



STUDIEVERENIGING KOers  
CONSTRUCTIEF ONTWERPEN

# Graduation Guide

## SD @ TU/e

STRUCTURAL DESIGN | ARCHITECTURE, BUILDING & PLANNING

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STRUCTURAL DESIGN | ARCHITECTURE, BUILDING & PLANNING

Version | November 2018

Department of the Built Environment  
Master Program | Architecture, Building & Planning (ABP)

Eindhoven University of Technology

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## 1 | In general

The graduation is the final course to be followed to finish the master program Structural Design at TU/e. The total scope of the graduation amounts 45 ECTS; thus, an individual study charge of 1344 hours. The credits for the graduation are obtained after examining the final presentation and graduation project report.

In order to kick-start your graduation project, Study association KOers and the Structural Design Unit will have 2 information meetings during an academic year in which a step-by-step approach and guideline will be presented. Additionally, this document can serve as a guideline and checklist.

*Note that this document is merely a guideline and interpretation and summary of the exam regulations composed by KOers in collaboration with the Unit Structural Design. This is not an official published regulation and no rights can be derived from this document. Additionally, the document is subject to changes, make sure you use the most recent version.*

## 2 | Application & participation

### Requirements

Every student who would like to start graduating should meet the requirements:

- The student has a Bachelor Degree Architecture Building and Planning or passed the intermediate program successfully.
- The examination committee has approved the study plan of the student.
- The student has at least accumulated 55 ECTS and no more than 20 ECTS remain open

Regarding this last requirement it should however be noted that it is strongly advised to finish all courses before starting the graduation project.

### 2.1 | Preparation

When the students meet the requirements as mentioned in the previous section, he or she may start with the graduation project. Preparation of the graduation project preferably starts during the last quartile before the graduation project is started officially. Visit the information meetings from KOers and the Structural Design unit and start orientating on the graduation possibilities within the SD unit.

#### 2.1.1 | Graduation topics

Graduation projects may be research or design projects, or a combination of both. Projects should be of sufficient complexity and academic in nature to satisfy the requirements of a master title at the university level. Ideally, projects contribute to the strategic areas of the university and/or research programs of the department.

The unit Structural Design offers broad possibilities in graduation subjects which are offered in several Chair groups and underlying chairs:

- Innovative Structural Design (ISD)
- Applied Mechanics and Design (AMD)
- Steel and Aluminium Structures (SAS) *including:*
  - + Timber Structures
- Concrete Structures & Masonry structures (CMS) *including:*
  - + Special concrete constructions
  - + Sustainment of concrete structures

Students may come up with a topic themselves, decide on a topic within a certain Chair together with a professor or choose one of the 'ready-made' topics that professors/chairs offer.

The following tips may be of help at finding a topic:

- Orientate which options (choices) there are.
- Shop (visit several Professors) to find specific topics for your graduation project.
- Check the list of publications of professors
- Check (library) graduation reports from last year
- Check and ask fellow students who already have started
- Visit mid-term or end colloquia.
- Talk to PhD students

### 2.1.2 | Guidelines for graduating with two or more students

Overall, the graduation project is an individual project. However, it is allowed to do it with two or more students. The thesis should be composed in such a way that it is recognizable and demonstrable what the various separate contributions were from the concerned authors that could be assessed. The members of the Graduation Supervision Committee see to it that this will be the case and that this guideline becomes apparent in the thesis.

### 2.1.3 | The Graduation Supervision Committee

On commencement of the graduation project, the student must initiate the establishing of a Graduation Supervision Committee consisting of at least three members authorized to conduct the Final Examination, of whom at least two are members of the academic staff of the ABP Department of the TU/e.

The committee is constituted as follows:

1. At least one member of the Graduation Supervision Committee must be a Professor or Associate Professor and occupy a Chair or Associate Professorship in the competence area of the graduation project.

*The Professor or Associate Professor is chairman of the Graduation Supervision Committee.*

*The chairman is mandated by the exam committee to compile the Graduation Supervision Committee and to lend examination authority to external members (Exam regulations Article 1.3, 5 g) under the conditions formulated below.*

2. A faculty member with relevant expertise related to the topic of the graduation project.
3. A third member with relevant expertise related to the topic of the graduation project. The third member of the Graduation Supervision Committee can be an external expert. The external expert must be a subject specialist who does not work in the ABP Department of the TU/e.

Normally the external expert must be a University graduate. However, in special cases a HBO diploma is acceptable if the external expert possesses a demonstrable, high level of expertise. The chairman of the Graduation Supervision Committee makes sure that the external expert meets these requirements.

Requests to deviate from the above must be submitted to the Examination Committee of the ABP Department of the TU/e, with argumentation and with the approval of the chairman of the Graduation Supervision Committee. The form to request an exception/approval of an external member is provided in attachment

The members of the Graduation Supervision Committee evaluate the graduation project. Any persons who have been involved in the graduation process may act only as advisors. They have no formal influence on the assessment.

