

Rubric for the assessment of the master's dissertation

Master of Science in de
ingenieurswetenschappen, Master of Science in
Engineering

Master's dissertation of 24 or 30 credits



	EXCELLENT	GOOD or VERY GOOD	SUFFICIENT	INSUFFICIENT or WEAK
Independently search for relevant and up-to-date information and critically process it.				
Research	Very thorough. The material provided by the student includes nearly all relevant and recent sources.	Thorough coverage, with only minor gaps. The student mostly provides material that is relevant and up-to-date.	Basic coverage. The student provides limited material that is mostly relevant and up-to-date.	Limited coverage (e.g., outdated, irrelevant, too narrow), with some important areas missing. The student is unable to independently gather material.
Processing and critical analysis	High-level critical analysis and comparison of results. Sources are integrated into a convincing narrative.	Thorough critical analysis with a functional comparison of results from the literature. Sources are integrated into a coherent narrative.	Basic level of critical analysis. Limited comparison of results from the literature.	Limited to no critical analysis, primarily descriptive. A comparison of results from the literature is missing or inadequate.
Formulate a research question, starting from a complex, scientific problem within the own engineering discipline.				
Insight into the problem statement	The student situates the problem statement within the state of the art of the research field. The analysis of the problem statement is nuanced and detailed.	The student positions the problem statement within the research field. The analysis of the problem statement is thorough.	The student somewhat relates the problem statement to the research field. The analysis of the problem statement is correct but superficial.	The student fails to position the problem statement within the research field.
Formulation of the research question	The work contains a clear research question as a result of independent and convincing reflection on the problem statement.	The work contains a clear research question as a result of extensive reflection on the problem statement.	The work contains a concise research question as a result of limited reflection on the problem statement.	The work lacks a clear research question. The connection to the problem statement was not or insufficiently explored or reinforced.

	EXCELLENT	GOOD or VERY GOOD	SUFFICIENT	INSUFFICIENT or WEAK
Apply a creative and/or innovative, appropriate research methodology.				
Organizational skills and application	The research methodology is solid and proactive, and it is aligned with the obtained results. The student works systematically, leading to accurate and precise outcomes. The student adapts smoothly to unforeseen circumstances.	The research methodology is solid, and the student works systematically, resulting in accurate and precise outcomes. The student makes adjustments as needed.	The research methodology is realistic, and the student works somewhat organized, resulting in useful outcomes. The student shows sufficient flexibility to adapt to changes.	The research methodology is inadequately developed or absent. The student works carelessly, chaotically, and unprepared, resulting in few useful outcomes. The student fails to adequately adjust the methodology or anticipate unforeseen circumstances.
Quality of the methodology	The student creatively and critically adjusts the standard research methodologies within the field.	The student consistently adapts the standard research methodologies within the field to the given problem statement.	The student restricts themselves to the standard research methodologies.	The student makes errors against the standard research methodologies within the field.
Integratively apply advanced knowledge of the own engineering discipline to the given problem.				
Applying knowledge	The student combines advanced knowledge within the discipline and applies it convincingly to the problem statement.	The student has a high level of mastery in the discipline and effectively applies relevant knowledge to the problem statement.	The student has a sufficient grasp of the discipline. Application of relevant knowledge to the problem statement is limited.	The student has an insufficient grasp of the discipline and fails to adequately apply relevant knowledge to the problem statement.
Implementation	The implementation is highly efficient and has been thoroughly tested.	The implementation functions properly and has been adequately tested.	The implementation just meets the expectations and was tested to a limited extent.	The implementation does not meet expectations, and it lacks proper testing.

	EXCELLENT	GOOD or VERY GOOD	SUFFICIENT	INSUFFICIENT or WEAK
Problem-solving thinking under uncertain and/or conflicting conditions, with attention to the appropriate level of abstraction.				
Conceptual problem-solving thinking	The student spontaneously and fluently reasons at different levels of abstraction when searching for solutions and developing a methodology.	The student incorporates an appropriate level of abstraction when developing the methodology and occasionally seeks this out when searching for solutions.	The student only explores an appropriate level of abstraction when developing the methodology.	The student fails to sufficiently identify the appropriate level of abstraction when developing a methodology or searching for solutions.
Dealing with uncertainty	The student integrates uncertainties and/or conflicting conditions in a comprehensive and creative way and develops corresponding solution strategies in an excellent manner.	The student captures the uncertainties and/or conflicting conditions and provides a solid development of corresponding solution strategies	The student minimally integrates uncertainty and/or conflicting conditions and, with support, achieves partial development of solution strategies.	The student overlooks uncertainties and conflicting conditions and fails to sufficiently connect them to a corresponding solution strategy.
Critically interpret and validate own results, write them down, summarize them, and clearly communicate them orally in English while substantiating the decisions made.				

