Instructions for Assessment of Degree Projects

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Contents

Preface

This document is the main source of information regarding the assessment of degree project courses in the Faculty of Computing at Blekinge Institute of Technology. The document covers degree projects at the Bachelor's, one-year Master's, and two-year Master's level in computer science and software engineering as well as the degree projects in the Master of Science of Engineering (MSE[1]) programs.

The aim is that these instructions are used by course responsibles, examiners, supervisors, appointed faculty reviewers, and students to learn about the generic degree project process and the expectations and responsibilities between the different roles.

The examiner must always base his or her assessment and grading on the explicit learning outcomes defined in the most recently approved syllabus for the degree project course in question. However, our ambition has been to develop assessment procedures and templates that capture these learning outcomes. We still have some work to do before the templates and syllabuses are completely compatible.

Finally, it is important to note that the currently adopted generic degree project process at the Faculty of Computing and the corresponding templates, documents, instructions, and other items have been developed and improved by several individuals over the last years. Above all, we would like to thank Professor Robert Feldt, who initiated and developed the first versions of the process and many of the supporting documents. Additionally, we would like to thank our colleagues at the Faculty of Computing, who have contributed with new material and contents, insightful ideas, and suggestions for improvement.

The authors

[1]MSE = Swedish "Civilingenjör", a five-year Engineering degree that should not be confused with "Civil Engineering"

Chapter 1

Introduction

The degree project is conducted at the end of the education programs that lead to Bachelor's, Master's, and Master of Science of Engineering's (MSE[1]) degrees. The purpose of the project is for the student to practice the necessary skills used to independently define, plan, conduct, and present a project. The projects focus on research, on development, or contain a blend of both. At Blekinge Institute of Technology (BTH), the Master's projects should have a clear research focus while the Bachelor's and MSE projects can be focused on development. Regardless of the type of degree, it is important to note that all projects must have sound scientific backing.

During the planning, execution, and presentation of the degree project, the student is expected to apply the knowledge and skills acquired during his or her education to independently and deeply explore one or more areas of the main subject. At the end, the student will present, orally and in writing, the results of the degree project. In addition, the student will review and critically appraise another student's thesis.

Currently, the document focuses on rules, instructions, and templates of the degree project courses. The first part contains all assessment templates. These templates are mainly used by the examiner during the assessment and grading of various examination parts. Two of these templates are also used by the supervisor and the appointed faculty reviewers to assess and recommend grades for the project plan and the final version of the thesis. The second part contains instructions for assessing the various aspects that constitute each ground for judgment in the templates. The third part contains instructions concerning the mandatory document templates for the project plan and the thesis.

[1]MSE = Swedish "Civilingenjör", a five year Engineering degree that should not be confused with "Civil Engineering"

Chapter 2

Assessment templates

The assessment templates are used by different constellations of examiners, supervisors, and appointed faculty reviewers to assess project plans, theses, presentations and defenses, and written and oral oppositions. It is important to remark that the assessment templates, the supervisor's assessment, and the assessments and recommendations provided by the appointed faculty reviewers only serve as a basis for decisions. The examiner is formally responsible for assessing and grading the different examination parts.

All examination parts are assessed using the 2-level or 3-level scale, except the thesis for which a 7-level scale is used. The difference between the 2-level and the 3-level scale is that the latter includes the assessment *Fail – Complementation required*. The grade of an examination part is based on a summarised assessment of several aspects of a number of grading criteria, unless an alternative approach is explicitly stated. Table 2.1 describes the various assessment scales.

The grading criteria and aspects for all examination parts are summarised in Table 2.2.

To achieve a passing grade, all grading criteria must have received a value of at least 1. If any grading criterion is assessed as Fail – Complementation required (UX/FX/0), the student is given a time-limited opportunity to complement the examined part in question. After

Assessment	2-level scale	3-level scale	7-level scale	Value
Fail – Substantial further work is required	U	U	F	–
Fail – Complementation required for G/E	U	UX	FX	0
Acceptable	G	G	E	1
Satisfactory	G	G	D	2
Good	G	G	C	3
Very good	G	G	B	4
Excellent	G	G	A	5

Table 2.1: Assessment scales and values

Assessment Criterion	Project Plan	Thesis	Pres. & Defense	Written Oppos.	Oral Oppos.
Process	X	X			
Contents	X	X		X	
Contribution		X			
Presentation	X	X	X	X	X
Overall impression		X			

Table 2.2: Overview over grading criteria for all examination parts.

Assessment Criterion	Bachelor	1-year Master	2-year Master	MSE
Process	0.20	0.20	0.10	0.25
Contents	0.40	0.40	0.40	0.35
Contribution	0.00	0.10	0.25	0.20
Presentation	0.40	0.30	0.25	0.20

Table 2.3: Weighting of criteria for various types of theses.

complementation, a thesis will be either graded as Fail (U/F) or as Pass (G/E). The thesis will be awarded the grade Fail (U/F) if:

- the thesis has not been submitted to the examiner within the designated deadline after an oral presentation and defense, or if
- the examiner determines that the complementation was insufficient to fulfil the requirements for a Pass grade (for example, due to that some grading criterion still does not reach a Pass level, or due to that one or more grading criteria are still considered as Fail – Complementation required).

Each student is to be given up to five opportunities to be examined in order to achieve a Pass grade on the degree project course. After two such opportunities, the student is entitled to request a change of examiner. Such a request should be made in writing to the faculty dean.