The possible members of the Graduation Supervision Committee within the unit of Structural Design is shown below, subdivided in the several chairs:

STRUCTURAL DESIGN	Professor (Hoogleraar)	Associate Professor (Universitair hoofdocent)	Assistant Professor (Universitair Docent)
Innovative Structural Design (ISD)	prof.Dr.-Ing. P.M. Teuffel	dr.ir. S.P.G. Moonen	ir. R. Blok
			ir. A.P.H.W. Habraken
			ir. A.D.C. Pronk
Applied Mechanics in Design (AMD)	prof.dr.ir. A.S.J. Suiker	dr.ir. H. Hofmeyer	dr.ir. E. Bosco
Steel and Aluminium Structures (SAS)	prof.ir. H.H. Snijder (Steel)		ir. B.W.E.M. van Hove (Steel)
	prof.dr.ir. J. Maljaars (Aluminium)		ir. W. de Groot (Timber)
Concrete & Masonry Structures (CMS)	prof.dr.ir. T.A.M. Salet (Concrete)		dr.ir. F.P. Bos (Concrete & Glass)
	prof.ir. S.N.M. Wijte (Sustainment of Concrete Structures)		
	prof.dr.ir. J.L.I.F. Belis (Glass)		

## 2.2 | Application

Students eligible for entering the graduation phase need to subscribe by:

1. Handing in their Personal Study Plan to the secretary of the Examination Committee & get it approved. (see attachment 1 | Form Personal Study Plan)
2. Enrolling in Osiris for the course 7K45M0 Graduation Project Structural Design, before the closing of the registration term of the particular starting quartile.
3. Inform the secretariat of Structural Design that you start your graduation project and mention who is in your Graduation Supervision Committee (as far as you already know).

## 3 | Graduation project & Planning

### 3.1 | Starting your graduation project

Whenever the student has prepared his/her graduation project by choosing a subject, establishing a Graduation Supervision Committee, and submitting the required forms and approvals, the student can start working on the actual graduation project.

In order to streamline your graduation process, it is strongly advised to determine upon several aspects together with your supervisors:

Plan with your Graduation Supervision Committee your graduation process

- How long are you planning to work on your graduation project (3 quartiles/1year)
- How many colloquia will you be having (see also 3.2)
- What are the provisional dates for the colloquia
- What are the global products which need to be presented during these colloquia
- Is it desirable to write a graduation plan? (for a guideline see attachment 4)
- What will be the scope of your literature study & when must this be finished (will the literature study be an extensive part of your graduation project or more like a necessary introduction to your graduation topic)
- Plan your meeting frequency & dates upfront

### 3.2 | Colloquia

During the graduation project the student holds at least two public colloquia. These are intended to stimulate interaction between master students. PhD students, postdocs and members of the department.

- Starting colloquium | Presentation of a detailed plan for the graduation project & possible literature study  
and/or:
- in between colloquium | Intermediate presentation with a formative assessment.
- Final colloquium | Final presentation with a summative assessment.

Final colloquia are professional meetings and must be public and announced in advance. The final colloquium has to be scheduled by the secretariat of SD. This is to make sure the End Colloquium is in everyone's agenda and the committee has the forms that have to be filled in.

Presentation and discussion takes place in English. The quality of the work that a student presents is part of the assessment. Directly after the final colloquium a closed meeting will take place with the Graduation Supervision Committee and the student. The student is informed on the final evaluation result and a motivation of the results (possibly based on the assessment criteria from the next section).

A report of the graduation project consists of a written thesis, possibly supplemented by illustrations or other media. The thesis must be submitted both as 'hard copy' and as 'digital document', namely in PDF format. The deadline will be before the end colloquium in consultation with the Graduation Supervision Committee. For more information on the requirements regarding the graduation thesis see attachment 5 | Graduation Thesis.

The secretariat archives a digital version of your final thesis, on this thesis there is an A - or O – number given by the secretariat. The secretariat will hand over your signed thesis and the assessment form graduation project 7K45M0 to the exam committee.

### 3.4 | Assessment

In the evaluation of the graduation project the following aspects are taken into consideration:

- The product: the quality of the content of the project,
- The process: the organization and implementation of the project, and their planning,
- The presentation: the manner of presentation and reporting.

If weighing factors relating to these aspects must be taken into account, they must be made known in advance and be recorded in the graduation plan. If that has not been done, there is no question of weighing factors being applied in the evaluation of the aspects mentioned. If weighing factors don't play a role in the final evaluation, the final mark will be given by the graduation supervising committee to the student. The evaluation entails three aspects: product, process and presentation. Each member of the Graduation Supervision Committee carries the same weight in the assessment. The student who is graduating is informed in writing of the arguments that have formed the basis of the assessment.

The Graduation Supervision Committee uses the assessment criteria tables as shown below.

**Product / Quality of research and/or design**

Assessment Criteria	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Thoroughness and inventiveness</b>	The Master's thesis is an excellent contribution to a concrete product, design, model, theory or scientific discussion.		Student is perfectly able to introduce new, innovative and original concepts and to contribute to professional and scientific debate.		Mostly reproducing existing insights and knowledge, be it in a satisfactory way.	Making insufficient use of existing knowledge and insights
<b>Literature review</b>	Profound and critical evaluation of literature and demonstration of high student's skills in integrating this literature.		Well-explained and critical evaluation of the latest literature. More than average depth.		Limited depth and use of earlier academic materials.	No depth, no use of earlier academic materials. Unclear and inadequately explained.
<b>Research/design method</b>	Excellent demonstration of research and design methodologies. Truly scientific and professional.		Well-explained and well justified, using the right research and design methodologies.		Limited explanation that is justified by using academic literature and by showing some form of methodical working.	Unsystematic, not validated and unclear. No link to the correct research and design methodologies.
<b>Conclusions &amp; recommendations. Contribution to theory &amp; practice</b>	Excellent conclusions and recommendations. Very valuable contribution to theory and practice.		Clear, relevant and very critical conclusions and recommendations. Valuable contribution to theory and practice.		Clear and rather relevant, but short in the argumentation of the conclusions.	Vague, irrelevant, not able to analyze and discuss the results.

