Thesis assessment rubrics at the Department of Engineering Geology and Hydrogeology (LIH), RWTH-Aachen University (theses in engineering geology only; for theses in hydrogeology, please contact your supervisor)

This rubric is intended to enhance the homogeneity of assessments and the communication of the results with both, students and colleagues, and it clearly sets out expectations from the thesis candidate.

The grades are divided into the following levels:

GRADE	GRADE SPREAD	DESCRIPTORS
1.0	90 – 100 %	Outstanding, among top 10% of all MSc theses
1.3	86 – 89 %	Exceptional
1.7	81 – 85 %	Distinctive
2.0	77 – 80 %	Very competent
2.3	73 – 76 %	Competent
2.7	67 – 72 %	Solid technical control
3.0	63 – 66 %	Sufficient
3.3	59 – 62 %	Fair mastery
3.7	54 – 58 %	Basic mastery
4.0	50 – 53 %	Mediocre
5.0	0 – 49 %	Failed

To determine the grade for each criterion in the list below, "always start at the lowest grade and test whether the student should be awarded the next higher grade. Note that in some cases, achievements of a lower level are not repeated at the higher level because the lower level achievements are implicit in the higher level" (Moene 2010). Please carefully assess where the student's performance lies between any two categories for the grades 3.x-1.x and assign the percentage according to the table above. The accompanying Excel spreadsheet serves for grade calculation and for submission to the central exam office (Zentrales Prüfungsamt, ZPA).

"Outstanding" (1.0) as the final grade should only be given if the thesis deserves a high distinction (*cum laude*) without reserve.

Important note on scientific ethics: we have zero tolerance for plagiarism at LIH. Each case of plagiarism will be reported and the thesis marked as "failed" (5.0).

Item		5.0	4.0	3.x	2.x	1.x
1. Objectives and Work Ethics (5%)	1.1	The scope and objectives of the thesis are poorly defined and inadequately contextualized. Little evidence exists that the student has fully understood the basic thesis topic.	Although the scope and objectives of the thesis are defined, they are inadequately embedded in the scientific context.	The objectives of the thesis are adequately defined, but only partly contextualized and understood.	The objectives of the thesis are well defined, are contextualized and the topic is well understood.	The **objectives** of the thesis are clearly defined and embedded in the scientific context. The student demonstrates excellent and in-depth **understanding** of the thesis topic.
	1.2	Student rarely arranges meetings with supervisor, is not prepared for meetings, does not discuss the thesis topic or asks specific questions to improve understanding.	Student rarely arranges meetings with supervisor and is not prepared for the meetings.	Student arranges regular meetings, but is not well prepared.	Student arranges regular meetings with supervisor and is typically well prepared and discusses the thesis with great interest.	The student arranges **regular meetings** with the supervisor, is always **well prepared** and discusses his thesis at a **high scientific level**.
	1.3	The student shows no initiative.	Student shows some initiative, but is unable to work independently.	Student is motivated and initiates discussions with supervisors. Works independently with some success.	Student is motivated, initiates discussions with supervisor, and works independently with good results.	The student is highly **motivated**. **Initiation of inspired discussions** with supervisor and **independent work** are well balanced.
2. Research Competence (65%)	2.1	The work displays an unacceptably low level of understanding of the research methodology or no descriptions of methods are provided.	Student is able to execute the research methodology according to instructions given, but lacks full understanding and has to be extensively supervised.	Knowledge and under-standing of research methods are adequate, taking into account sources of error and uncertainty. Description of methods is complete and satisfactory.	Good control and understanding of the relevant research methods and analyses. The student proves the ability to modify the methods to answer the research question, showing a good level of critical thinking and independency.	**Advanced level** of control, **understanding**, depth, insight, and application of relevant **research methods** and analyses. Methods can easily be reproduced from the descriptions. Highly independent and able to adjust/improve the research methods where needed.
	2.2	There is no to very limited connection from objectives to findings with poor coherence between them.	There is a sign of organization and structure in the thesis but it is poorly implemented showing lack of full understanding. Very limited coherence between chapters.	There is a reasonable connection and coherence between the defined objectives and obtained finding. The text is well organized and clearly argued.	The thesis is closely argued and well structured. The student demonstrates a high level of competency in presenting the results and arguments. The coherency between chapters is good.	The thesis has **excellent coherency** in terms of argument. A well-defined evolution **from initial research objectives to final conclusions** is established.

