

## Master Thesis Project Grading Criteria

These grading criteria are guided by the learning outcomes from the course syllabus. Essentially, all of the statements below should be true to achieve a certain grade (with possibly 1-2 well-motivated exceptions). Grade 4 requires grade 3 statements to be fulfilled, and grade 5 requires grade 3 and 4 statements to be fulfilled.

Students are individually graded. The grade is decided by the examiner based on input from the supervisors and the opponent – taking into account these criteria. Students are welcome to discuss the grade and these criteria with supervisors, and, in case of disagreement, also with the examiners.

### 1. Overview, understanding of needs and related work in the problem area

Grade 3

- Has searched and got a satisfactory list of relevant references
- Has read the referenced work and knows which references are the most important and which are less important for the project
- Relates own project to the most important references
- Summarizes the most important related work and uses references properly to cite related work

Grade 4

- Relates the references also to each other
- Uses information from references to support own argumentation and to draw conclusions
- Uses the references to limit the project scope and concentrate on an important problem

Grade 5

- Highlights weak and strong parts in referenced works and how they differ from own work

### 2. Understanding and refinement of the problem and research questions

Grade 3

- Can define the problem and interesting research questions to investigate

Grade 4

- Identifies the core of the problem and limits the research question(s) to the essentials
- Comes up with methods that are applicable to the problem posed

Grade 5

- Identifies the gap in existing knowledge, and formulates the problem to fill this gap
- Pinpoints methods needed to investigate the problem and answers the questions posed

### 3. Method and setup of study/experiments to get and evaluate results

Grade 3

- Understands how to investigate the problem and answer questions
- Develops methods to make a meaningful experiment that tests a solution/approach/hypothesis solving the problem or answering the questions, but needs help from the supervisor to get it right

Grade 4

- Develops methods to make a meaningful experiment that tests a solution/approach/hypothesis solving the problem or answering the questions independently
- Understands the relation between experiments made and the significance of results

Grade 5

- Defines the right tests/measurements to get sufficient results and evidence to draw interesting conclusions

### 4. Solution to the problem or answer to the question(s) and other results

Grade 3

- Regularly solves minor problems and gets the results underway, without supervision
- Is able to solve larger issues with overall guidance from the supervisor
- Requires detailed instructions from the supervisor only for most complex issues
- Results are acceptable, but the supervisor can point out things that would improve them
- Can identify and formulate significant strong and weak points in the results

Grade 4

- Can, with some supervision, solve realistic problems and get adequate results
- Results are good, and only a few things could have been done better or are missing
- Results could be published (generally in weaker venues)
- Can, with minor supervision, tell how the result could have been improved
- Can, with minor supervision, formulate interesting future directions for the project

#### Grade 5

- Can, without supervision, solve hard problems and create feasible solutions
- Can evaluate whether a solution is feasible or not and analyze the quality of results
- Results are excellent (publishable in good venues, or patentable)
- Can, without supervision, evaluate and comment on the results in relation to other work that has been done in the field

### 5. Initiative, creativity, ambition, planning and organization

#### Grade 3

- Takes an active part in meetings, has prepared questions, and makes notes during supervision
- Has produced a quality project plan, including also a realistic time plan
- Would not have been able to get the work done in time without a push from the supervisor

#### Grade 4

- Shows initiative and takes decisions that drive the project forward
- Comes up with own ideas that become a noticeable part of the project
- Keeps the supervisor informed and updates the project plan or time plan if necessary
- Can put in extra effort when necessary
- Has followed the time plan and worked regularly so that things do not pile up at the end

#### Grade 5

- Asks for and uses feedback from the supervisor for reflection, rather than asking for solutions
- Has done the work well beyond the minimum requirement, like extensive simulations to prove a point; following up “loose ends”; improving the code; polishing the report’s language, figures, and diagrams
- Writes a conference paper or a patent application based on the work
- Comes up with an own original idea, which becomes a substantial part of the project
- Needs very little supervision to keep the time plan and be ready on time

### 6. Final oral presentation

#### Grade 3

- Presents the problem, the methods used, and the proposed solution hypothesis in a clear way
- Presents a clear analysis of the problem, the questions, and the results
- Is able to describe basic conclusions from the work/results
- Can answer simple questions from the audience on the subject

#### Grade 4

- Presents the project in an attractive way with suitable illustrations
- Can discuss different aspects of the problem and answer also more complex questions
- Is able to present convincing conclusions drawn from the work/results

#### Grade 5

- Gives an excellent presentation, engaging the audience and generating interesting questions
- Discusses and answers all questions in a relevant way
- Is able to draw deep conclusions and present non-trivial future work

### 7. Final report

#### Grade 3

- Report is complete, understandable, and consistent (including title, abstract, introduction, background, problem, questions, research method, solution, results, conclusions, etc.)
- The work is related to societal needs, ethical or sustainability considerations where relevant

#### Grade 4

- Report is well written, and the work motivated also in a system, application, and societal context
- The English is correct, and the text has a good structure and flows smoothly
- Figures, tables, and diagrams are relevant, referred to, and support/exemplify the text
- The results and the conclusions are clearly stated

#### Grade 5

- The report is, with minor supervision, very well-written
- The report is publishable, in a shorter version, provided the result is good enough

### 8. Timeliness

Timeliness is part of the grade evaluation (unless delays are caused by external factors), since demonstrated ability to work within given time frames is a requirement for a MSc degree. Delayed submission of midway and final reports, or the presentations, will influence the grade strongly.