**Process / Working and learning process**

Assessment Criteria	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Time management</b>	High level of quality within the time schedule, as either stated in the graduation plan or as adapted along the process in agreement with the supervisor/s.		Good level of quality within the time schedule, as either stated in the graduation plan or as adapted along the process in agreement with the supervisor/s.		Sufficient level of quality within the time a researcher or designer might be expected to reach that level.	Insufficient level of quality within the time a researcher or designer might be expected to reach that level, even taken into account unexpected delays.
<b>Independence and professional skills</b>	High degree of independence and excellent professional skills.		Independent; very good demonstration of research and/or design skills.		Limited communication skills. To some extent skilled in working independently, incorporating feedback and / or cooperating.	Inadequate to work independently, incorporate feedback and cooperate with others.
<b>Academic Attitude</b>	Excellent attitude. Strives for personal development. Very committed and enthusiast. Open to discussion and personalization of feedback.		Independent; very good demonstration of skills.		Limited commitment and enthusiasm. Little initiative and little involvement during meetings.	Not the attitude to strengthen his/her personal development. Very passive attitude in meetings.

**Presentation / Written and oral communication**

Assessment Criteria	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Report: writing skill, structure and clarity</b>	Excellent report. It conforms to high scientific and professional standards. Additional and limited work can bring the result to a professional-scientific publication.		Professional report with a very clear and accurate structure. Well-founded argumentations. Showing insight in scientific and professional disputes.		Satisfactory report, consistent and with clear argumentation. Adequate readable text.	Poor, with illogical structure. Partly unclear and ambiguous text with incorrect use of notions and/or graphics.
<b>Oral presentation and defense</b>	Excellent presentation and defense. Eye-opener on the subject. Accurate and rich details without going off-topic.		Very clearly taking much care of details. Good answers to questions and good in discussions. Gives much insight in the subject matter. Very good presentation.		Clear, but limited in content and based on the reported findings. Satisfactory.	Vague and unclear presentation and defense.



## 5 | After the graduation project – Registering for the exam meeting

When you are about to finish your Bachelor or Master program, you have to apply for the so-called final exam in Osiris. The Examination Committee will check whether you have fulfilled the requirements of the program and will decide if you pass the final exam. This takes place during a meeting of the Examination Committee. If you have passed the final exam you will be invited to one of the diploma award ceremonies to receive your diploma.

For more information please see the TU/e website:

<https://intranet.tue.nl/en/university/departments/built-environment/education/ecb-for-you-and-me/regulations/application-final-exam/>

### Requirements for the meeting of the Examination Committee:

Students must meet the following requirements before a student's graduation is considered in the meeting of the Examination Committee.

- The student must register at least two weeks before the meeting of the Examination Committee via internet at <https://osirisbo.tue.nl>. See the closing dates that are listed there for registering for the Final Examination.
- The assessed and signed thesis (hard copy + Pdf version) must be submitted to the Education Office at least 2 weeks before the meeting of the Examination Committee
- The thesis must have been checked for fraud with the software that is commonly used on the TU/e. A proof of the check has to be handed in.
- All the assessments of course elements, project work (including the graduation project), and portfolio elements must be submitted to the Education Office at the latest two weeks before the meeting of the Examination Committee.
- The official form for the assessment of the graduation project (Annex 7b of these Examination Regulations) must be submitted to the Education Office at least 1 week before the meeting of the Examination Committee.
- All requirements of the graduation project must have been met
- The final colloquium must have been held.

The Examination Committee checks if all requirements are met. If this is the case it pronounces that the student has passed and will receive the Masters degree. This examination shall take place without the presence of the student.

### What the student has to hand in:

- A hard copy of his/her thesis (signed by the chairman of the graduation committee) at the secretary of the Examination Committee. This must have been submitted at least two weeks before the meeting of the Examination Committee.) and have been checked for fraud. A proof of the latter must be present. Up to one month after the meeting of the Examination Committee it's possible to pick up your hard copy thesis at the reception of Vertigo.
- A digital version of the thesis in PDF format (Adobe) at least two weeks before the meeting of the Examination Committee by e-mail or for example SURFfilesender or WeTransfer to [secr.examencommissie@bwk.tue.nl](mailto:secr.examencommissie@bwk.tue.nl). Not on CD, DVD or USB-stick. The digital version will be published on <http://repositorv.tue.nl/> Note: If the final report is not fully accessible to public, the student can contact the secretary of the Examination Committee (embargo regulation).

According to the Education and Examination Regulations, there are at least three opportunities per year for taking the Final Examination. In principle, the Examination Committee convenes a meeting on one of the last five working days of every month, excluding the academic holidays, at which it determines the result of the final examinations of the students who have registered for it in accordance with the rules. The dates of these meetings are announced centrally on behalf of the Examination Committee prior to the beginning of the academic year.