During the assessment of the thesis, a weighted mean is computed based on the values of the assessed aspects for all grading criteria. The weighted mean is rounded off to the nearest integer[1]. This integer is then translated to the corresponding grade according to the 7-level scale.

The weighting of grading criteria of differs between degree projects of different types (see Table 2.3).

[1] As in the Swedish rounding rules; `http://en.wikipedia.org/wiki/Swedish_rounding`.

Criterion	Aspect	Value
Process	Power of initiative and creativity	
	Critical thinking and attitude	
	Openness to critique and supervision	
Contents	Problem identification and formulation	
	Evaluation	
	Method selection and application	
	Planning	
Presentation	Disposition	
	Adherence to formal rules and templates	
	Description of work	
	Analysis and argumentation	
	Language	

Table 2.4: Assessment template for project plans. The Process shall only be assessed by supervisors.

2.1 Assessment template for project plans

Through the project plan, the student shall demonstrate broad knowledge and a deepened understanding of methodologies relevant for the subject. The project plan shall describe a clearly defined and delimited degree project with the purpose to creatively, critically, and independently answer one or more identified and formulated research questions within at least one specific area of the subject. The project plan shall contain a critical review of relevant scientific literature and it shall clarify the student's view and understanding of the state-of-the-art and the state-of-practice in the selected area of study. The project plan shall identify any potential risk related to the selected approach and how they can be mitigated. The project plan should also describe specific needs of knowledge gathering necessary for completing the degree project. The student shall define a clear and adequate time and activity plan and describe suitable approaches to answer the formulated research questions within the given constraints.

The assessment template for project plans is presented in Table 2.4. The supervisor assesses the project plan based on the following grading criteria: Process, Contents, and Presentation. The other roles only assess Contents and Presentation. Since the project plan merely describes *proposed work*, the assessment of several aspects is based on the expected outcomes, assuming that the student pursues the project according to the project plan.

2.2 Assessment template for theses

Through the thesis, the student shall demonstrate broad knowledge and a deepened understanding of methodology in the subject. The thesis shall contain the description of a clearly defined and delimited degree project for which the purpose was to creatively, critically, and independently answer one or more identified and formulated research questions within at least one specific area of the subject. The student shall, through the thesis, demonstrate significantly deepened knowledge in the selected area of study, which comprises deepened insights of the state-of-the-art and the state-of-practice[2]. The thesis shall contain a critical review of related scientific literature within the selected area of study. Furthermore, the thesis shall clearly and in detail describe and motivate a suitable approach to answering the formulated research question(s). The conducted degree project shall contribute to knowledge development in the subject area[2]. The thesis shall contain a clear description of findings as well as an insightful and scientifically based analysis and synthesis of these findings. The contribution shall be discussed in relation to the relevant scientific, engineering, societal, and ethical aspects. The thesis must adhere to the standards and requirements of scientifically grounded work.

The assessment template for theses is presented in Table 2.5. Grading criteria and aspects are almost identical for project plans and theses in terms of their number and names, except for (i) the criterion "Contribution", which is only applicable for thesis assessment and (ii) the aspect "Planning and execution", which corresponds to the execution of the plan described in the project plan, and has therefore move from "Content" to "Process". The meaning of some of the aspects, however, differs between the two artefacts since several of the aspects of the criteria concerning the project plan are assessed from the perspective of expected outcomes instead of actual outcomes (see (ii) above). The supervisor assesses the thesis based on the criteria Process, Contents, and Presentation while the other roles only assess Contents and Presentation.

2.2.1 Example

The supervisor assesses his/her MSE student's thesis and assigns a value of 3 (G/C) for the overall impression. The criteria Process, Contents, Contribution, and Presentation are assessed with the following values:

$$\begin{aligned} \mathit{Process} &= \{1, 2, 1, 1\} \\ \mathit{Contents} &= \{2, 5, 1\} \\ \mathit{Contribution} &= \{2, 3\} \\ \mathit{Presentation} &= \{4, 4, 2, 1, 1\} \end{aligned}$$

[2]For a Bachelor-level thesis, the requirements are not as strong as formulated here. Please consult the current course descriptor for your particular course for details.

Criterion	Aspect	Value
Process	Independence, initiative and creativity	
	Critical thinking and attitude	
	Planning and execution	
	Openness to critique and supervision	
Contents	Problem identification and formulation	
	Evaluation	
	Method selection and application	
Contribution	Contribution to research area (Master only)	
	Contribution to development (MSE only)	
	Synthesis	
Presentation	Disposition	
	Adherence to formal rules and templates	
	Description of work	
	Analysis and argumentation	
	Language	
Overall impression*		

Table 2.5: Assessment template for theses. The Process shall only be assessed by supervisors. *Overall impression represents a quantitative assessment of the overall impression of the thesis. If its value differs from the integer computed by rounding the result of the weighted aspect evaluation, the deviation shall be recorded and discussed in the reviewing committee.

The supervisor considers the weighting scheme for MSE degree projects (see Table 2.3) and then computes the mean:

$$0.25(\frac{1+2+1+1}{4}) + 0.35(\frac{2+5+1}{3}) + 0.20(\frac{2+3}{2}) + 0.20(\frac{4+4+2+1+1}{5}) = 2.23$$

The mean is rounded according to the Swedish rounding rules and the resulting value, 2, corresponds to G/D. The examiner evaluates the same thesis by assessing Contents, Contribution, and Presentation (but not Process):

$$\begin{aligned} Contents &= \{3, 2, 3\} \\ Contribution &= \{4, 2\} \\ Presentation &= \{3, 2, 4, 2, 2\} \end{aligned}$$

The examiner considers the weighting scheme for MSE degree projects and then computes the mean[3] of his or her own assessment of all criteria, except Process:

$$0.35(\frac{3+2+3}{3}) + 0.20(\frac{4+2}{2}) + 0.20(\frac{3+2+4+2+2}{5}) * \frac{1}{1-0.25} = 2.43$$

The mean is rounded off according to the Swedish rounding rules and the resulting value, 2, corresponds to G/D. The appointed faculty reviewers also evaluate the same thesis and they all conclude that the thesis is worth 3, which corresponds to G/C. The examiner discusses the thesis with the appointed faculty reviewers. Since there is consensus among the faculty reviewers and their recommendations are identical to the overall impression of the supervisor, the examiner decides to grade the thesis as G/C.

