

The complete report needs to be between 15-30 pages, excluding appendices. From the academic year 2019/2020 the final report for the BSc-thesis needs to be written in English.

Tips for writing the report (also check out section E of the book 'Skill Sheets' by Rob van Tulder, ISBN: 9789043023139):

- Writing a report is a creative process which will take a good amount of time. Start writing at an early stage of the assignment. The later you start, the harder it will be to finish the concept report on time.
- Consult your supervisor about the setup of your report in due time, and show a rough version of several chapters. To stimulate this process you need to hand in a concept report in week 6. It is easier to process feedback at the beginning of the writing process as opposed to later on.
- Think about your audience; what previous knowledge do they have. Your external supervisor may know everything about the company, but not about the Civil Engineering program, and vice versa for the UT supervisor.
- Do not write the report in one session. Write something, then leave it for a couple of days. This way, you can detach from it for a bit, and be critical again. Be critical about what you have written: is it actually necessary for the report?
- Keep in mind that the report will be available through the library of the University of Twente and that there is Open Access to everyone.

4.2 Assessment of the BSc thesis assignment

The final grade for the BSc Thesis Assignment is determined based on the final report and the final presentation. The process of getting to the final report will also be taken into consideration in your grade, together with your functioning and demeanor at the external company. An overview of the criteria is presented in appendix 3.

4.2.1 The examination session

The final report will be discussed in a private examination session (+/- 1 hour) in which you are asked to provide a short elaboration on your report and the results. In addition, all the supervisors and the second assessor can ask questions. After this session the supervisors privately discuss your grade, while you wait in another room. They will invite you in to present and explain the final grade for your BSc Thesis Assignment.

The general format of the examination is as follows:

1. Introduction and short explanation by the student about the BSc thesis project (+/- 10 minutes)
2. Questions to student + discussion with student by committee (+/- 30 minutes)
3. Assessment and grading by the committee (+/- 10 minutes)
4. Feedback to the student and announcement final mark (+/- 10 minutes)

In consultation with your UT supervisor you can organize a presentation to present and share your results with other students or employees. This presentation would be separate and is not an replacement for the examination session – and has no role in the assessment.

4.2.2 *Insufficient assessment*

An insufficient assessment could be awarded in the following situations:

- When both the UT supervisor and the external supervisor feel like you have not achieved a sufficient final result.
- When the UT supervisor thinks that the (final) concept report is of such quality that it is not feasible to finish before the deadline
- When the final report is of questionable quality combined with a weak performance during the examination session
- When the report is handed in too late

In case of an insufficient grade the mobility coordinator will be consulted to determine whether or not an extra assignment would suffice or whether an entire new BSc thesis assignment needs to be executed.

A few scenarios can be distinguished in which an insufficient result for the thesis proposal (module 11) and/or BSc-thesis project occurs:

- Thesis proposal (module 11) insufficient: opportunity to upgrade the thesis proposal within a period of 2 weeks, maximum grade after update is 6.0. Meanwhile, the student is allowed to continue with module 12, but may need to adjust the planning. If the thesis proposal continuously is insufficient: module 12 has to be terminated and the student has to find another assignment.
- Thesis proposal (module 11) sufficient, but result module 12 insufficient: one improvement of the thesis could be sufficient. Another option is an additional assignment, formulated through consultation between the UT supervisor and the coordinator of module 12. If the result is still insufficient, a new BSc-thesis project has to be carried out. This requires writing a new thesis proposal, but different rules apply. Since the student already passed module 11, the new thesis proposal is no component of module 11. Instead, the thesis proposal is assessed as go/no go decision within the start-up period of the new attempt for module 12. This means that no formal grading for the thesis proposal is registered.
- Thesis proposal (module 11) insufficient and module 12 insufficient: no opportunity for an improvement or additional assignment will be offered. The student needs to start all over again by making a proposal, which is assessed as a component of module 11, and has to carry out a new BSc-thesis project (module 12).

5 Complementary regulations

When you execute your final assignment, a lot of things will be different than during the rest of your program. Especially when you are going abroad, you will have to arrange a lot of things yourself. For example: what to do with your room here in Enschede, learning a new language, etcetera. An assignment will also carry some additional costs in most cases. Below you will find a few UT-regulations that may help you.

