# Assessment form graduation project CSE, IST, DS&AI, ES

| | |
|---|---|
| Student name: | Student ID: |
| Master program: | Course code[1]: |
| Title of the graduation report: | |
| Is the graduation report public? [2]      Yes      No | Defense date: |

[1] For CSE (incl. IST and DSIE): 2IMC00; for DS&AI: 2AMC00;
  for ES: 2IMC00 if supervisor is from M&CS and 5T746 if supervisor is from EE;
  for 45 ECTS graduation projects (double diploma): for CSE (incl. IST and DSIE): 2IMC45; for DS&AI: 2AMC45.

[2] Note that a request for the graduation report to remain confidential for two or five years must already have been
  made through the graduation plan form.

## Instructions for supervisor

On p. 1, specify the assessment committee; on p. 2, provide a detailed assessment of the obtained results, the report, the presentation, the defense and the execution of the project; on p. 3, select the final outcome of the graduation project and sign. The student must sign the declaration concerning the TU/e Code of Scientific Conduct for the Master's thesis. At the end of this form there are detailed explanations of the individual assessment criteria and some guidelines regarding the grading.

## Graduation Assessment Committee

The graduation project is assessed by the following graduation assessment committee, the composition of which has been approved by the Examinations Committee no later than one month prior to the completion of the graduation project.

| Role | Name | Cluster or organization |
|---|---|---|
| Voting member 1 (graduation supervisor) | | |
| Voting member 2 (independent assistant professor, associate professor or full professor) | | |
| Voting member 3 (can be tutor or company supervisor) | | |
| | | |

**Detailed assessment**. Refer to "detailed comments on grading criteria" for clarification of the criteria.

| Grading Criteria | Assessment | | | | |
|---|---|---|---|---|---|
| | Insufficient | Sufficient | Good | Very Good | Excellent |
| **Results** | | | | | |
| Quality | | | | | |
| Quantity | | | | | |
| Scientific and/or societal relevance | | | | | |

*Explanation*

| | | | | | |
|---|---|---|---|---|---|
| **Report** | | | | | |
| Motivation and clarity of research question | | | | | |
| Discussion of related work and context | | | | | |
| Presentation of methods and results | | | | | |
| Conclusions | | | | | |
| Writing quality | | | | | |

*Explanation*

| | | | | | |
|---|---|---|---|---|---|
| **Presentation** | | | | | |
| Content | | | | | |
| Presentation skills | | | | | |
| Quality of slides | | | | | |

*Explanation*

| | | | | | |
|---|---|---|---|---|---|
| **Defense** | | | | | |
| Discussions about methods and results | | | | | |
| Discussions about context | | | | | |

*Explanation*

| | | | | | |
|---|---|---|---|---|---|
| **Execution** | | | | | |
| Independence | | | | | |
| Planning and meeting deadlines | | | | | |
| Communication with stakeholders | | | | | |

*Explanation*

**Overall assessment**

| Grade: | |
|---|---|
| Explanation: | |

**International experience:**        Yes              No

        The graduation project can be considered as contributing to the international experience of the student if at least a part of the project tantamount to 15 EC is conducted outside The Netherlands.

**Graduation report:**

        Authenticity check on report has been conducted by the supervisor(s).

        According to Article 17 of the graduation regulations, the graduation supervisor must check the authenticity of the graduation report before it is submitted to the graduation assessment committee; this can be done via Ouriginal or other means.

        The graduation assessment committee requires minor changes (not affecting the assessment) to be made to the graduation report.

        The final version of the report must be checked by the supervisor and sent to the student administration together with this form.

**Signed by the supervisor**

  Date:

  Signature graduation supervisor:

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*This form must be sent (electronically) to the Student Administration at mcs.csa@tue.nl by the supervisor, together with the final version of the report and a declaration concerning the TU/e code of Scientific Conduct (see below) signed by the student.*

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

I have read the TU/e Code of Scientific Conduct established by the Executive Board on January 31, 2019.[1]

I hereby declare that graduation project has been carried out in accordance with the TU/e Code of Scientific Conduct.

**Student name:**

**Student ID:**

**Date:**

**Signature:**

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[1] See: https://www.tue.nl/en/our-university/about-the-university/integrity/scientific-integrity/
The Netherlands Code of Conduct for Scientific Integrity, endorsed by 6 umbrella organizations, including the VSNU, can be found there also. More information about scientific integrity is published on the websites of TU/e and VSNU.

**Detailed comments on grading criteria**

The graduation project should be assessed on the quality of the work done during the project (*Results*), the quality of the graduation report (*Report*), the quality of the graduation presentation (*Presentation*), the quality of the defense (*Defense*) and the quality of the execution of the assignment (*Execution*).

For each of these criteria, several subcriteria are identified. Indicate, for each subcriterion, whether it is assessed as *Insufficient* (< 6), *Sufficient* (6 to 7), *Good* (7 to 8), *Very good* (8 to 9), or *Excellent* (9 to 10). The score *Good* represents what can expected from the candidate; it does not imply above-average results.

It is important to also provide an explanation with the assessment of each criterion. This explanation need not discuss all subcriteria, but it should state the main strong points and/or the aspects that can be improved. The detailed explanation below describes what is to be assessed with each of the (sub)criteria and may form the basis for the written explanations of the assessment of each criterion. Not all aspects mentioned are relevant for every graduation project.

**Results:** This criterion refers to the work done during the graduation project, with respect to scientific and societal relevance.

- For *Quality, a*ssess how well the results are grounded in the state-of-the-art, whether clear and appropriate methods were used to obtain them, and how innovative the solution is.

