

Guideline for a Doctoral Thesis Referee Report

Doctoral School of Mechanical Engineering, Graz University of Technology

We appreciate your effort to review a doctoral thesis submitted to our Graz University of Technology, and we sincerely thank you! To ease your task, we would like to give you instructions on how your critical evaluation and final assessment as an expert could be structured. Before that, we will provide an overview of the legal requirements for a doctoral thesis at Graz University of Technology.

In the University Act of 2002 (UG), the Austrian legislator established the fundamental guidelines for the Doctoral Thesis (Dissertation). The universities design the doctoral program's curriculum within their autonomy. The Doctoral Programme in Technical Sciences is set by the Senate of the Graz University of Technology (TU Graz), and the coordination teams of the Doctoral School are charged with creating statutes that take subject-specific characteristics into account. The most important paragraphs, which should be taken into consideration when formulating a referee report, are quoted in this section:

“In the course of the doctoral studies, a doctoral thesis is to be written, which proves the doctoral candidate’s ability to master 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 from the work accomplished and a comparison with the current state of scientific research. The work carried out must be documented consistently and the results presented in a comprehensible form. The structure of the doctoral thesis should follow the standards of the subject. For group work, the individual contributions of each student are to be clearly identified, according to § 83 para. 2 UG in conjunction with § 81 para. 3, and each contributing candidate is to submit an independent doctoral thesis.” (§ 5 para 5 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“Publication of finished parts of the doctoral thesis in international scientific media, even before assessment, is recommended. If evidence of such publications cannot be provided at the time of appointment of the reviewers, at least three reviewer reports are required. At least one report must come from outside Graz University of Technology. A final comprehensive doctoral thesis is, however, indispensable. This thesis may consist of a summary of publications of the candidate (“Mantel” doctoral thesis) and must include a list of publications of the doctoral candidate.” (§ 5 para 6 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)¹

“The Doctoral School of Mechanical Engineering requires a doctoral thesis consisting of a collection of several publications, e.g. articles or papers (“Manteldissertation” or “kumulative Dissertation” in German) to contain the results of the doctoral project in the form of multiple individual publications (§ 5 (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

¹ Mantel doctoral thesis [German, **Mantel** = jacket]: is a collection of pre-publications enveloped by an independent part.

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 must therefore 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)

“The reviewers should be pre-selected 2 months before submission of the doctoral thesis at the latest. From that time on, all the reviewers are to be provided with a preliminary version of the doctoral thesis. Upon submission of the doctoral thesis, the officers responsible for study matters initiate the final [sic!] assessment by the selected reviewers. As a part of the assessment, the doctoral thesis is to be graded according to the applicable rating system pursuant to § 72 para. 2 UG.” (§ 5 para 3 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

“The doctoral examination is the final examination in the doctoral studies. The date of the doctoral examination may be set upon proof of successful completion of the courses according to § 6, submission of the annual reports according to § 4 para. 4, and positive assessment of the thesis according to § 5 para. 3, in compliance with the directives in § 21 and 23 of the Statutes, Chapter “Study Regulations”, of Graz University of Technology. The examination is public in front of a board of at least three examiners.” (§ 7 para 1 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz) ²

“The doctoral examination is followed by the overall assessment. The assessment is based on the grades of the doctoral thesis, the doctoral examination, and the instructional classes. The overall assessment is “bestanden” (“pass”) if all three grades are positive. It is "mit Auszeichnung bestanden" (“pass with distinction”) if at least 50 % is assessed with "sehr gut" (“very good”), and if none of the three grades is less than "gut" (“good”).” (§ 8 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

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

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

² In Austria, the final doctoral examination is named **Rigorousum**.

Based on the previous paragraphs a possible structure for your referee report (assessment) shall be as follows:

(Your mailing address and affiliation, date)

Studiendekan der Fakultät für Maschinenbau und Wirtschaftswissenschaften
Technische Universität Graz
Inffeldgasse 23/I
8010 Graz, Austria

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

For the doctoral thesis entitled „.....“ by Mr./Mrs. , 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

- In which way does the work contribute to the further development of science? What are the novel ideas and contributions of the author? Please assess the **novelty** of the thesis and the scientific level of the work done.
- Does the work meet the requirements you have for a dissertation? Are the new scientific findings presented understandably and verifiable? Are new results compared with the current state of scientific research? Is the author able to master, apply, and develop the fundamentals of the field and interpret new experimental and numerical results in a comprehensible manner?

3) Substantial Aspects

- Please discuss the content in the individual chapters critically (a summary of individual chapters is not required).
- Please assess the author's methodological approach to the topic and the presentation of the content — please evaluate the **consistency** of the thesis.
- Please assess the literature review by the author. Does the author exercise strict honesty about work done by colleagues, partners, or competitors?
- Concerning the pre-publications of accomplished tasks of the doctoral thesis in national and international scientific media, please check whether the candidate explains and defends their contributions to such pre-publications and maintains strict honesty concerning co-authors' contributions. Please assess the candidate's **independence** in mastering new scientific problems.

4) Structure, Presentation, and Language

- Please assess the logical structure of the thesis. Does the form of the thesis follow the standards common to the field?
- Is there an appropriate and complete presentation of the content of the thesis?
- Does the author present the results in a generally understandable form? Are equations, tables, and images presented clearly?
- Does the work submitted as a doctoral thesis meet your requirements for a dissertation in the technical sciences in terms of linguistic correctness and stylistic expression? Does the author use technical terms precisely?

5) Overall Assessment

- Please provide a brief summary of your evaluation and a final assessment, e.g.:

The work submitted by Mr./Mrs..... contributes to the field /..... provides a major contribution to the field. The work submitted by Mr./Mrs fulfills the requirements for a doctoral thesis (in the highest degree) / goes far beyond the prerequisites. I, therefore, recommend the (unreserved) acceptance of the thesis to the Faculty of Mechanical Engineering and Economic Sciences, Graz University of Technology / I, therefore, recommend rejecting 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)