2.3 Assessment template for oral presentations and defenses

During the presentation and defense of the degree project, the student shall demonstrate the necessary skills to orally communicate and clearly describe his or her conclusions and the basis of these conclusions in a dialogue with the examiner, senior lecturers from the subject area, students from the subject area who are on the same level, and lay people. Table 2.6 describes the criteria for judgment and their aspects, for oral presentations and defenses. Only the examiner assesses the oral presentations and defenses.

2.4 Assessment template for the written opposition

Through the opposition report, the student shall demonstrate his or her ability to provide constructive criticism and feedback and communicate his or her conclusions after

[3]The factor $\frac{1}{1-0.25}$ compensates for the lacking 0.25 for the Process criterion.

Criterion	Aspect	Value
Presentation	Oral description of problem and method	
	Oral description of analysis and contribution	
	Overall communication skills	
	Argumentation- and discussion abilities	

Table 2.6: Assessment template for oral presentations and defenses.

Criterion	Aspect	Value
Contents	Description of critical review	
	Description of necessary revisions and recommended revisions	
Presentation	Analysis and argumentation	
	Language	

Table 2.7: Assessment template for the written opposition.

reading another student's thesis. The student shall review the basis for the provided criticism and conclusions. The constructive criticism, the conclusions, and the arguments behind them, shall be summarised in a report to be read by the examiner as well as the author of the reviewed thesis. The opposition report shall include the results of a systematic and critical review in which sufficient consideration has been put on all relevant scientific, engineering, societal, and ethical aspects of the thesis' contribution.

Table 2.7 describes the criteria for judgment and their aspects, for the written opposition report. Only the examiner assesses the written opposition reports. The opponent is expected to first describe the results of the critical review and then a list of clear and concise suggestions for necessary and recommended revisions. The necessary changes are those changes that must be performed in order for the opponent to consider a Pass grade for the thesis. The recommended changes are those changes that should be performed in order to increase the quality (and grade) of the thesis.

2.5 Assessment template for the oral opposition

Through the oral opposition, the student shall demonstrate his or her abilities to provide constructive criticism and discuss his or her conclusions about the other student's thesis based on the conducted review. The opponent shall review the arguments behind the criticism and the conclusions. The constructive criticism, the conclusions, and the arguments behind them shall be discussed in dialogue with the author of the thesis on a level that makes it possible for the participating students, lay people, and researchers to appreciate and understand the core of the discussion. The provided criticism must be

Criterion	Aspect	Value
Presentation	Overall communication skills	
	Analysis and argumentation	

Table 2.8: Assessment template for the oral opposition.

based on a systematic and critical review of the thesis in question in which consideration has been put on all relevant scientific, engineering, societal, and ethical aspects of the thesis' contribution.

Table 2.8 describes the criteria for judgment and their aspects, for the oral opposition. Only the examiner assesses and grades the oral opposition. The opponent is expected to first present balanced and constructive criticism (the aspect *Overall communication skills*) and then lead a constructive and critical discussion (the aspect *Analysis and argumentation skills*) during which the respondent must defend his or her thesis.

Chapter 3

Evaluation and weighting of aspects

All degree project courses share the same grading criteria, see Table 2.2, but their weighting differs depending on the type of degree project. Table 2.3 describes the relative weights of the grading criteria for Bachelor's, One-year Master's, Two-year Master's, and Master of Science of Engineering's (MSE[1]) degree projects.

The project plan and the thesis are assessed by the supervisor, the examiner, and the appointed faculty reviewers. The supervisor assesses Process, Contents, Contribution, and Presentation. The other roles only assess Contents, Contribution, and Presentation. Since the course grade is only based on the assessment of the thesis, the weighted mean of aspect values is only computed for this examination part. The weighting of aspects is determined by the criterion weight as exemplified in detail in Section 2.2.1.

In the following, we provide textual descriptions for the grading levels of all aspects for all grading criteria. These textual descriptions should be used as guides ("rubrics") for the assessment. Please note that there is only one textual description for *Fail*, but that there are two assessment levels for *Fail*, as described in Table 2.1. Assessment level *Fail – Complementation required for G/E (Value "o")* should be used when the level of performance is close to level *Acceptable*, i.e. when only little extra-work is necessary to reach level *Acceptable*. In all other cases, i.e. when all or most of the conditions described in row *Fail* are true, the assessment result should be *Fail – Substantial further work is required (Value "–")*.