The student receives the final diploma (in Dutch and English), only if the student has registered, and the Examination Committee has declared that the student has passed. The diploma award session will take place six times a year. A week before the ceremony you will receive by e-mail an invitation with information about the exact time.

## 6 | Step-by-step graduation

### Checklist at the start of your graduation project

1. Visit the information meeting organised by the Unit & KOers.
2. Hand-in your Personal Study plan at the exam committee and get it approved
3. Find a graduation subject
  - a. Look at the available project on the site of the unit
  - b. Look at the public memo boards for available projects
  - c. Plan an information meeting with a group of students with a professor
4. Plan a meeting with your professor to 'claim' a project and arrange a graduation committee
5. Inform the secretariat of Structural Design that you start your graduation project and mention who is in your Graduation Supervision Committee (as far as you already know).
6. Plan a meeting with your graduation committee / the head of the graduation committee to plan your graduation:
  - a. The timespan of your graduation project
  - b. The presence of a literature study and starting colloquium
  - c. The moment of your in-between colloquium and the required progress of the project by then
  - d. The moment of your end colloquium and global end level
7. Decide upon the frequency of your meetings and plan the dates ahead.

### Checklist during your graduation project

8. Make sure your Graduation Supervision committee is complete and if necessary get your external member approved by the examination committee with the corresponding form.

### Checklist at the end of your graduation project

9. Discuss with your Graduation Supervision Committee the aspects on which you are graded and the possible difference in 'weight' of the various aspects of your graduation (Process, Product and Presentation). Discuss the use of the assessment aspects.
10. Plan & announce your end colloquium (announce it also at KOers)
11. Sign in for the Exam Meeting
12. Hand in the approved thesis with signature at the educational office one week before the meeting of the Examination Committee
13. Hand in a digital version of the thesis in PDF format (Adobe) at least one week before the meeting of the Examination Committee by e-mail or for example 'WeTransfer to [ec.be@tue.nl](mailto:ec.be@tue.nl).

## Attachments

1 | Form Personal Study Plan

**TU/e Department of the Built Environment**

**Personal Study Plan**

**MSc Architecture Building and Planning**

Name Student	
Student ID	
Name Mentor	

<b>Core courses ( 15-25-30-40-55 or 60 ECTS )</b>				
Code	Name	ECTS	Year	Quartile
<b>Total ECTS Core courses:</b>				

<b>Specialization electives ( 5-20 or 30 ECTS )</b>				
Code	Name	ECTS	Year	Quartile
<b>Total ECTS Specialization electives:</b>				

<b>Free electives (15-20 or 30 ECTS )</b>				
Code	Name	ECTS	Year	Quartile
<b>( If applicable: )</b>	<b>International Experience:</b>	<b>ECTS</b>	<b>Year</b>	<b>Quarter</b>
-	Internship			
-	International semester			
-	Research visit for Graduation Project			
<b>Total ECTS Free electives:</b>				

<b>Graduation Project (45 or 60 ECTS )</b>				
Code	Name	ECTS	Year	Quartiles
<b>(Total minimum ECTS exam program: 120)</b>				

**TU/e Department of the Built Environment**

**Personal Study Plan**

**MSc Architecture Building and Planning**

<b>Professional Skills Assessment</b>	<b>Done</b>	Yes	No
<b>Code of Scientific Conduct</b>	<b>Signed</b>	Yes	No

**Approval courses and projects**

<b>Short motivation</b>
In case the plan is not the combination of the core courses and the specialization electives of one core program, please motivate or provide the reasons why it meets the learning objectives of the master program ABP ( <a href="#">page 10</a> of the Program and Examination Regulations MSc ABP 2017-2018).

<b>Assessment by the mentor</b> (please circle)	Positive	Negative
Motivation if negative assessment		
<b>Signature mentor</b>	Date:	

<b>Signature student</b>	Date:	

<b>Decision Examination Committee</b> (please circle)	Approved	Rejected
<b>Signature Examination Committee</b>	Date:	

**Please hand in this form (signed by your mentor) to the secretary of the Examination Committee on weekdays between 12.00 and 13.30 hrs, ESA Service Desk VRT 2.12.**

## 2 | Approval external member graduation supervision committee

## Application form

### Approval external member graduation supervision committee

The undersigned, chair of the graduation supervision committee of:

Student name: .....

Student identity number: .....

requests the Examination Committee of TU/e Department of the Built Environment for its approval to add:

Name: .....

Company / Faculty / University: .....

as external member to the graduation supervision committee.

The undersigned states that the above mentioned candidate has an academic background and that he/she is an acknowledged expert in the competence area of the graduation project. This statement is based on the candidate's prior education and work experience.

Motivation to add an external member to the graduation supervision committee:

1. ....

2. ....

3. ....

The complete graduation supervision committee consists of the following members:

1. ....

2. ....

3. ....

4. ....

External member from TU/e or TUD (highest level of education).

**For external members that have been awarded an academic degree by a higher education institute other than TU/e or TUD a curriculum vitae needs to be added to this application.**

Signature: .....

Chair graduation supervision committee

Date: .....

---

Approval Examination Committee Department of the Built Environment

Signature: .....

dr.ir. A.D.A.M. Kemperman, chairman

Date: .....