- For *Quantity*, assess whether the candidate has achieved less or more than what can be expected from an average master graduate; here the complexity of the problem should be considered.

- For *Scientific and/or societal relevance* consider whether the work will lead to a scientific publication, is expected to have an impact on society, or will be useful for the company in which the project was carried out.

**Report:** This criterion refers to the quality of the graduation report.

- For *Motivation and clarity of research question* assess whether it is clear which research questions are addressed, whether they are sufficiently motivated, whether it is sufficiently explained why these research questions are interesting or relevant, and what is gained by solving them.

- For *Discussion of related work and context* assess whether the report sufficiently describes the relevant related work, and whether it adequately describes relevant domain knowledge and identifies domain requirements, if relevant, such that the reader can put the contributions into context.

- For *Presentation of methods and results* assess whether the solution is clearly presented, whether it is explained through which methods the solution was obtained, which choices and design decisions were made (especially also considering domain requirements). This criterion also subsumes the correctness of the results and the validity of the arguments used, and whether the results are (in principle) reproducible.

- For *Conclusions* assess whether the conclusions in the report answer the research questions. Are the conclusions supported by the methods and arguments presented in the rest of the report? Are the results interpreted correctly in the original problem context? Are the results useful, or not useful, for solving the posed and formulated problem and why? Are the (positive or negative) implications for the problem domain and application area discussed critically with valid arguments? If ethical or societal concerns are relevant for the project, then it is important that these are adequately discussed.

- For *Writing quality* assess whether the text is easy to read (to the extent that the material allows it), whether the report has a pleasant and inviting general appearance and a clear structure, whether figures and tables are clear and support the text, and whether English usage is correct.

**Presentation:** This criterion refers to the quality of the graduation presentation.

- For *Content* consider to what extent the presentation provided the audience with a good impression of what the project was about (not too detailed, not too superficial). Could a master student from the same master program follow the presentation?

- For *Presentation skills* consider whether the candidate was able to confidently present their work, with good pace and in contact with the audience.

- For Quality of slides evaluate whether the use of audiovisual aides supported the presentation.

**Defense:** This criterion refers to how well the candidate could answer questions from the assessment committee about the report and the presentation.

- For *Discussions about methods and results* assess whether the candidate can adequately participate in and contribute to discussions about technical aspects of the work, can defend design decisions and chosen methods and critically reflect on their own work.
- For *Discussions about context* assess whether the candidate can critically reflect on the context of the work, the domain requirements, the problem formulation, societal and/or scientific impact of the work, and future work.

**Execution:** This item refers to the execution of the project.

- For *Independence* assess whether the candidate was self-motivated, came up with own ideas, took control of their project, needed much guidance when writing the report and preparing the presentation.

- For *Planning and meeting deadlines* assess whether the candidate followed up on the planning made as part of the preparation graduation project and met agreed deadlines.

- For *Communication with stakeholders* assess whether the candidate adequately communicated with the supervisor, the tutor, and other stakeholders during the execution of the project.

**Overall assessment:** The scores and the overall performance with respect to each of the criteria together determine the final grade for the graduation project. There is no fixed scheme for this, but the following serves as a guideline for arriving at the final grade. Grades need not be integers; halves are also allowed. Note that the graduation project is considered successfully completed if it is assessed with a final grade of 6.0 or higher; an assessment with a grade of 5.5 or lower means that the graduation project is not successfully completed.

**Interpretation of grades**

5    The work is unsatisfactory concerning results or report, or on many aspects overall. Students with unsatisfactory results or reports should be informed clearly and explicitly during the project by their supervisor that their current work is insufficient to pass the final defense, so that the student can choose to improve their results and/or report.

6    The work scores satisfactory (and not more) on aspects concerning results, the report, and the conclusions, and typically also on independence in execution. The remaining scores are good at best. The application of the chosen method is described and sufficient to solve relevant instances of the addressed problem. The results are reproducible. The conclusion summarizes the results w.r.t. the original scientific and/or societal problem and claims about project results are correct and valid for the problem domain, but an adequate discussion of impact on the problem domain is missing.

7    The work is good regarding the majority of the criteria, specifically concerning results, the report, the conclusions, and the defense. The described method solves relevant instances of the addressed problem at demonstrably good quality; the report justifies important design decisions and methodological choices based on an adequate understanding of relevant literature or domain requirements, but further conceptualization and argumentation is needed to obtain a general solution for the posed problem. The conclusion and the defense reflect the validity of the obtained results regarding relevant strengths and

weaknesses. Relevant aspects of the problem, method, or results are not explicitly covered by the work, but can be filled in by an expert in the field without much effort.

**8**    The work is very good with respect to several criteria and good with respect to the remaining ones. Typically, a solid piece of work approaching a relevant scientific and/or societal problem with an adequate method leading to interesting although perhaps not very surprising results, achieved with a reasonable level of independence. The impact of the project results on the original problem context are discussed adequately.

**9**    The work is excellent with respect to several criteria and very good with respect to the remaining criteria. The report presents an innovative solution to a complex problem of demonstrated scientific and/or societal relevance, obtained with a high level of independence. The applied method is specific to the nature of the problem and requirements of the original problem domain. The conclusion discusses how the solution impacts the problem domain and related domains; it goes beyond merely answering the scientific research questions. The work can lead to a publication in a good conference or journal or can be directly, or with relatively little effort, be applied in an industrial context and/or a concrete product (e.g., integrated into a large software system).

**10**    The work is excellent with respect to all five criteria and the work is clearly outstanding with respect to quantity or quality, and is expected to lead to two publications in good conferences or to one publication in a top conference or journal or to a patent.