

### Evaluation Guidelines for Bachelor Theses

The learning objectives of the bachelor thesis and seminar are the following: the student understands the scientific thinking, can find existing information, can analyze and apply the available knowledge, and can write scientific text and give a presentation. The bachelor thesis may have an experimental or applied part, or it may be entirely based on literature. A good bachelor thesis includes results of the student's own thinking, such as combining and applying knowledge in a new way. However, the bachelor thesis is not required to present new scientific discoveries or solutions to open engineering or business problems. The focus in the seminar is on the formal aspects of scientific writing.

The evaluation is based on the written thesis and, for a small part, on the seminar presentation. The seminar may include other assignments that do not influence the grade. The required assignments must, however, be completed to receive the study credits.

There are many accepted practices and quality criteria for scientific thinking and writing. The purpose of the evaluation criteria is to direct the student's attention to these different goals and requirements. Therefore, this document defines a relatively long list of criteria. Nevertheless, the thesis is evaluated and graded as a whole and not by calculating an average across the different criteria.

The thesis advisor evaluates the thesis and provides an evaluation statement. The evaluation statement consists of a form where the advisor marks the key strengths and weaknesses of the thesis in relation to the evaluation criteria, a proposed grade, and a written evaluation. The written evaluation typically starts with a brief overview of the thesis, then describes a few important strengths and weaknesses, and ends with an overall statement. When using the evaluation form, it is not necessary to write text about each evaluation criterion separately. The responsible teacher of the bachelor seminar verifies consistent interpretation of the evaluation criteria and decides and issues the final grade.

### Evaluation criteria

<b>Command of the topic</b>
<b>Knowledge of the topic</b> The author has carefully acquired knowledge about the topic area. The reader gets a good overview of the topic from the thesis.
<b>Sources of information</b> The thesis makes use of high-quality research literature and other reliable sources of information. The selected sources are representative of the scientific research and other knowledge in the topic area.
<b>Theoretical and conceptual frameworks</b> The thesis proficiently describes and makes use of important concepts, abstractions, and scientific theories related to the topic area.

<b>Goals, implementation, and results</b>
<b>Definition of the goals</b> The topic and goals of the thesis are clearly described. The thesis has a well-defined research or engineering question, to which it seeks answers.
<b>Methods</b>

The methods used in the thesis project have been defined, and they fit the purpose. The methods are applied following the best practices of the field.
<b>Results and conclusions</b> The thesis has understandable results and/or conclusions. They are logical and well justified, and the thesis includes a critical evaluation of their significance and reliability.
<b>The author's own work and thinking</b> The thesis contains results of the author's own work and thinking. It is easy for the reader to identify, on one hand, the author's own contribution, and on the other hand, content that is directly based on literature.
<b>Challenge</b> The topic and goals are challenging considering the stage of the student's education. The requirement level of the work is in line with the learning goals of the bachelor's degree.

<b>Presentation</b>
<b>Structure and style</b> The structure, presentation, and writing style of the thesis are suitable for a scientific study.
<b>Citations</b> Information sources are cited following the standard practices of the field. The references help the reader to assess the origin of the information and to find further information.
<b>Figures, tables, and examples</b> The thesis includes figures, tables, and examples, which are meaningful and illustrative. They are original work by the author, or they have been adapted for their purpose.
<b>Language</b> The language in the thesis is correct Finnish, Swedish, or English.
<b>Readability</b> The text is clear and supports the reader's understanding of the content.
<b>Seminar presentation</b> The seminar presentation is clear, illustrative, and provides useful information to the audience. The presentation covers selected core content from the thesis. The author is able to answer questions about the work.

<b>Process</b>
<b>Following instructions</b> The author has followed the provided instructions, the advisor's advice, and the planned timetable. The timetable may have been agreed individually with the advisor.
<b>Scope</b> The thesis goals and the amount of work correspond to the number of study credits. If necessary, the scope has been adjusted during the thesis process.
<b>Independent work</b> The thesis research and writing are independent work by the author. When the project has been conducted in a group or in cooperation with the advisor, the thesis describes the author's individual contributions.

### Requirements for the grades

**5:** The thesis satisfies the evaluation criteria with no major weaknesses. The results of the author's own thinking and work are prominent in the thesis. The work has special strengths.

**4:** The thesis satisfies the evaluation criteria with no major weaknesses. Additionally, the thesis has at least one clearly observable strength. For example, the thesis may demonstrate deep knowledge of the topic area, it may include a carefully conducted experiment or applied project, or it may present knowledge in a new form that is useful to the reader.

**3:** The thesis satisfies most of the evaluation criteria with no major weaknesses. Alternatively, the thesis has clear strengths but also weaknesses, so that it does not meet the criteria for the higher grades.

**2:** The thesis satisfies most of the evaluation criteria, but it also has some significant weaknesses.

**1:** The thesis has serious weaknesses related to multiple evaluation criteria. Judged as a whole, it nevertheless meets the requirements for a bachelor thesis.

**0:** The thesis has serious weaknesses related to multiple evaluation criteria. Judged as a whole, it does not meet the requirements for a bachelor thesis.