[1]MSE = Swedish "Civilingenjör", a five year Engineering degree that should not be confused with "Civil Engineering"

3.1 Evaluation of aspects for project plans and theses

3.1.1 Process

Independence, initiative and creativity	
Fail (–, 0)[2]	Lets supervisor be the driver. Does not provide own suggestions for planning, execution, contents, or focus. Insufficient or defective status/progress reporting.
Acceptable (1)	Initiates contact with the supervisor. Proposes simple or initial own ideas. In large, the main driver of the work. Acceptable status/progress reporting.
Satisfactory (2)	Initiates and keeps contact with the supervisor. Proposes own ideas. Is the main driver of the work and provides status/progress reports as agreed with supervisor.
Good (3)	Keeps good contact with the supervisor, based on agreed terms. Proposes and develops own ideas, which are creative to some degree. Provides regular and useful status/progress reports.
Very good (4)	Keeps very good contact with the supervisor. Improves continuously his/her capability to create, develop and realize own ideas.
Excellent (5)	Excellent contact with the supervisor. Creates, develops, and realizes own creative ideas of high quality.

Critical thinking and attitude	
Fail (–, 0)	Indiscriminating attitude. Inability or unwillingness to critically evaluate the validity of various claims.
Acceptable (1)	Limited critical attitude. Indicates ability to critically evaluate the validity of various claims.
Satisfactory (2)	Critical attitude, in large. Demonstrates ability to critically evaluate the validity of various claims.
Good (3)	Critical attitude. Clearly demonstrates ability to critically evaluate the validity of various claims.
Very good (4)	Critical attitude. Very good ability to critically evaluate the validity of various claims. Shows insight into the consequences that follow weakly/strongly supported claims.
Excellent (5)	Scientific attitude. Excellent ability to critically evaluate the validity of various claims. Deep insight into the consequences that follow weakly/strongly supported claims.

[2]Remember (see page 11): Value "0" should be used when only little extra-work is required to reach level *Acceptable*. When all or most of the conditions described for *Fail* are true, the assessment result should be "–".

Planning and execution (theses only)	
Fail (–, 0)	Unrealistic planning that is not supported. Irregular work of insufficient quality. Little progress.
Acceptable (1)	Acceptable planning that considers some relevant risks. Regular work of acceptable quality. Acceptable progress.
Satisfactory (2)	Satisfactory planning that considers many relevant risks. Systematic execution with steady progress.
Good (3)	Good planning and basic risk management (i.e. risk identification, impact analysis, and mitigation). Steady progress with high quality.
Very good (4)	Very good planning and good risk management. Steady progress and status tracking with high quality. Basic revision of plans.
Excellent (5)	Excellent planning and very good risk management. Steady progress and status tracking with high quality. Regular revision of plans.

Openness to critique and supervision	
Fail (–, 0)	Inability to develop method(s) or content(s) despite recurring constructive feedback. Little personal or content-related development.
Acceptable (1)	Acceptable development regarding problem solving, creativity and academic writing based on supervision. Mistakes and defects are corrected based on direct feedback.
Satisfactory (2)	Satisfactory development regarding problem solving, creativity and academic writing based on supervision. Mistakes and defects are corrected based on feedback. Limited extrapolation of feedback to other parts of his/her work.
Good (3)	Responsive and adaptive for supervision. Develops ability to self-identify mistakes, errors, and improvement opportunities. Good extrapolation of feedback to other parts of his/her work.
Very good (4)	Ability to request appropriate forms of supervision in different situations. Ability to independently self-identify mistakes, errors, and improvement opportunities. Very good extrapolation and adaptation of feedback to the rest of his/her work.
Excellent (5)	Excellent ability to request and utilize appropriate forms of supervision. Well developed ability to critically examine his/her own or others' work. Excellent extrapolation and adaptation of feedback to the rest of his/her work.

3.1.2 Content

Problem identification and formulation	
Fail (–, 0)	Brief, superficial, unrealistic or defective problem formulation or acceptable formulation of an irrelevant, trivial problem, or unsolvable problem.
Acceptable (1)	Acceptable formulation of a relevant and non-trivial problem.
Satisfactory (2)	Satisfactory formulation of a relevant and sufficiently complex problem.
Good (3)	Good formulation of a relevant and sufficiently complex problem that, when solved, could represent a minor contribution.
Very good (4)	Very good formulation of a relevant and sufficiently complex problem that, when solved, could represent a contribution.
Excellent (5)	Excellent formulation of a relevant and sufficiently complex problem that, when solved, could represent a substantial contribution.

Evaluation	
Fail (–, 0)	Inadequate evaluation based on inadequate evaluation method, improperly applied evaluation method, or lack of analysis. Significant assumptions are not discussed.
Acceptable (1)	Acceptable evaluation using appropriate evaluation method(s). Limited analysis and evaluation regarding some relevant perspectives/aspects. Basic assumptions are discussed briefly.
Satisfactory (2)	Satisfactory evaluation using the most appropriate method(s). Analysis and evaluation of most relevant perspectives/aspects. Assumptions are discussed.
Good (3)	Good evaluation using the most appropriate method(s). Thorough analysis of the most relevant perspective/aspect and satisfactory analysis from remaining perspectives/aspects. Assumptions are discussed thoroughly.
Very good (4)	Exhaustive evaluation of all relevant perspectives/aspects with the method(s) that are best suited. All assumptions are discussed thoroughly.
Excellent (5)	Excellent evaluation that meets all requirements for the evaluation of scholarly work.