5.1 Compensation

Most companies in the Netherlands will offer some form of compensation for the execution of an assignment. When this compensation is (relatively) high and you still fall under the old loan system (before 1 September 2015), it may have influence on your students financing (studiefinanciering), especially when you already had a job during the year. The student counselors (Vrijhof, third floor, room 311, tel. 2035) have the most recent information on this topic. Please contact them (**in advance**) when you have the feeling your income may be too high, and you may therefore lose your right for financing and the OV-card (public transport card). Non-Dutch students who have been awarded a scholarship (for instance UTS) are not permitted to receive a compensation for the execution of the Bachelor Thesis. Please check the scholarship contract you have signed before arriving at the University of Twente.

5.2 Funding for assignments abroad.

Foreign assignment often come at a higher cost. Think about taking a language course, visa costs, travel expenses and renting a room. When the compensation of the company is not sufficient, you almost always are able to get some funding.

When you have a gap in your budget you can ask for funding via Mobility Online. During your entire program you can ask for funding twice, once during the Bachelor and once during the Master. For an Erasmus grant the same rules apply, but can apply more often to a maximum duration of funding of twelve months during each phase. More information can be found here: <https://www.utwente.nl/en/study-abroad/internship/>.

To limit the amount of fund requests, we highly recommend to sublet your room or terminate the rent. In case you want to sublet, do so via de website of the Student Union: <https://su.utwente.nl/kamers/>. This website also provides example contracts for subletting and terminating.

Via Mobility Online you can find the link for the UT travel insurance. You are obligated to make an insurance contract (FREE) for every experience abroad, and to register your stay abroad. Since you are obligated the funding provider holds the right to withhold funding if you do not register and insure yourself (also see 5.3 Insurance)

If you have plans for a very expensive stay abroad, you can still have trouble with paying for it, even though you have funding. In that case you can check out if there are any special funds for your situation via the website of the 'Beursopener' provided by Nuffic: www.beursopener.nl.

Finally you can end the student registration on your OV-card (for public transportation), which will reimburse you with € 98 per month via DUO. For details please check: www.duo.nl. If you want to make use of this, the form needs to be signed by one of the coordinators of the BSc Thesis Assignment.

5.3 Insurance

Some organizations have their own collective insurance for students that do assignment with them (mostly liability insurance, and sometimes accident insurance). However, some companies assume that the UT has accident insurance for their students. This is NOT the case. Only when the assignment is conducted abroad the UT provides accident insurance.

The UT does have additional liability insurance. This means that at the working place (both in the Netherlands and abroad) you are insured for liability (for example if you cause any damage to valuable machines or when you physically injure someone). You will receive a policy of insurance (Dutch or English). This insurance is not valid outside of working hours and is in addition to your own liability insurance.

The insurance for students that go abroad is only valid during the actual period of working on the assignment, if you decide to travel afterwards or have a holiday, it is not valid anymore. The UT insurance can be considered a safety net for your own travel insurance (because normally travelling insurance does not compensate in case of an internship if anything happens). If you make any medical expenses during your stay abroad, the travel insurance is an addition to your primary health insurance.

As mentioned before, the travel insurance is linked to a registration system. It is of the utmost importance to register when you go abroad. In case of calamities it needs to be clear where students or employees are, in order to be able to provide help.

Appendix 1: Student Timeline for modules 11 and 12

The 3 phases of the Bachelor Thesis Assignment.

Phase 1. Preparation (period: module 8 until start of module 11)

What	Who	When
Attend information session	B2 students	Spring of second Bachelor Year.
Attention to the searching process of the BSc Thesis Assessment and developing competences to carry out an job interview	Students module 8	Module 8
Registration Mobility Online	Student	Assignment in the Netherlands: at least 6 months before the start of module 11. Assignment abroad: 12 to 9 months before the start of module 11.
Conversation with department coordinator Water, Traffic or Construction	Student	After registration in Mobility Online and after handing in the assignment in preparation for your conversation with the Department coordinator, you will receive an invitation for an intake conversation
Choosing assignment In consultation with department coordinator of Water, Traffic or Construction.	Student Department coordinator	You are urged to have an assignment at the very last in the first week of module 11, but preferably a bit earlier.