### 3 | Assessment form graduation project 7K45M0



## Assessment Form Graduation Project ABP

Name student: ..... Student number:.....

Course code: ..... Date: .....

Thesis title:.....

Chair of the supervising committee: .....

2<sup>nd</sup> supervisor (name):.....

3<sup>rd</sup> supervisor (name):.....

Signature chair of the supervising committee:.....

Criterion		Final grade
Product	Quality of research and/or design Weight <sup>1)</sup> .....% Grade <sup>2)</sup> .....	.....
Process	Working and learning process Weight <sup>1)</sup> .....% Grade <sup>2)</sup> .....	
Presentation	Written and oral communication: Weight <sup>1)</sup> .....% Grade <sup>2)</sup> .....	

1) Weight factors for the 3P's: minimum for each factor is equal to 15%, maximum for each factor is equal to 70%.

The weight factors must be specified in the graduation plan.

2) The assessment of the graduation project shall be rounded to the nearest half grade on a scale of 0 to 10.

### **Written motivation (obligatory)**

Specify in text what went well:

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Specify in text what could be improved:

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**Confidentiality:**

The graduation supervisor declares that the final thesis of the graduation is (please tick):

- public
- confidential for max. 1 year  
*Note: include the publication date (one year from now) in the report*
- confidential after 1 year \*  
\* Two versions must be handed in at the secretariat of the Examination Committee. A public version and a confidential version. After the exam meeting you can pick up the confidential version at the secretariat of the Examination Committee.  
*Note: a public version of the thesis is required for publication*

*Explanation: the graduation reports will be made public at the website of the TU/e. In addition the printed version, handed in before graduation, will be made available in the Library of TU/e; in the first and third case immediately and in the second case after a period of one year.*

### Assessment of the Master Graduation Project

Assessment can be by marks on a scale of 1 to 10, or can be indicated graphically by ticking on a continuous scale. Either way the three forms below have to be filled out.

#### Product / Quality of research and/or design

Assessment Criteria	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Thoroughness and inventiveness</b>	The Master's thesis is an excellent contribution to a concrete product, design, model, theory or scientific discussion.		Student is perfectly able to introduce new, innovative and original concepts and to contribute to professional and scientific debate.		Mostly reproducing existing insights and knowledge, be it in a satisfactory way.	Making insufficient use of existing knowledge and insights
<b>Literature review</b>	Profound and critical evaluation of literature and demonstration of high student's skills in integrating this literature.		Well-explained and critical evaluation of the latest literature. More than average depth.		Limited depth and use of earlier academic materials.	No depth, no use of earlier academic materials. Unclear and inadequately explained.
<b>Research/design method</b>	Excellent demonstration of research and design methodologies. Truly scientific and professional.		Well-explained and well justified, using the right research and design methodologies.		Limited explanation that is justified by using academic literature and by showing some form of methodical working.	Unsystematic, not validated and unclear. No link to the correct research and design methodologies.
<b>Conclusions &amp; recommendations. Contribution to theory &amp; practice</b>	Excellent conclusions and recommendations. Very valuable contribution to theory and practice.		Clear, relevant and very critical conclusions and recommendations. Valuable contribution to theory and practice.		Clear and rather relevant, but short in the argumentation of the conclusions.	Vague, irrelevant, not able to analyze and discuss the results.

**Process / Working and learning process**

<b>Assessment Criteria</b>	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Time management</b>	High level of quality within the time schedule, as either stated in the graduation plan or as adapted along the process in agreement with the supervisor/s.		Good level of quality within the time schedule, as either stated in the graduation plan or as adapted along the process in agreement with the supervisor/s.		Sufficient level of quality within the time a researcher or designer might be expected to reach that level.	Insufficient level of quality within the time a researcher or designer might be expected to reach that level, even taken into account unexpected delays.
<b>Independence and professional skills</b>	High degree of independence and excellent professional skills.		Independent; very good demonstration of research and/or design skills.		Limited communication skills. To some extent skilled in working independently, incorporating feedback and / or cooperating.	Inadequate to work independently, incorporate feedback and cooperate with others.
<b>Academic Attitude</b>	Excellent attitude. Strives for personal development. Very committed and enthusiast. Open to discussion and personalization of feedback.		Independent; very good demonstration of skills.		Limited commitment and enthusiasm. Little initiative and little involvement during meetings.	Not the attitude to strengthen his/her personal development. Very passive attitude in meetings.

**Presentation / Written and oral communication**

Assessment Criteria	Exemplary 10	9	Good/Proficient 8	7	Satisfactory 6	Unsatisfactory 5 or lower
<b>Report: writing skill, structure and clarity</b>	Excellent report. It conforms to high scientific and professional standards. Additional and limited work can bring the result to a professional-scientific publication.		Professional report with a very clear and accurate structure. Well-founded argumentations. Showing insight in scientific and professional disputes.		Satisfactory report, consistent and with clear argumentation. Adequate readable text.	Poor, with illogical structure. Partly unclear and ambiguous text with incorrect use of notions and/or graphics.
<b>Oral presentation and defense</b>	Excellent presentation and defense. Eye-opener on the subject. Accurate and rich details without going off-topic.		Very clearly taking much care of details. Good answers to questions and good in discussions. Gives much insight in the subject matter. Very good presentation.		Clear, but limited in content and based on the reported findings. Satisfactory.	Vague and unclear presentation and defense.