Method selection and application	
Fail (–, 0)	Inadequate method selection or poor application of method. Clear motivation, description, or analysis of the selected method is missing.
Acceptable (1)	Acceptable selection of method and acceptable application of method. The selected method is motivated, described, and analysed in an acceptable way. Alternative methods are briefly discussed.
Satisfactory (2)	Satisfactory selection of method(s) and satisfactory application of method(s). The selected method is motivated, described, and analysed in a satisfactory way. Alternative methods are discussed.
Good (3)	Good selection of methods that together represent a comprehensive and appropriate approach. Good application of method(s). The method collection is well motivated, described, and analysed. Alternative methods are discussed thoroughly.
Very good (4)	Very good selection of methods that together represent a comprehensive and appropriate approach. Very good application of method(s). The method collection is very well motivated, described, and analysed. Alternative methods are discussed thoroughly.
Excellent (5)	Excellent selection and application of methods that indicate a thorough understanding of the chosen field and the strengths, weaknesses, and limitations of different methods.

Planning (project plans only)	
Fail (–, 0)	Trivial or unrealistic WBS (Work Breakdown Structure) that is not supported. Considers only trivial risks. Lacks impact analysis and mitigation strategy/plan.
Acceptable (1)	Feasible, but not very realistic WBS and schedule. Identifies relevant and irrelevant risks. Ignores some important risks. Very simple impact analysis and mitigation strategy/plan.
Satisfactory (2)	Largely realistic WBS and schedule. Identifies most important risks. Ignores irrelevant risks. Acceptable impact analysis and mitigation strategy/plan.
Good (3)	Highly realistic WBS and schedule. Identifies all (and only) important risks. Ignores irrelevant risks. Acceptable and useful impact analysis and mitigation strategy/plan.
Very good (4)	Excellent WBS and schedule. Identifies all (and only) important risks. Very good impact analysis and mitigation strategy/plan.
Excellent (5)	Excellent WBS and schedule. Identifies all important risks and further relevant risks. Excellent impact analysis and mitigation strategy/plan.

3.1.3 Contribution (theses only)

Contribution to research area (Master theses only)	
Fail (–, 0)	Lacks contribution or potential contribution is not discussed or analysed.
Acceptable (1)	Limited contribution. Limited analysis of the contribution from a relevant perspective (e.g., scientific, ethical, social, etc.).
Satisfactory (2)	Clear contribution that is analysed from a relevant perspective.
Good (3)	Clear contribution that is analysed from several relevant perspectives.
Very good (4)	Scientific contribution that is analysed from all relevant perspectives.
Excellent (5)	Scientific contribution of satisfactory international quality equivalent to a publishable workshop or conference article.

Contribution to development (MSE theses only)	
Fail (–, 0)	Lacks contribution to research or development or potential contribution is not discussed or analysed.
Acceptable (1)	Limited contribution to research or development. Limited analysis of the contribution from some relevant perspectives (e.g., ethical, social, sustainable development, etc.).
Satisfactory (2)	Clear contribution to research or development that is analysed from some relevant perspectives.
Good (3)	Clear contribution to research or development that is analysed from all relevant perspectives.
Very good (4)	Scientific contribution to research or development of acceptable international quality equivalent to a publishable workshop or conference article.
Excellent (5)	Scientific contribution to research or development of high international quality equivalent to a publishable journal article.

Synthesis	
Fail (–, 0)	Lacks synthesis. Just restates or summarises existing works and own materials.
Acceptable (1)	Limited synthesis. Limited references to analyses of existing works and own materials for some limited informed conclusions.
Satisfactory (2)	Acceptable synthesis. Utilizes analyses of existing works and own materials for informed conclusions. Answers some "So What?" questions.
Good (3)	Satisfactory synthesis. Reorganizes and summarises analyses of existing works and own materials for conclusions that go beyond the analysis of individual works or results. Answers many "So What?" questions.
Very good (4)	Clear thread of reasoning and reorganisation of thoughts based on analyses of existing works and own materials to derive new knowledge. Focuses on "So What?" questions.
Excellent (5)	Clear and excellent of reasoning and reorganisation of thoughts based on analyses of existing works and own materials to derive new knowledge. Focuses on "So What?" questions.

3.1.4 Presentation

Disposition	
Fail (–, 0)	Poor organisation of chapters and sections. No clearly visible thread of reasoning throughout the work.
Acceptable (1)	Acceptable organisation of chapters and sections. Contains mainly those chapters and sections that are required for the type of work in a suitable ordering. Chapter and section headers are mainly generic.
Satisfactory (2)	Satisfactory organisation of chapters and sections. Contains appropriate chapters or sections beyond the required ones in a suitable ordering. Chapter and section headers are adapted to the topic at hand.
Good (3)	Systematic and appropriate disposition that supports the readability and comprehensibility of the text. The text is cohesive on the level of section headers.
Very good (4)	Very good systematic and appropriate disposition that supports the readability and comprehensibility of the text on all levels. The text is cohesive and coherent on the level of section headers.
Excellent (5)	Excellent disposition comparable to a published article in the area.

Adherence to formal rules and templates	
Fail (–, 0)	The document breaks clearly with relevant templates, rules, or guidelines for the text and the citations/references without motivation.
Acceptable (1)	In large, the document follows relevant templates, rules, or guidelines. Some consideration has been given to instructions. In large, citations and references are correct and consistent.
Satisfactory (2)	The document follows relevant templates, rules, or guidelines. Great care has been taken to instructions. Citations and references are mostly correct and consistent.
Good (3)	Follows all relevant rules and instructions regarding content and presentation. Citations and references are basically flawless.
Very good (4)	Follows all relevant rules and instructions regarding content and presentation. Citations and references are basically flawless. Complete contact information, thesis ID, appropriate title, and fully structured abstract.
Excellent (5)	High-quality document that complies with all relevant templates, rules, and instructions.

