

Guideline for a Doctoral Thesis Referee Report

Doctoral School of Mechanical Engineering, Graz University of Technology

We very much appreciate your efforts in reviewing a doctoral thesis submitted at Graz University of Technology and sincerely thank you! In order to make your task easier, we would like to give you some hints on how to structure your critical evaluation and final assessment as an expert. Before doing so, we would like to provide you with an overview of the legal requirements for doctoral theses at Graz University of Technology.

The Austrian legislator has laid down the foundations for doctoral studies in the Universities Act 2002 (Universitätsgesetz 2002, UG). It is within the autonomy of the universities to design the curriculum for the doctoral programme themselves. The curriculum for doctoral studies in the technical sciences is structured by the Senate of Graz University of Technology (TU Graz), whereby the coordination teams of the doctoral schools are responsible for drawing up the statutes, taking into account subject-specific particularities. The most important passages, to which your expert opinion should also refer, are quoted here:

“In the course of the doctoral programme, doctoral candidates must write a doctoral thesis¹ which proves their ability to tackle new scientific problems independently.” (§ 5 para 1 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“The doctoral thesis must present the new scientific knowledge gained by the research performed and compare it with the current state of scientific research. The research work must be fully documented and the results presented in an understandable form. The structure of the doctoral thesis should follow the established standards in the field. If the doctoral thesis is based on group work as defined in § 83 (2) in conjunction with § 81 (3) of the Universities Act 2002 (UG), the doctoral candidate’s share of work must be clearly stated, and each doctoral candidate involved must submit an individual doctoral thesis. It is recommended that the doctoral thesis is written in the language commonly used for publication in the corresponding field of study.” (§ 5 para 5 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“The publication of completed parts in international scientific media is recommended, including before the assessment of the doctoral thesis. If proof of such publications cannot be provided at the time that the evaluators are appointed, a minimum of three reviewer reports must be obtained for assessment of the doctoral thesis, at least one of which must come from an evaluator external to TU Graz. However, even if the doctoral thesis has already been published in part, the final completed thesis must still be submitted for assessment and may take the form of a collection of several publications or a cumulative/compilation doctoral thesis (“Manteldissertation”² in German). It must contain a list of publications of the doctoral candidate.” (§ 5 para 6 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“The Doctoral School of Mechanical Engineering requires a doctoral thesis consisting of a collection of several publications, e.g. articles or papers (“Manteldissertation” in German) to

¹ In Austria, the term used for a doctoral thesis is **Dissertation** [Latin, **dissertatio** = discussion, debate]

² Manteldissertation [German, **Mantel** = jacket]: is a collection of pre-publications enveloped by an independent part.

contain the results of the doctoral project in the form of multiple individual publications (§ 5 para 6 of the curriculum). These publications must have a related subject matter and be connected to each other due to the overarching research question of the doctoral thesis. Furthermore, the publications must have already been published or accepted for publication. With regard to its scientific contribution, a doctoral thesis consisting of a collection of several publications must correspond to a monographic doctoral thesis. In any case, if the doctoral thesis is a collection of several publications, the assessability of the doctoral thesis must be ensured. A doctoral thesis consisting of a collection of several publications therefore must be framed with an introductory chapter, a description of the research question, a report on the current state of research, a description of the methodology used and a conclusion presenting the results of the doctoral project. Finally, the contribution of the doctoral thesis to the scientific progress in the corresponding field of research must be elaborated. In addition, a doctoral candidate's share of work in the publications must be clearly stated.” (Para 14 Statutes of the Doctoral School of Mechanical Engineering at the Faculty of Mechanical Engineering and Economic Sciences of Graz University of Technology)

“Pre-selection of the evaluators should be completed at least two months before submission of the doctoral thesis. From this point on, all evaluators are to be provided with a preliminary version of the doctoral thesis. Upon submission of the doctoral thesis, the officer responsible for study matters³ initiates the **final** assessment of the doctoral thesis by the selected evaluators. They must then grade the doctoral thesis according to the applicable rating system pursuant to § 72 (2) Universities Act 2002 (UG).” (§ 5 para 3 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“The doctoral examination⁴ is the final examination in the doctoral programme. The date for the doctoral examination is set once proof of successful completion of all required courses according to § 6, of the annual reports according to § 4 (4) and of positive assessment of the doctoral thesis according to § 5 (3) has been submitted in compliance with the requirements in § 21 and § 23 of the Excerpt of Statutes: Legal Regulations for Academic Affairs of TU Graz. The doctoral examination is a public examination in front of a board of examiners consisting of at least three people, as defined in § 24 (2) of the Excerpt of Statutes: Legal Regulations for Academic Affairs as amended.” (§ 7 para 1 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“Following the doctoral examination, the doctoral candidate is given an overall assessment for their academic performance in the doctoral programme. The overall assessment is based on the assessment of the doctoral thesis, the doctoral examination, and the curricular workload. The overall assessment is “passed” if all three grades are positive. If at least 50 % of the above-mentioned study achievements are assessed as “excellent” (1), and if none of the three grades is lower than “good” (2), the overall assessment is “passed with distinction”. (§ 8 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