Phase 2. Module 11 – 10 weeks

What	Who	When
<p>Entrance requirement module 11 and 12: GO / NO GO 1 moment</p> <p>Approval Bachelor Thesis Assignment by department coordinator and assignment of the UT supervisor: het GO / NO GO 2 moment</p> <p>Filling out proposal form in Mobility Online</p>	<p>Programme coordinator CE Eva Blokhuis</p> <p>Department coordinator</p> <p>Student</p>	<p>Before the start of module 11 the entrance requirements are checked per student (passing module 1-8).</p> <p>After GO / NO GO 2 and allocation of UT supervisor.</p>
<p>Working on proposal Student has a general idea of the assignment and works on the proposal of the BSc Thesis with help of the classes of module 11.</p>	<p>Student</p>	<p>Week 2 t/m 5 of module 11</p>
<p>Progress check</p> <p>JOINT consultation between the UT supervisor, the external supervisor AND the student about the assignment and the initial version of the thesis proposal. Student takes initiative for this consult and makes sure to hand in the report of this consultation in time with the module coordinator of module 11.</p>	<p>Student UT supervisor External supervisor Module 11 coordinator</p>	<p>Week 6 of module 11</p>
<p>Working on proposal</p>	<p>Student</p>	<p>Week 7 & 8 of module 11</p>
<p>Start Bachelor Thesis Assignment</p> <p>Student will start with the execution of the assignment after the explicit approval of the supervisors.</p>	<p>Student UT-supervisor External supervisor</p>	<p>Week 9 of module 11</p>

When they approve your proposal, and only then, you can start your assignment: <u>the GO/ NO GO 3 moment</u>		
Deadline handing in final proposal	Student	Week 10 or week 11 of module 11

Phase 3. Module 12 – 10/11 weeks

What	Who	When
Guarding progress / Planning progress The student keeps in touch with both supervisors and is responsible for planning meetings to guard the progress of the assignment.	Student	During module 12
Handing in final concept report with supervisor BE AWARE: The UT supervisor is free to ask for a concept of the thesis in an earlier stage than week 8!!	Student	Week 8 of module 12
Schedule a date for the examination session* Schedule the date for the examination session in consultation with your UT supervisor, second assessor and external supervisor.	Student	Week 8 of module 12 When you want to have the examination session in week 10, make sure you have sufficient time between handing it in and having the actual session (consult!)
Receiving second round of feedback on the concept report.	Student Supervisor(s)	Week 9 of module 12
Deadline handing in BSc-thesis evaluation assignment This evaluation assignment is part of module 11 and needs to be handed in via module 11 on Canvas.	Student Module 11 coordinator	Week 10 module 12 (counts for module 11)
Deadline handing in final	Student	Week 10

version of the thesis report with the UT supervisor, the second assessor and the external supervisor.		
Examination session	Student Internal Supervisor External Supervisor Second Assessor	Week 10* of module 12. or week 11** (extension week)

*+ 1 week for a BSc Thesis Assignment in quartile 4

**For BSc Thesis assignments abroad it is possible to (in consultation of course) have the examination session at a later moment (shortly after arriving back in the Netherlands for example).

Appendix 2: Assessment BSc Thesis Assignment

The final grade of the BSc Thesis assignment, which is determined during the examination session, is based on the quality of the final report, the process (functioning at company) and the performance during the examination session.

Awarding credits.

To actually receive credits for the final semester (module 11 and 12), you have to comply with the following:

- You have to have spent at least ten weeks with the external organization.
- The final report is handed in with the UT supervisor and the external supervisor.
- The examination session has taken place and the final grade is sufficient.
- You digitally filled out the evaluation forms of module 12 and sent them in.

Assessment criteria BSc Thesis Assignment (module 12)

Below the assessment criteria for module 12 are described. Information on the assessment of the preparation of the BSc Thesis Assignment and the evaluation assignment are provided in the manual of module 11.

Content: level of research / design

- Grasp of the topic
- Depth (detail in execution, use of literature)
- Elaboration of the research questions
- Substantiation/argumentation of the conclusions and recommendations (link to goal and research questions).
- Creativity/ inventive: extent to which the student independently suggests ideas and topics.

Final report

- Care
- Diligence
- Readability
- Language related aspects (spelling / style)
- Summary
- Clarity / sharpness of formulations
- Structure
- Consistency
- Figures and tables
- Reference list/ references in text

Process of graduation

- attitude
- independence
- dedication/enthusiasm
- collaboration
- way of communicating
- processing criticism/feedback
- functioning within the organization/company
- attitude during consultations (active/passive)

- extent to which the plan relates to the preparatory report and possible reasons for deviation.
- Time in which the BSc Thesis Assignment was finished.

Examination session

- Clear explanation of the assignment, the process and the obtained results.
- Response to questions of the supervisors
- Extent to which the students shows expertise in relation to the topic.

The examination session will usually include rounding a grade up or down. The assessment criteria are leading in determining the final grade.