Description of work	
Fail (–, 0)	The work lacks one or more critical elements. The presentation is cumbersome. There are many and obvious flaws in clarity.
Acceptable (1)	Acceptable breadth and depth. All necessary components are at least briefly described. The description is fairly complete.
Satisfactory (2)	Satisfactory breadth and depth. All necessary components are included and described. The description is complete.
Good (3)	Good breadth and depth. All necessary components are included and described adequately. The description is complete. The text is cohesive.
Very good (4)	Very good breadth and depth. All relevant components are included and described very good. The description is clear, concise, and complete. The text is cohesive and coherent.
Excellent (5)	Excellent breadth and depth. All relevant components are included and described excellently. The description is very clear, concise, and complete. The text is cohesive and coherent.

Analysis and argumentation	
Fail (–, 0)	Analysis and argumentation missing, incorrect, not based on reasonable assumptions, or does not rest on a scientific basis.
Acceptable (1)	Analysis and argumentation are based on some evidence. The level of analysis is generally acceptable for the discussed issues.
Satisfactory (2)	Analysis and argumentation are based on scientific evidence. The level of analysis is satisfactory for the discussed issues.
Good (3)	Analysis and argumentation are based on scientific evidence. Clear analysis and reasoning contribute to insights in the chosen area.
Very good (4)	Analysis and argumentation are based on scientific evidence. In-depth analysis and reasoning contribute to insights in the chosen area.
Excellent (5)	Excellent analysis and argumentation. Advanced analysis and stringent reasoning contribute to substantial insights in the chosen area.

Language	
Fail (–, 0)	Poor. The text contains many grammatical errors, long and complex sentences, contradictions, or slang expressions. The content does not meet the requirements for scientific text.
Acceptable (1)	Acceptable language processing. The text is readable and understandable. Many linguistic shortcomings.
Satisfactory (2)	Satisfactory language processing. In large the subject is treated with clear prose, but does not meet the requirements for scientific text. Some linguistic shortcomings.
Good (3)	Good language processing. The subject is treated with clear prose that largely meets the requirements for scientific text. Some linguistic shortcomings.
Very good (4)	Very good language processing. The subject is treated with clear prose that meets the requirements for scientific text of high quality.
Excellent (5)	Excellent language processing. The subject is treated with very clear prose that meets the requirements for scientific text of very high quality.

3.2 Evaluation of aspects for oral presentations and defenses

3.2.1 Presentation

Oral description of problem and method	
Fail (–, 0)	Neither problems nor methods are motivated sufficiently. Descriptions are generally superficial and indistinct. The audience has difficulties understanding what was done and why.
Acceptable (1)	Acceptable motivation of problems and methods. Descriptions are too brief or too comprehensive, but at an acceptable depth/level, so that the audience, in large, can understand most of what was done and why.
Satisfactory (2)	Clear motivation of problems and methods. Descriptions are too brief or too comprehensive, but at a satisfactory depth/level, so that the audience, can understand what was done and why.
Good (3)	Clear and concise motivation of problems and methods. Descriptions are of adequate length and sufficient depth/level, so that the audience, can understand clearly what was done and why.
Very good (4)	Problems and methods are described and motivated very clearly and concisely. The depth/level of the descriptions allows the audience to get deep insights on what was done and why. Problem aspects that are relevant outside the main topic of the thesis are indicated. Methods are compared to some related work.
Excellent (5)	Problems and methods are described and motivated very clearly and concisely. The depth/level of the descriptions allows the audience to get very deep insights on what was done and why. Problem aspects that are relevant outside the main topic of the thesis are discussed clearly. Methods are compared systematically with related work.

Oral description of analysis and contribution	
Fail (–, 0)	Neither analyses nor contributions are discussed or motivated clearly enough. Descriptions are generally superficial and indistinct. The audience has difficulties to understand conclusions and contributions.
Acceptable (1)	Acceptable motivation of analyses and contributions. Descriptions are too brief or too comprehensive, but at an acceptable depth/level, so that the audience, in large, can understand conclusions and contributions.
Satisfactory (2)	Clear motivation of analyses and contributions. Descriptions are too brief or too comprehensive, but at a satisfactory length and depth/level, so that the audience, can understand conclusions and contributions clearly.
Good (3)	Clear and concise motivation of analyses and contributions. Descriptions are of adequate length and sufficient depth/level, so that the audience, can understand conclusions and contributions clearly.
Very good (4)	Analyses and contributions are described and motivated very clearly and concisely. The depth/level of the descriptions allows the audience to get deep insights into conclusions and contributions. The contributions' impact on areas outside the main topic of the thesis are indicated. Results are compared to related work.
Excellent (5)	Analyses and contributions are described and motivated very clearly and concisely. The depth/level of the descriptions allows the audience to get very deep insights into conclusions and contributions. The contributions' impact on areas outside the main topic of the thesis are discussed clearly. Results are compared systematically with related work.

Overall communication skills	
Fail (–, 0)	The presentation is either too long or too short. The presentation is too vague or too superficial and not on an academic level. Poor language. Poor visuals.
Acceptable (1)	The presentation is largely on time. The presentation is largely on an acceptable academic level. Acceptable language. Acceptable visuals.
Satisfactory (2)	The presentation is on time. The presentation is on an acceptable academic level. Satisfactory language. Satisfactory visuals.
Good (3)	The presentation is on time. The presentation is on an adequate academic level. Good language. Good visuals. Maintains interest of audience.
Very good (4)	The presentation is on time. The presentation is on a high academic level. Very good language. Very good visuals. Maintains interest of audience.
Excellent (5)	The presentation is on time. The presentation is on a very high academic level. Excellent language. Excellent visuals. Maintains interest of audience.