# TU/e Department of the Built Environment

## Declaration concerning the TU/e Code of Scientific Conduct for the Master's Thesis

I have read the TU/e Code of Scientific Conduct\*.

I hereby declare that my Master's thesis has been carried out in accordance with the rules of the TU/e Code of Scientific Conduct

Date

.....

Name

.....

ID-number

.....

Signature

.....

*\*See <https://www.tue.nl/en/university/about-the-university/integrity/scientific-integrity/>  
The Netherlands Code of Conduct for Academic Practice of the VSNU can be found here also.  
More information about scientific integrity is published on the websites of TU/e and VSNU*

## 4 | Guideline graduation Plan

## **Graduation Plan SD - Graduation Project Structural Design (7K45M0)**

De Mastertrack Structural Design aan de faculteit Bouwkunde van de Technische Universiteit Eindhoven wordt afgerond met een afstudeerproject (7K45M0). Voordat aan het afstudeerproject wordt begonnen dient een afstudeerplan te worden opgesteld, waarin op planmatige wijze het afstudeerproject wordt beschreven.

Aan de opzet van het afstudeerplan worden door de Unit Structural Design de volgende eisen gesteld.

### **1 Titelblad**

- a) Titel: AFSTUDEERPLAN van <naam student> voor het afronden van de Masterfase van de studie voor Bouwkundig Ingenieur aan de faculteit Bouwkunde van de TU/e, afstudeerrichting Structural Design;
- b) Naam, adres, telefoonnummer, identiteitsnummer van de student;
- c) Datum en eventueel versie;
- d) Namen van de leden van de afstudeerbegeleidingscommissie.

### **2 Inhoudsopgave**

De inhoudsopgave geeft de structuur van het afstudeerplan weer, ingedeeld naar hoofdstukken en paragrafen.

### **3 Inleiding**

De inleiding geeft de motivatie voor de keuze van de afstudeerrichting, en het afstudeeronderwerp, en beschrijft de maatschappelijke relevantie en de wetenschappelijke waarde.

Daarnaast wordt het eerdere projectwerk in de Masterfase kort samengevat, voor zover relevant voor de keuze van de afstudeerrichting en het afstudeerontwerp.

### **4 Plan van aanpak**

Dit hoofdstuk bevat de volgende paragrafen:

- a) Probleemstelling c.q. aanleiding;
- b) Doelstelling (onderzoek of ontwerp);
- c) Aanpak/werkwijze (methoden en technieken om het gestelde doel te bereiken);
- d) Eindresultaat: het afstudeerverslag met bijlagen;
- e) Eventuele risico's die onderkend worden (bijv. bij afstuderen in bedrijfssituaties).
- f) Competenties die bij het afstuderen verder worden ontwikkeld.

### **5 Projectfasering**

Dit hoofdstuk beschrijft de volgende fasen van het afstudeerproject:

- a) Begincolloquium;
- b) Fase 1 afstudeerproject (bijv. literatuurstudie of analyse);
- c) Fase 2 afstudeerproject (bijv. variantenonderzoek);
- d) Tussencolloquium;
- e) Fase 3 afstudeerproject (bijv. uitwerken gekozen variant);
- f) Eindcolloquium.

### **6 Projectbeheersing**

Dit hoofdstuk bevat de volgende paragrafen:

- a) Tijdsplanning van de fasen genoemd in hoofdstuk 5. Op de horizontale as de tijd; verticaal staan de fasen uitgesplitst in activiteiten.
- b) Kwaliteit: het afstudeerrapport moet voldoen aan de eisen gesteld in de Masterinformatie van de faculteit Bouwkunde TU/e; het afstudeerrapport wordt in de Engelse taal opgesteld. De omvang van het afstudeerrapport dient beperkt te blijven tot maximaal 100 pagina's exclusief bijlagen.



- c) Naast een Engelstalige samenvatting wordt aanbevolen een Nederlandstalige samenvatting toe te voegen.
- d) Informatie: schriftelijke en mondelinge informatie die over het afstudeerproject zal worden verstrekt, zoals: afstudeerplan, begincolloquium, tussenrapport, tussencolloquium, concept afstudeerrapport, afstudeerrapport en eindcolloquium; bijeenkomsten met de afstudeerbegeleidingscommissie, etc.

## REGELS VOOR CITEREN EN REFEREREN

Het gebruik van andermans werk is toegestaan, mits de bronnen duidelijk vermeld worden. Indien een student de geraadpleegde bronnen niet vermeld, maakt hij zich schuldig aan plagiaat en dat kan verstrekkinge gevolgen hebben. De volgende regels gelden bij citeren en refereren:

### 1 Overnemen van een mondeling uitgesproken tekst

In geval van een ‘quote’ kan de aangehaalde tekst cursief worden weergegeven, geplaatst tussen aanhalingstekens met vermelding van de naam van de geciteerde en indien bekend het jaar waarin de betreffende uitspraak is gedaan.