Ao. Univ.-Prof. Dipl.-Ing. Dr. techn. Jakob Woisetschläger
Coordination Team, Doctoral School of Mechanical Engineering at Graz University of Technology, Chairman

**All cited documents can be downloaded from the public homepage of the
[Doctoral School of Mechanical Engineering.](#)**

³ The officer responsible for study matters at the Doctoral School of Mechanical Engineering is the Dean of Studies responsible for the Master's Programme in Mechanical Engineering.

⁴ In Austria, the final doctoral examination is named **Rigorosum** [Latin; **rigor**: severity, rigour; **examen rigorosum** = rigorous examination].

Based on the legal requirements listed above, your report could be structured as follows:

(Your mailing address and affiliation, date)

Dean of Studies
Faculty of Mechanical Engineering and Economic Sciences
Graz University of Technology
Inffeldgasse 23/I
8010 Graz, Austria

Critical discussion and assessment of the doctoral thesis submitted by Mrs./Mr. ...

For the doctoral thesis entitled „ ... “ submitted by Mrs./Mr. ... , I give the assessment as an expert based on the following:

1) Subject and Significance

- Classification of the subject and the objective of the doctoral thesis.
- Appraisal of the thesis for its relevance and significance for Science and Technology.

2) Scientific Content

- Please evaluate the extent to which the work contributes to the advancement of scientific knowledge. What new ideas and contributions does the author present? Please assess the **novelty** and scientific merit of the work.
- Does the work meet the scientific standards that you would expect from a doctoral thesis? Are the new scientific findings presented in an intelligible way and compared with the current state of scientific research? Does the author demonstrate an ability to master, apply and develop the fundamentals of the field and to interpret new experimental and numerical results in a way comprehensible to the reader?

3) Substantial Aspects

- Please provide a critical analysis of the content of each chapter. A summary of the contents is not required.
- Please evaluate the author's methodological approach to the topic and the manner in which the content is presented and evaluate the coherence and logical structure of the work, paying particular attention to the **consistency** of the arguments presented.
- We kindly request your assessment of the critical processing of international scientific literature in the thesis. In this regard, we ask you to consider whether the author maintains strict honesty with regard to the contributions of colleagues, partners and competitors.
- In regard to the pre-publication of scientific results from the doctoral thesis in national and international scientific media, we kindly ask you to verify whether the author's own contribution and the contributions of the co-authors to the pre-publications are explicitly stated. This is essential for evaluating the **author's independence** in addressing novel scientific matters.

4) Structure, Presentation, and Linguistic Form

- Please assess the structure of the work. Does the structure of the work submitted as a doctoral thesis adhere to the established standards within the field?
- Is the content of the work presented in a coherent and logical manner?
- Are the results presented in a manner that is generally comprehensible? Are equations, tables, and figures clearly understandable?
- Does the work submitted as a doctoral thesis meet the standards for a doctoral thesis in the technical sciences with regard to linguistic correctness and stylistic expression? Does the author utilize technical terms accurately and appropriately?

5) Overall Assessment

Please provide a brief summary of your review and a final assessment.

The work submitted by Mrs./Mr. ... contributes to the field / provides a major contribution to the field. The work submitted as a doctoral thesis by Mrs./Mr. ... meets the criteria for a doctoral thesis (in the highest degree) / goes far beyond the prerequisites. I recommend that the Faculty of Mechanical Engineering and Economic Sciences at Graz University of Technology accept the work (without reservation) / reject the thesis. According to the Austrian grading system, I grade the work with “ ... ” (numerical digit).

SIGNATURE

The Austrian grading system ranges from 1 to 5:

1 = “sehr gut” – very good (outstanding performance)

2 = “gut” - good (generally good, but with some errors)

3 = “befriedigend” - satisfactory (generally sound work with a number of errors)

4 = “genügend” - sufficient (performance meets the minimum criteria)

5 = “nicht genügend” - unsatisfactory (substantial improvement necessary; requirement of further work)