

Assessment protocol Master's thesis 4TU-CME

This protocol was set up to support the assessment of Master's theses within the 4TU MSc-programme Construction Management & Engineering (CME).

The assessment of the Master's thesis takes place after the public colloquium and the discussion / questioning afterwards. This is done in a short, closed meeting of the Master's thesis committee (the student is not present at this meeting). The assessment is performed by the university members of the Master's thesis committee. External members have an advisory-vote. At the assessment, several aspects are taken into account.

Regarding the assessment aspects, three main aspects are distinguished:

1. With respect to content: quality of research or design¹ (product)
2. Working and learning process during Master's thesis project (process)
3. Communication (presentation)
 - a. Report
 - b. Oral presentation and defence

Appendix 1 lists all aspects within these three main categories. When assessing a Master's thesis, the committee will address these main aspects and determine the strong and weak points of the student's work. This is registered by the main supervisor on the **Assessment Form Master's thesis CME**.

Subsequently the committee determines the final grade for the Master's thesis according to the final grading profiles.

Appendix 2 presents profiles for final grading that indicate how the quality of the Master's thesis as a whole can be translated into a final grade.

Appendix 3 lists aspects for assessment and the profiles for final grading offer guidelines for a more equalized assessment of master theses and offer clarity to the student about the way he or she will be assessed. The aspects for assessment and the grading profiles were set up according to the learning goals of the Master's thesis and (partially) on the final qualifications of the MSc-programmes.

After determination of the final grade, the Master's thesis committee announces the final grade to the student and presents the feedback on the assessment form orally to the student during the final public assembly.

NB When the research has a balanced focus on technique and management, this will be valued positively. When this is not (or to a lesser extent) the case, this does not have to lead to a negative influence on the assessment.

¹ This aspect has to score sufficient or more to lead to and sufficient overall score

Assessment Form Master's thesis 4TU-CME

Name student: Student number:

Course code: Date:

Main supervisor ('Afstudeerdocent'):

Thesis title:

Final grade: Duration of graduation project: months

Signature main supervisor:

| Criterion | What went well? | What could have been improved? |
|--|-----------------|--------------------------------|
| Content: quality of research or design (project) | | |
| Working and learning process during project (process) | | |
| 3. Communication (presentation) 3a. Report 3b. Oral Presentation and defence | | |

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Appendix 1 - Assessment criteria

1) With respect to content; quality of research / design (project)

| Assessment criteria | Indicators |
|--|--|
| <i>Innovation</i> | <ul style="list-style-type: none"> - Creativity - Inventiveness - Originality - Extent to which the research is innovative - Extent to which the student independently introduces new concepts - Contribution to new knowledge / contribution to a concrete product, design or model |
| <i>Literature review & Theoretical framework</i> | <ul style="list-style-type: none"> - Use of earlier results of research (and integration of these results) - Depth (detailed elaborations, use of literature) |
| <i>Research method / design</i> | <ul style="list-style-type: none"> - Clear research question - Applying the correct research and design methodologies - Systematic / methodical approach - Data collection and analysis / validation of the design - The extent to which the original research proposal has been met and reasons for alterations (keeping up with a work planning, follow up on appointments made) |
| <i>Conclusions & recommendations / Contribution to theory & practice</i> | <ul style="list-style-type: none"> - Reasoning / argumentation of conclusions (are research questions answered?) - Generalizability - Relevance (scientifically, applicability in practice / being able to put research in context) - Able to analyze and discuss the results, to draw conclusions from the results and to reflect on the results in the wider societal and scientific context |

NB When the research has a balanced focus on technique and management, this will be valued positively. When this is not (or to a lesser extent) the case, this does not have to lead to a negative influence on the assessment.

2) Working and learning process during Master's thesis project (process)

| Assessment criteria | Indicators |
|---|--|
| <i>Time needed to finish the MSc thesis project</i> | <ul style="list-style-type: none"> - Duration of the process The process start is marked by the approval of the research proposal |
| <i>Independence and professional skills</i> | <ul style="list-style-type: none"> - Independence - Cooperation - Communication skills - Incorporation of feedback |
| <i>Attitude</i> | <ul style="list-style-type: none"> - Commitment / enthusiasm - Attitude to strengthen his / her personal development - Student's attitude during progress meetings (active / passive) - Reflection upon his / her own work - Functioning within the organisation where the project is carried out |

3) Communication (presentation)

| Assessment criteria | Indicators |
|--------------------------------------|--|
| <i>Report</i> | <ul style="list-style-type: none"> - Composition, structure, writing style, use of language - Consistency - Readability: clarity / sharpness of formulations - Lay out, images and tables (usefulness, added value) - References to literature |
| <i>Oral presentation and defence</i> | <ul style="list-style-type: none"> - Effective presentation of the content (is the message coming across?) - captivating way of presenting (verbal capabilities, posture) - Distinction between important points and minor aspects - Insight in subject matter and in coherence between different parts of the project - Structure / outline presentation - Care of details / neatness - Answering questions / discussion / defence |

Appendix 2 - Profiles for final grading

These profiles are used as a framework of reference to provide general characterisations of the graduation process and product that leads to the final grading. It will not be used to fill out the feedback boxes in the Assessment Form. At CME in Eindhoven and Delft grading in 0.5 marks is possible.

5. Insufficient

The research and / or report are insufficient and the student was strongly directed by his or her supervisors. Weak points can clearly be pointed out. The student did not show an academic attitude. On average, the student scores 'insufficient' on all aspects for assessment.

