

Guidelines for the PhD Thesis and Competencies of the PhD Candidate

A PhD is an academic degree certifying that the recipient is an independent researcher, demonstrated by original research in a specific field, and by the achievement of professional competencies.

The evaluation of the required academic level is traditionally based on the assessment of the PhD Thesis and defense, which is often entirely or partially supported by publications in academic literature. The evaluation of professional competencies is in part evaluated at the public defense of the thesis, but it mainly relies on the supervisors' assessment of the skills acquired during the research period. In both cases, there is a need for clarity of the evaluation criteria in a language that helps candidates and supervisory teams to discuss early in the process the goals and expectations related to the PhD trajectory.

The **purpose** of these guidelines is to provide candidates and supervisory teams with a basis to discuss the requirements and competencies. The guidelines distinguish between different qualities of the candidate's research, thesis, and competencies, and it provides descriptions of what is deemed acceptable or problematic.

The **function** of the guidelines is to lay out a language to discuss these matters. It is *not* to be used as a grading scheme. It does *not* allocate weights or percentages to the different dimensions, and it does *not* quantify elements. Such quantifications vary significantly between the different research domains within our university and its faculties. However, these guidelines should be interpreted as a call for the research communities to achieve clarity at their own level.

The **evaluation levels** in these guidelines are good, satisfactory, and unsatisfactory. The level *cum laude* is not considered here because it is adequately covered in article 18 of the Doctoral Regulations.

This **first edition** of the guidelines has been developed based on extensive consultations with graduate school directors, supervisors, PhD candidates, and the Board for Doctorates. We ask supervisors and candidates to use it in the first year of the PhD trajectory and encourage them to use them throughout the PhD trajectory.

*Suggestions for improvement are welcome.
Please let us know through your Faculty Graduate School.*

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	THESIS	GOOD ¹	SATISFACTORY	UNSATISFACTORY
1	Originality of the Research	The contribution of the research is substantial. It addresses a new question or approach that is relevant to others in the field.	The contribution of the research is modest, addressing an interesting but limited aspect for those who work in the same subject.	The contribution of the research is negligible, either because it is very similar to previous work or because the executed research is trivial.
2	Scientific Quality²	The research work is cohesive, it uses appropriate research methods to answer the research question. Results are sound and reproducible.	The research work is sufficiently cohesive and adequately addresses the research question. Results are sound and reproducible.	The research work lacks cohesion, fails to sufficiently address the research question. Methods are not properly selected or used. Results are not sound or reproducible.
	Dissemination	Most chapters, or the thesis as a whole, are publishable (or have been published) in first-tier journals or proceedings or by reputable book publishers. The research follows, when possible, open science approaches.	Chapters are publishable (or have been published) in well-respected journals, conferences or book publishers. The research follows, when possible, open science approaches.	The chapters will not be publishable in any reputable journal, conference, or by any reputable publisher. Even when possible, the research does not follow open science approaches.
	Significance	The research work is very likely to get used (or has been used) by other researchers and/or other stakeholders.	Parts of the research work are likely to get used by other researchers and/or other stakeholders.	The research work is unlikely to be used by other researchers and/or other stakeholders.
3	Reflection on the Method	The thesis describes clearly what was done, the suitability of the methods used and addresses why the candidate did it.	The thesis describes adequately what was done and how, even if it does not always show why the candidate did it.	The thesis does not clearly show what was done, how and/or why the candidate did it.
	Positioning & Societal Impact³	The thesis identifies and discusses the relation to existing knowledge and societal impact.	The thesis shows a limited view on how results fit in the existing knowledge and/or what the societal impact can be.	The thesis does not show how the results fit in the existing knowledge, and/or what the societal impact can be.
	Limitations	Limitations of the research are clearly identified, also how they affect the conclusions.	Most limitations of the research are identified, but it is less clearly discussed how they affect the conclusions.	Limitations of the research are not identified and/or discussed.
4	Presentation, Clarity	Writing is accurate, clear, concise, and well-organized. The figures and layout are correct and clear, with no more than a few minor flaws. The thesis effectively communicates complex ideas.	Writing is often accurate, clear, concise, and well-organized. The figures and layout are adequate, but the level of clarity varies. The thesis requires moderate effort from the reader to comprehend the intended meaning.	Writing is inaccurate, ambiguous, lacks structure. The figures and layout are poor. The presentation significantly limits understanding of the research work.
	Structure	Structure of the thesis is correct, even if some sections are less well placed or less well structured.	Main structure of the thesis is correct, placement and structure of several sections may not be fully logical.	The thesis is badly structured, often information is missing or appearing at the wrong spot.
	COMPETENCIES ⁴	GOOD	SATISFACTORY	UNSATISFACTORY
A	Independent	The candidate has ownership of the research direction; takes initiatives to further strengthen research; adjusts research to developments in the field, and also ... <i>Continue under satisfactory. --></i>	The candidate can independently carry out research; can effectively use advise from supervisors; can defend methodological choices and or results, understands the limitations of the work.	The candidate requires detailed/structured guidance in all steps of the research; is not able to defend methodological choices or results; cannot independently identify limitations of the work.
B	Organized	The candidate is flexible to changes in circumstances; makes effective use of time, can timely identify potential problems in the research plan, and also ... <i>----></i>	The candidate has an appropriately structured and planned approach to data collection, analysis and writing; makes sufficient use of time.	The candidate depends on others to set deadlines & milestones in the research progress; is not able to establish a clear work plan.
C	Communicative	The candidate actively engages with stakeholders and other society actors to further the research and its impact, and also... <i>----></i>	The candidate can effectively build on the knowledge of others to further research progress and can communicate research work to peers.	The candidate works mostly in isolation and is not able to effectively communicate own work to peers.

¹ These guidelines do not address the criteria for *cum laude*, which are adequately covered in the Doctoral Regulations. ² Criteria for Scientific Quality differ per research community; this guideline has been phrased to hold across TUD. ³ Societal Impact has become increasingly important; here also, criteria listed in a faculty's recent Research Assessment (VSNU Standard Evaluation Protocol) can serve as inspiration. ⁴ In the Bologna policy, the EU puts increasing emphasis on interdisciplinary experience and the development of competencies. The TU Delft competencies model can be found on the Graduate School website.