Argumentation- and discussion abilities	
Fail (–, 0)	Insufficient, inaccurate, or very vague answers. Very short or excessively long answers. Poor ability to handle critique constructively and objectively and to argue in defense.
Acceptable (1)	Most answers are clear, and largely accurate but mostly too brief or for lengthy. Acceptable ability to objectively and constructively handle critique and discuss basic positions.
Satisfactory (2)	All answers are clear, factual, and largely accurate, and mostly of adequate length/depth. Satisfactory ability to objectively and constructively handle critique and discuss various positions.
Good (3)	All answers are insightful, clear, factual, and accurate, and of adequate length/depth. Good ability to objectively and constructively handle critique and engage in basic technical and scientific discussions.
Very good (4)	All answers are insightful, clear, factual, and accurate, and of adequate length/depth. Very good ability to objectively and constructively respond to critique and engage in deep technical and scientific discussions.
Excellent (5)	All answers are insightful, clear, factual, and accurate, and of adequate length/depth. Excellent ability to objectively and constructively respond critique and engage in deep technical and scientific discussions.

3.3 Evaluation of aspects for written oppositions

3.3.1 Contents

Description of critical review	
Fail (–, 0)	The report is sloppily executed and contains numerous errors. The presentation is generally unclear and inadequate.
Acceptable (1)	The critique is largely objective, relevant, and accurate. Contains some language and content errors. Acceptable structure and length/depth.
Satisfactory (2)	The critique is objective, relevant, and accurate. Contains few language and content errors. Satisfactory structure and length/depth.
Good (3)	The critique is balanced, objective, relevant, and accurate. Contains very few language and content errors. Well-structured, well-organized, and of adequate length/depth.
Very good (4)	The critique is balanced, objective, relevant, and accurate. Contains very few language and content errors. Well-structured, well-organized, and of adequate length/depth. Comments are systematically arranged and each comment is clearly warranted.
Excellent (5)	The critique is very balanced, objective, relevant, and accurate. Basically free of errors. Excellent structure, organization, and length/depth. Comments are systematically arranged and each comment is clearly motivated scientifically. Related work is cited as necessary.

Description of necessary revisions and recommended revisions	
Fail (–, 0)	Suggestions are carelessly described and contain numerous errors. Unclear how the suggestions would improve the reviewed thesis. The presentation is generally unclear and inadequate.
Acceptable (1)	Suggestions are mostly constructive, relevant, and accurate. In large, it is clear how the suggestions can be implemented and how they might improve the reviewed thesis. Contains some language and content errors.
Satisfactory (2)	Suggestions are constructive, relevant, and accurate. It is clear how the suggestions can be implemented and how they will improve the reviewed thesis. Contains few language and content errors. Satisfactory structure and length/depth.
Good (3)	Suggestions are constructive, highly relevant, and accurate. It is clear how the suggestions can be implemented and how they will improve the reviewed thesis. Contains few language and content errors. Well-structured, well-organized, and of adequate length/depth.
Very good (4)	Suggestions are very constructive, highly relevant, and accurate. Very clear how the suggestions can be implemented and how they will improve the reviewed thesis. Contains very few language and content errors. Well-structured, well-organized, and of adequate length/depth. Suggestions are systematically arranged and each suggestion is clearly warranted.
Excellent (5)	Suggestions are very constructive, highly relevant, and accurate. Very clear how the suggestions can be implemented and how they will improve the reviewed thesis. Basically free of errors. Excellent structure, organization, and length/depth. Suggestions are systematically arranged and each suggestion is clearly motivated scientifically. Related work is cited as necessary.

3.3.2 Presentation

Analysis and argumentation	
Fail (–, 0)	Analysis and argumentation missing, incorrect, not based on reasonable assumptions, or does not rest on a scientific basis.
Acceptable (1)	Analysis and argumentation are based on some evidence. The level of analysis is generally acceptable for the discussed issues.
Satisfactory (2)	Analysis and argumentation are based on scientific evidence. The level of analysis is satisfactory for the discussed issues.
Good (3)	Analysis and argumentation are based on scientific evidence. Clear analysis and reasoning contribute to insights in the chosen area.
Very good (4)	Analysis and argumentation are based on scientific evidence. In-depth analysis and reasoning contribute to insights in the chosen area.
Excellent (5)	Excellent analysis and argumentation. Advanced analysis and stringent reasoning contribute to substantial insights in the chosen area.

Language	
Fail (–, 0)	Poor. The text contains many grammatical errors, long and complex sentences, contradictions, or slang expressions. The content does not meet the requirements for scientific text.
Acceptable (1)	Acceptable language processing. The text is readable and understandable. Many linguistic shortcomings.
Satisfactory (2)	Satisfactory language processing. In large the subject is treated with clear prose, but does not meet the requirements for scientific text. Some linguistic shortcomings.
Good (3)	Good language processing. The subject is treated with clear prose that largely meets the requirements for scientific text. Some linguistic shortcomings.
Very good (4)	Very good language processing. The subject is treated with clear prose that meets the requirements for scientific text of high quality.
Excellent (5)	Excellent language processing. The subject is treated with very clear prose that meets the requirements for scientific text of very high quality.