Item		5.0	4.0	3.x	2.x	1.x
2. Research Competence …*continued*	2.3	The student shows no independent thinking abilities.	Student picks up some ideas suggested by others (e.g. supervisors), but the selection is not motivated.	Student develops some ideas on minor parts of the thesis, but is strongly dependent on input by supervisor.	Student initiates discussions with supervisor, has own creative ideas on hypothesis formulation, design or data processing.	The student develops **innovative** hypotheses, research or analysis methods, and demonstrates **strong independent and critical thinking abilities**.
	2.4	Insufficient knowledge of relevant literature and improper use of sources, resulting in erroneous interpretations.	Primitive knowledge and review of relevant literature, resulting in limited interpretations and applications.	Sufficient knowledge of relevant literature and interpretations.	Good knowledge of relevant literature and proper interpretations.	**Deep knowledge** and understanding of the most **relevant literature** and strong coverage, interpretation and application of the sources.
3. Report (25%)	3.1	No discussion of underlying theories.	There is some discussion of underlying theories, but the description shows serious errors.	Student has found the relevant theories, but the description has not been tailored to the project or shows occasional errors.	Student has found the relevant theories, makes a synthesis of those, and has tailored them to the project.	Clear, complete and coherent overview of **relevant theories**; exactly tailored to the project.
	3.2	The style and quality of tables and figures are of a disappointing quality; do not contribute to the research findings. Not well cited and/or placed in text.	The style and quality of tables and figures are of poor quality and do not contribute to the formulation of research findings.	The style and quality of tables and figures are of satisfactory quality. All tables and figures are referenced in the text.	The style and quality of tables and figures are of good quality and contribute to the understanding of findings. Good placement of figures and tables.	The style and quality of **tables and figures** are of excellent quality and contribute to the formulation of innovative research findings.
	3.3	No discussion and/or reflection on the research. Discussion touches only trivial or very general points or only repeats what the supervisor(s) said.	Student summarizes rather than discusses the research findings. Some weaknesses in the research may be identified, but are in fact irrelevant or non-existent.	Student discusses the research within a limited context, but fails to critically reflect upon its weaknesses or possible alternatives.	Student indicates all weaknesses in the research and weighs them relative to each other. S/he indicates alternatives and a research outlook. The discussion is comprehensive.	Student **discusses** the research in depth and provides **research outlook** (if applicable), is able to identify possible weaknesses in the research and to indicate which weakness affects the conclusions most.
	3.4	Wrong, sloppy or mostly lacking citations.	There are inconsistencies in citation. Some references are missing from the list.	Sources are cited, but not always at the proper location. Some quotes/ statement are missing references.	Sources are cited in a proper manner.	Precise, correct and complete **citation**.

Item		5.0	4.0	3.x	2.x	1.x
4. Writing and Style (5%)	4.1	Formulations in the text are often incorrect/inexact inhibiting a correct interpretation of the text.	Vagueness and/or inexactness in wording occur regularly and affect the interpretation of the text.	The text is ambiguous in places, but does not inhibit its correct interpretations. The thesis could have been written more concisely.	Formulations in the text are clear and concise.	The **quality of the text** is of such standard that it could be accepted for a peer-reviewed article as is.
	4.2	English/German is incorrect and unreadable. Many linguistic and typographical errors on (almost) every page.	English/German incorrect and hard to read. Numerous linguistic and typographical errors.	English/German basically correct and readable. Linguistic and typographical errors are present, but within acceptable limits.	English/German is correct and pleasant to read. Some linguistic and typographical errors.	English/German is **fluent** and **pleasant to read**. Very few linguistic and typographical mistakes.
	4.3	The thesis structure is chaotic, the layout untidy (e.g. with lots of empty space, figures in wrong places, text partially obscured, etc.) and/or formatting requirements are mostly ignored.	The thesis has a recognizable structure, but the layout lacks tidiness and clarity.	The thesis has a tidy layout and recognizable structure, but formatting requirements are not uniformly adhered to.	The thesis has a tidy layout and is well-structured. Most formatting requirements are met.	The **layout** of the thesis is of very high quality, and the structure is very clear and logical. All formatting requirements are met and/or approved upon.