### 2 Overnemen van een schriftelijke tekst

In dit geval wordt de tekst (eventueel cursief weergegeven) aangehaald onder vermelding van de volgende gegevens (afhankelijk van bron):

- naam auteur(s), voorletter(s), titel van het boek, jaar van uitgave (tussen haakjes), uitgever (naam + plaats) en betreffende pagina’s (pp..-..);
- naam auteur(s), voorletter(s), titel van het artikel, naam van het tijdschrift, nummer en jaargang en betreffende pagina’s (pp..-..);
- naam auteur(s), voorletter(s), titel van het rapport of verslag, jaartal (tussen haakjes), uitgever (naam + plaats) en betreffende pagina’s (pp..-..);
- naam auteur(s), voorletter(s), titel van het artikel, naam van de krant, datum en betreffende pagina;
- titel van brochure/documentatie, jaar van uitgave, naam van uitgever (fabrikant, leverancier, organisatie e.d.);
- internet-website: http-adres en datum, auteur(s), voorletter(s), titel van de site, naam van bedrijf of instelling (voor zover bekend);

De literatuurlijst wordt achteraan in het rapport opgenomen na de conclusies en voor de bijlagen. De literatuurlijst krijgt géén hoofdstuknummer.

### 3 Overnemen van tekening of foto

In dit geval dient direct onder de overgenomen tekening of foto de naam van de tekenaar, c.q. fotograaf vermeld te worden. Zijn tekenaar of fotograaf niet bekend, dan moet de bron worden vermeld in de literatuurlijst en direct onder de figuur moet naar de bron worden verwezen. Bij publicatie van het werkstuk dienen er formeel rechten te worden vergoed aan deze derden. Dit geldt dus ook voor afbeeldingen die gekopieerd worden van internet als er copyright op rust.

Voor de vermelding van bronnen in de tekst zijn de volgende twee methoden het meest gangbaar:

- nummers tussen vierkante haken die verwijzen naar de literatuurlijst aan het eind van het werkstuk,
- naam/namen van auteur(s) en jaartal tussen ronde haken (naam, jaartal) die verwijzen naar de literatuurlijst aan het einde van het werkstuk.

***Let op: Voordat je verder gaat met je afstuderen dient je een definitief ondertekend exemplaar van je afstudeerplan bij het secretariaat SD in te leveren.***

## 5 | Graduation Thesis

### 5.1 | Guidelines for the thesis

A report of the graduation project consists of a written thesis, possibly supplemented by illustrations or other media. The thesis must be submitted both as 'hard copy' and as 'digital document', namely in PDF format.

The thesis **must** meet the following **requirements**.

- **Graphic and textual execution**  
The graphic execution of the thesis must be in accordance with the meaning and quality of its contents. It should always be clear that it concerns a thesis. Neither in the graphic design nor in the title or other remarks in the thesis the suggestion should be made that the thesis is a report of the regular staff of the department or research institutes of the TUe or a publication of an external institute or enterprise.
- **Title page**  
The thesis must be provided with:
  - A title (the (sub)title must indicate accurately the subject of the thesis; the thesis becomes accessible for other interested parties via key words taken from the title)
  - surname and initials of the student and his student number
  - graduation date
  - names of the members of the Graduation Supervision Committee
  - the name of the course and the University
  - students who bear a title or have already graduated from another education program are strongly advised not to mention those grades or titles in the thesis. The thesis will provide the author(s) with the grade of Master of Science or title of ir. (ingenieur) after all. Obtaining the exam already shows that the thesis is worth a Master of Science degree or ir. Title. Mentioning another title or grade arouses the wrong suggestion of the content of the thesis and the status of the author (s).
- **Summary**  
The Summary must summarize the main lines of the thesis. The Summary has to be readable independent of the thesis.
- **Table of contents**  
The Contents List reflects the structure of the thesis, organized in chapters and sections. Appendices, figures, tables, etc. must be listed separately.
- **Introduction**  
The Introduction states:
  - The problem definition/objective of the thesis,
  - The practical/social and/or theoretical/scientific importance of the thesis,
  - The organization of the thesis.
- **Approach**  
The thesis includes a description of the working method used. What theories / methods / techniques have been used to achieve the goal of the research and/or design, and how have these theories / methods / techniques been applied during the graduation project?
- **Activities**  
The activities that have led to the final results are discussed.
- **Results**  
The results obtained are presented in the thesis in a well-organized manner.
- **Discussion of the results**

- Conclusions, recommendations, and/or reflection  
If the graduation project lends itself to this, the most important conclusions resulting from the project should be stated, and recommendations for possible follow-up projects should be given. In any case, the project must be critically evaluated (has the objective been achieved, what could have been done better, etc.?)
- Word(s) of thanks  
If a student wants to take up a word of thanks in his/her thesis then it is recommended to be brief. A thesis is not a personal outpouring but a professional piece of work. As a guideline the word(s) of thanks should have a size of in total 300 words maximum. The word(s) of thanks should be restricted to people who have actually contributed to the final project. A word of thanks will be taken up in the thesis after the table of contents or in the end before the references are mentioned.
- Literature  
The thesis includes a list of references to the literature used and other sources consulted. (See also the Rules for Citations and References, below).
- Intellectual property/ copyright  
Intellectual property is held by Eindhoven University of Technology (TU/e) and partially by the author of the thesis. This implies that TU/e has the right to make use of the author's work without his/her permission and vice versa. The TU/e mentions the author when he/she appreciates mentioning and vice versa the author mentions TU/e and the supervisors if they appreciate mentioning. If the author states that there copyright on a thesis than should be mentioned that TU/e holds that copyright.
- Embargo regulation intellectual property/copyright  
The graduation supervisor can declare that the final thesis of the graduation is:
  - Public
  - confidential for max. 1 year. The Examination committee has given an approval for this.  
*note: include the publication date (one year from now) in the report*
  - confidential after 1 year \*
 Please hand in two copies of the thesis, respectively a public version and a confidential version at the secretary of the Examination Committee in VRT 2.12. After the meeting of the Examination Committee the student can pick up the confidential version at the secretary of the Examination Committee in VRT 2.12.  
*note: a public version of the thesis is required for publication*  
Explanation: the public version of the thesis will be of public access through the website of the TU/e immediately while the confidential version will be accessible after a one year period.