3.4 Evaluation of aspects for oral oppositions

3.4.1 Presentation

Overall communication skills	
Fail (–, 0)	The presentation is either too long or too short. The questions are too vague or too superficial and not on an academic level. Most questions are irrelevant. Poor language.
Acceptable (1)	The presentation is largely on time. The questions are largely relevant and on an acceptable academic level. Acceptable language.
Satisfactory (2)	The presentation is on time. Most questions are relevant and on an satisfactory academic level. Satisfactory language.
Good (3)	The presentation is on time. All questions are relevant and on an adequate academic level. Good language. Maintains interest of audience.
Very good (4)	The presentation is on time. All questions are highly relevant and on a high academic level. Very good language. Maintains interest of audience.
Excellent (5)	The presentation is on time. All questions are highly relevant and on a very high academic level. Excellent language. Maintains interest of audience.

Analysis and argumentation	
Fail (–, 0)	Irrelevant, inaccurate, or very vague questions. Very short or excessively long questions. More statements than actual questions.
Acceptable (1)	Most questions are clear, and largely relevant and accurate. Acceptable ability to present critique objectively and constructively.
Satisfactory (2)	Most questions are clear, relevant and accurate. Satisfactory ability to present critique objectively and constructively. Acceptable ability to engage in technical or scientific discussions.
Good (3)	All questions are clear, relevant and accurate. Good ability to present critique objectively and constructively. Satisfactory ability to engage in technical and scientific discussions.
Very good (4)	All questions are insightful, very clear, highly relevant and accurate. Very good ability to present critique objectively and constructively. Very good ability to engage in deep technical and scientific discussions.
Excellent (5)	All questions are very insightful, very clear, highly relevant and accurate. Excellent ability to present critique objectively and constructively. Excellent ability to engage in deep technical and scientific discussions.

Chapter 4

Document templates

The project plan, the opposition report, and the thesis shall be written using official document templates. Refer to *Degree projects at DIDD, DIPT, and DIKR* at the Student Portal on the BTH website to find these document templates. This chapter describes necessary and recommended content as well as additional formal rules and requirements that govern the content of the documents to be produced in the degree project courses.

For all documents, size should be appropriate for the content. That means that you should write concise and to the point. A longer document will not necessarily be better. On the contrary, adding irrelevant, inappropriate, or repetitive content will likely result in lower marks. For details on academic writing, you should consult the course literature.

4.1 Document template for the project plan

The project plan should include formal data about the thesis project, like title, author, person ID, email-address, and supervisor name(s) plus the following sections, preferably in this order: introduction, aim, objectives, research questions, method, expected outcomes, time and activity plan, risk management, and references.

The introduction should describe the background and context of the proposed work. It should identify a problem and motivate its relevance. Furthermore, the introduction should review related work and describe how the proposed work fits in. The aim should describe the overall goal of the thesis in one or two brief sentences. Compared to this overall goal, the objectives are more clearly defined. The objectives are usually measurable and should be completed before specific deadlines. The research questions section may include one or more research questions or one or more hypotheses. In some cases, this section may include both hypotheses and research questions. In general, research questions should be concretely and clearly defined. Aims, objectives and research questions/hypotheses should be clearly related to each other. The method section should propose a suitable approach for answering the research questions together with a motivation for choosing the proposed approach. Expected outcomes briefly states the main

expected outcomes. The time and activity plan breaks down the work into reasonable tasks and a reasonable schedule. In risk management, various problems that may threaten the timely delivery of acceptable results are briefly investigated.

4.2 Document template for monograph theses

The thesis is the main artefact of the degree project. Accepted theses will be published electronically. It is therefore important that all theses have a uniform and professional appearance and, to some extent, a predictable breakdown of the content. A uniform appearance is particularly important with respect to the front and back of the title page. The title page should therefore be produced by filling in the necessary information in the document template for theses. This document template is only available in Microsoft Word format.

The title page should be followed by a structured abstract which should summarize the report by describing: context, purpose, method, results, and conclusions. At least one and a maximum of three keywords must be specified in succession after the structured abstract.

The next page can be set aside for thanks or acknowledgements to those who helped you during the thesis work. The content and format of this page is up to you, but the text should only highlight people who actually contributed to the thesis in some way. These persons should be arranged by the extent of their respective contributions. Usually this means that the student would like to thank the supervisor, any other contributing colleagues, fellow students, or family members.

The order of the main content of the thesis depends on the actual topic of the thesis. Different genres, research areas, or research methods have different traditions. You should therefore carefully investigate what is appropriate for your particular topic. The following items should, however, be included for all types of theses (but not necessarily in this order): table of contents, introduction, related work, problem, objectives, methodology, results, analysis and discussion, conclusions, and bibliography. The thesis text should have a scientific basis and be free from grammatical errors. Your supervisor is not responsible for pointing out language, style, and grammar issues. This would furthermore be a waste of precious subject expert time.

4.3 Document template for compilation-style theses

A thesis can be also written as a scientific journal article instead of a monograph. A journal article presents the materials in a more concise form and usually contains less basic information about the research methodology (since it targets a more narrow audience with more knowledge of the theory and methods of the research area in question than

the general population). Due to this reason and since the journal article format is rather dense in general, it is difficult to include certain content that is required (and assessed) in theses. The compilation-style thesis therefore needs to include an introductory chapter that precedes the journal article and which includes a more thorough description and motivation of the research methodology (and any additional topics that are required in the degree project course, but which are not included in the journal article).

4.4 Document template for opposition reports

The opposition report comprises four main parts: introduction, critical review, required changes and recommended changes.

The introduction gives a brief overview over the reviewed thesis' content, results, and contributions from the reviewer's point of view. The critical review highlights the strengths and weaknesses of the reviewed thesis. Required changes points out issues that need to resolved in the final version of the thesis. Recommended changes points out further issues that are less critical, but would help to improve the thesis further.