6: Sufficient / meets the requirements

With respect to content, the research was conducted sufficiently. The report is mediocre. Weak points can clearly be pointed out, but are compensated by aspects on which the student performs better. The student has shown little input of his own and was strongly directed by his or her supervisors. On average, the student scores 'sufficient' on all aspects for assessment.

7: Amply sufficient / good

With respect to content, a solid piece of research was delivered. The report is carefully edited. Either the research process or the mastery of subject matter leaves room for improvement. The supervisors clearly had a steering influence on the final product. The student scores at least 'sufficient' on all aspects for assessment and 'good' on some aspects.

8: Good mainstream/ contains new elements

With respect to content, the research was set up in a solid way and was carried out accurately. The report is carefully edited regarding language as well as lay out. The student has worked independently and was able to put forward his or her own initiatives. The provided guidance by the supervisors was minimal. On average, the student scores 'good' on all aspects for assessment.

9: Very good / excellent

The research is innovative and can be converted to an article for a renowned (scientific) magazine without putting in too much effort. With respect to content, the research is very solid with some points that can clearly be pointed out as strong. The report is carefully edited and shows that the student features good writing skills. The student's own input and independence are large. The student clearly stands above subject matter and is able to defend his or her statements in discussions well. The student scores at least 'good' on all aspects for assessment and 'very good' or 'excellent' on some aspects.

10: Excellent

The research is innovative and can be converted to an article for a renowned (scientific) magazine without putting in too much effort. With respect to content, the research is excellent. The student is capable of conducting research independently. The report and the presentation show that the student disposes of excellent communication skills (written and oral). The student scores on average 'excellent' on all aspects for assessment.

Appendix 3 Profiles for assessing the aspects

Assessment aspects with respect to content; quality of research / design (project)

| Assessment Criteria | ≤5 | 6 | 7 | 8 | 9 | 10 |
|---|--|--|--|--|---|--|
| Innovation | Not innovative; no creativity, inventiveness and originality. | Somewhat innovative; limited creativity, inventiveness and originality. | Creative, inventive and original, but some room for improvement. | Student is perfectly able to introduce new, innovative and original concepts. | Very well thought-out innovative project. The concept can be a contribution to a product design or model. | The Master's thesis project is an excellent contribution to a concrete product, design or model. |
| Literature review & Theoretical Framework | No depth, no use of earlier academic materials. Unclear and inadequately explained. | Limited depth and use of earlier academic materials. | Adequate depth and use and citation of earlier academic materials. Use of a theoretical framework. | Well-explained and critical evaluation of the latest literature. More than average depth. | Profound and critical evaluation of literature and demonstrating that the student is very skilled in integrating this literature. | Excellent and original; suitable for journal publication. |
| Research method/design | Unsystematic, not validated and unclear. No link to the correct research and design methodologies. | Limited explanation; justified using academic literature and showing some systematic approach. | Adequate use of research and design methodologies. Student is using the literature and dataset. | Well-explained and well justified, using the right research and design methodologies. | Profound and critical use of research and design methodologies. Very clear and validated design. | Excellent demonstration of research and design methodologies. |
| Conclusions & recommendations, Contribution to theory & practice | Vague, irrelevant, not able to analyze and discuss the results. | Clear and rather relevant, but shortage of arguing the conclusions. | Appropriate conclusions and recommendations. Contributes to theory and practice. | Clearly, relevant and very critical conclusions and recommendations. Valuable contribution to theory and practice. | Profound and original conclusions and recommendations. Very valuable contribution to theory and practice. | Excellent conclusions and recommendations. |

Assessment aspects with respect to working and learning process during Master's Thesis project (process)

| Assessment Criteria | ≤5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|
| Time needed to finish the Master's Thesis project | Master's Thesis finished in >1 year. | Master's Thesis finished in 10-12 months. | Master's Thesis finished in 7-9 months. | Master's Thesis finished in 6 months. | Master's Thesis finished in 6 months or less. | Master's Thesis finished in 6 months or less. |
| Independence and professional skills | Inadequate to work independent, incorporate feedback and cooperate with others. | Limited communication skills. To some extend skilled in working independently, incorporating feedback and / or cooperating. | Adequate in cooperating, incorporating feedback and / or cooperating. Can work independent. | Independent; very good demonstration of skills. | High degree of independence; superior demonstration of skills. | Excellent professional skills. |
| Attitude | Not the attitude to strengthen his / her personal development. Very passive attitude in meetings. | Limited commitment and enthusiasm. Limited active attitude in meetings. | Positive attitude in strengthen his / her personal development. Active and enthusiast. | Professional attitude. Active attitude during meetings. | Strives for personal development. Very committed, enthusiast and positive attitude during meetings. | Excellent attitude. |

Assessment aspects with respect to Communication (presentation)

| Assessment Criteria | ≤5 | 6 | 7 | 8 | 9 | 10 |
|--|---|--|--|---|---|-------------------------------------|
| Report: writing style and structure | Poor illogical structure | Readable, clear and consistent | Adequate consistent report with a readable writing style. Adequately argued. | Professional report with a very clear composition. | Profound report. Very clear writing style and structure. Potentially worth journal publication. | Excellent report. |
| Oral presentation and defense | Vague and unclear presentation and defense. | Clear, but limited based on the reported findings. Satisfactory. | Effective and structured presentation of the content. Insight in the subject matters. Good presentation. | Very clearly and takes much care of details. Good answers on questions and discussions. Gives much insight in the subject matter. Very good presentation. | Profound presentation with eye openers. A lot care of details, without going off-topic. Very strong presentation and defense. | Excellent presentation and defense. |