## 5.2 | Rules for Citations and References

The use of another person's work is permitted as long as the sources are reported clearly. If a student does not report sources consulted, he is guilty of plagiarism. The following rules apply for citations and references.

### 1. Making use of a spoken text

The quoted text can be presented in italics between quotation marks, giving the name of the person cited and, if known, the year in which the statement concerned was made.

### 2. Making use of a written text

In this case the text is quoted (possibly in italics) with the following information (depending on the source):

- Surname and initials of the author(s), title of the book, year of publication (in brackets), publisher (name and place), and the page numbers concerned (pp ...),
- Surname and initials of the author(s), title of the article, name of the journal, volume and number, and the page numbers concerned (pp...), -surname and initials of the author(s), title of the report, year (in brackets), publisher (name and place), and the page numbers concerned (pp ...),
- Surname and initials of the author(s), title of the article, name of the newspaper, date, and page number,
- Title of the brochure / document, year of publication, name of publisher (manufacturer, supplier, organization etc.),
- Internet website: http address and date, author(s), initial(s), name of the site, name of the company or institution (if known).

The following two methods are the most common for referring to sources in the body of the thesis.

- Numbers between square brackets that refer to the literature list at the end of the thesis.
- Name(s) of author (s) and year between curved brackets (name, year) that refer to the literature list at the end of the thesis.

In different scientific disciplines different kinds of styles are used for referencing to documentation sources and the description of titles of publications. A well-known style is the Vancouver style. This style is developed by the ICMJE (International Committee of Medical Journal Editors). For more elaborated information see the site of the ICMJE: [www.icmje.org](http://www.icmje.org)

The Vancouver-style uses notes. According to this (number referencing) system refer numbers in a text to the list of quoted documents at the end of a publication. Super text is preferred but it is also allowed to place number between brackets. When is referred to multiple sources simultaneously subsequent numbers are divided by a hyphen and not subsequent number by a comma.

### 3. Making use of drawings and photographs

In this case the name of the artist or photographer must be stated immediately below the drawing or photograph being reproduced. On publication of the thesis, royalties must be paid to these third parties. This also applies for images copied from internet if they are copyrighted.

These rules are taken from: Herwijnen, F. van, (2003) Plagiaat= fraude, Bouwipers, number 10, volume 19, pp 9-10

#### 4. Making use of logos and names of commercial institutes or companies

- Making use of the TU/e logo is only permitted when the author meets the demands of a thesis. It should be clear that it concerns individual graduation work of a student. The TU/e logo should be used in a proper way in accordance with the house style. The design of the cover of the thesis is restricted to the house style regulation of the TU/e. The logo has to meet the graphic requirements such as sharpness and accurate colors. If the author does not meet these requirements correctly this can lead to a claim of the TU/e.
- It is not allowed to use logos on the cover of the thesis of third parties, even when they have financially contributed to the thesis or to the final project.
- An exception can be made if logos are used who illustrate the content of the final project. The copyright is fully applicable in this case. Using logos can be a matter of quoting rules but it will surely needs permission of the party in question. A lot of commercial institutions and companies supervise abuse of their corporate identity carefully.
- It is not allowed to mention names of third parties on the cover or title page of the thesis. An exception is made in the case that a company or institution is mentioned where a member of the Graduation Supervision Committee works. The mentioning of the name of an institution or company must take place direct behind the name of the actual member of the Graduation Supervision Committee in the same font and character size.
- It is allowed to mention names of third parties who have contributed to the graduation project elsewhere in the thesis in an appropriate way.
- It is not allowed to take up advertising in the thesis unless advertising is a functional subject of research within the framework of the graduation project or otherwise used for illustration purposes. Copyright and quoting rules are also applicable in such cases.

#### 5. Unity of graduation / Self quotation

The content of a thesis should relate to the final graduation project itself. The thesis should make up a unity as usual in scientific and professional reports. Results of separate exercises, earlier written articles and reports, results of subjects and reports of excursion should not be part of the thesis. In extension to this self- quotation should be avoided, unless self- quotation is absolute necessary for the graduation itself. Self-quotation is not allowed in the thesis. Common references should be used.

#### Submitting the thesis

Every thesis must bear the signature of the chairman of the Graduation Supervision Committee.

Every thesis must be accompanied by a summary article in the form of a separate Appendix, containing a brief overview of:

- the objective of the graduation assignment,
- the methods and means used to achieve this objective,
- the results and conclusions set against the goals originally defined.