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Justifying the choices made	The student supports the choices made with excellent reasoning and provides a high-level, clear, relevant, and persuasive argumentation.	The student's reasoning is generally clear and supported by relevant and clear arguments.	The student supports the choices made to a sufficient extent. The argumentation is open to improvement.	The justification of reasoning is insufficiently consistent or too superficial, and the argumentation lacks persuasiveness.
Critical analysis	In processing and validating their own results, the student consistently demonstrates a critical mindset and always keeps the research question as the ultimate goal in mind.	The student reflects appropriately on their own results and provides an accurate validation.	The student restricts themselves to a basic level of critical reflection on their own results. Similarly, only limited steps are taken regarding validation.	The student reflects insufficiently on their own results and overlooks any form of validation.
Clear communication	The student communicates very clearly and with great attention to structure and detail. The communication is smooth, well-organized, and logically coherent.	The student communicates clearly, with attention to detail and logical structure.	The student communicates sufficiently clearly, but the communication sometimes lacks precision and logical structure.	The student communicates unclearly and struggles to convey ideas. The communication is not logically structured and lacks cohesion.
Work and collaborate in a professional manner.				

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Organisation and time management	The student is always punctual in meeting commitments and consistently meets all deadlines. The reporting is complete and functional.	The student adheres to commitments and never misses deadlines without a valid reason. The reporting is relevant and well-developed.	The student sometimes fails to meet commitments and occasionally misses deadlines without a valid reason. The reporting is limited.	The student regularly fails to meet commitments and often misses deadlines without a valid reason. The reporting is minimal.
Attitude	The student is highly motivated, works carefully, and respects the work environment. The student works independently, shows initiative, and takes on the role of 'project owner.'	The student is motivated and takes initiative. The student utilizes the coaching from mentors and thus becomes more independent. The student always considers the work environment.	The student is motivated but takes little initiative. Coaching from mentors is used only minimally to make progress. There is adequate respect for the work environment.	The student shows little to no motivation or initiative. The student works carelessly, does at most what the mentors ask, and pays little or no attention to the work environment.
Reflect on own research topic and chosen methodology from various perspectives, such as sustainability, international context, and ethical implications.				
Reflection	The reflection is critically constructed and connects the work insightfully with one or more societal perspectives. It demonstrates a deep analysis and includes suggestions for improvement.	The reflection is well-structured, considers the work from one or more societal perspectives, and demonstrates a thorough analysis.	The reflection is structured and addresses one or more societal perspectives from a limited analysis.	The reflection is inadequately structured and too superficial. Societal challenges are barely related to the underlying problem statement or methodology.
Critically reflect on own thinking and actions, and handle feedback and the limits of the own competencies in a conscious and responsible manner.				

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Handling feedback	The student responds constructively to feedback and implements suggestions for improvement very effectively and accurately.	The student responds well to feedback and implements most suggestions for improvement.	The student generally responds well to feedback and shows limited improvement in processing it.	The student shows little to no willingness to accept or use feedback.
Critical view of one's own performance	The student possesses excellent self-reflection, evaluates their own performance deeply, and links this to effective strategies for personal and professional growth.	The student has good self-reflection. Recognition of personal limitations and mistakes leads to active engagement in improvement.	The student has reasonable self-reflection and insight into personal limitations or mistakes. There is a willingness to improve.	The student has minimal self-reflection and finds it difficult to acknowledge personal limitations or mistakes.
Scientific integrity and ethical conduct.				
Scientific integrity	The student provides spontaneous and consistent evidence of transparency and accountability in all aspects of the research.	The student references correctly and provides good and transparent data processing with a view to the reproducibility of results.	The student references correctly, pays adequate attention to the proper processing of data, and ensures the verifiability of results.	The student pays insufficient attention to the correct processing of data, and crucial elements are missing to verify the originality of the results.
Ethical conduct	The student spontaneously demonstrates ethical considerations.	The student is attentive to ethical considerations and adheres to ethical guidelines.	The student takes ethical considerations to heart and adheres to ethical guidelines.	The student has insufficient regard for ethical considerations or guidelines.