

Doctoral Programme

Doctoral School of Mechanical Engineering

J. Woisetschläger

Coordination Team, Doctoral School of Mechanical Engineering, Chairperson

April 2024

Doctoral School of Mechanical Engineering

where the **European Higher Education Area** meets the **European Research Area**



The Dissertation (doctoral thesis)

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 CURR)

Qualification:


- A graduate of the Doctoral Programme of Technical Sciences of Graz University of Technology has advanced and perfected **the ability to formalise problems in the engineering and natural sciences and to develop research-guided analyses and solutions.**
- The graduate is capable of **performing high-level scientific work independently.**
- The graduate is capable of **team work in the field of engineering and scientific research**, in both the university and industrial sectors, and can **assume coordinating and leading functions.**

(§ 1 para 2 CURR)

Doctoral Programme

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.

Graz University of Technology



Curriculum for the Doctoral Programme
in Technical Sciences

[Curriculum 2019](#)

New version valid for students
registered after 1st Oct. 2020
or in case of voluntarily opting

[Appendix: Explanatory Notes](#)

CURR

Doctoral School Mechanical Engineering

Statutes of the Doctoral School of
Mechanical Engineering at the Faculty of
Mechanical Engineering and Economics
of Graz University of Technology

**The Statutes are a subject-
specific supplement
to the Curriculum**

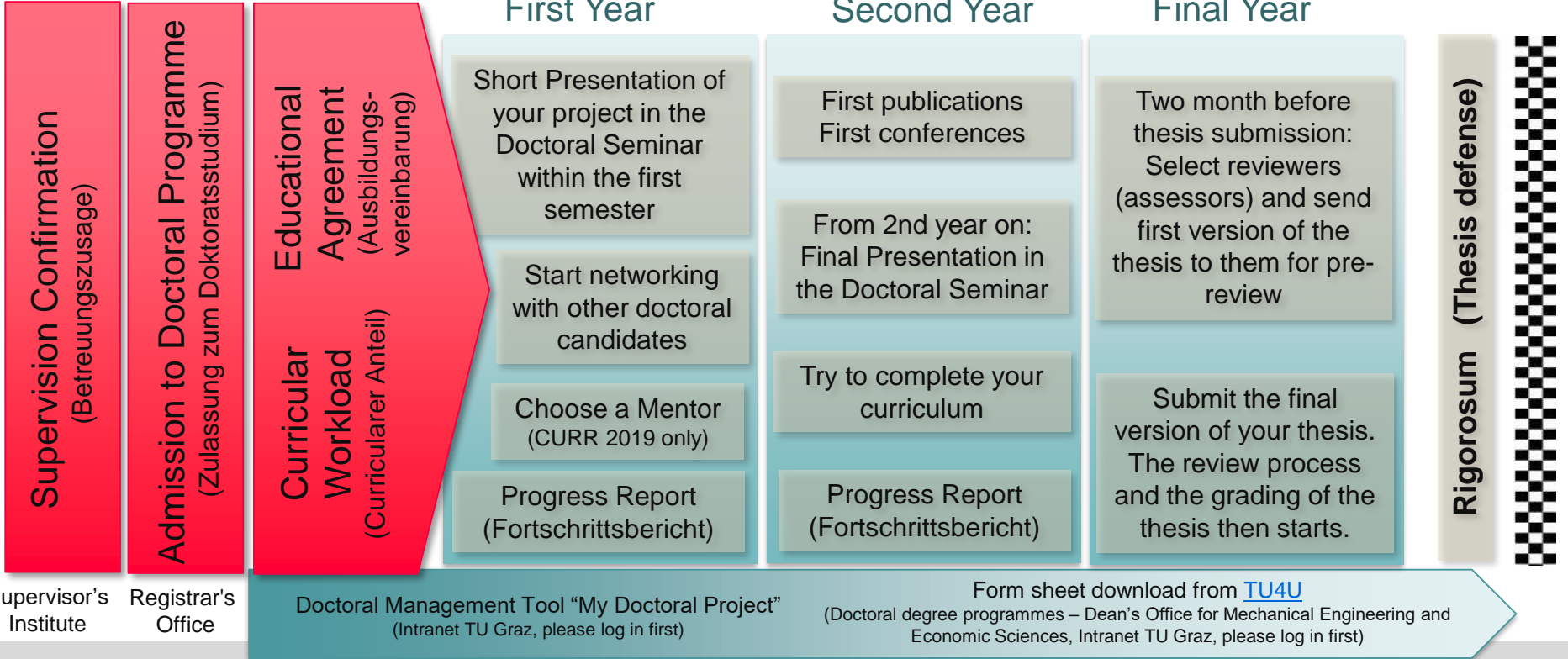
[As of June 2020](#)
(supplement to Curriculum 2019)

[Appendix: Explanatory Notes](#)

STAT

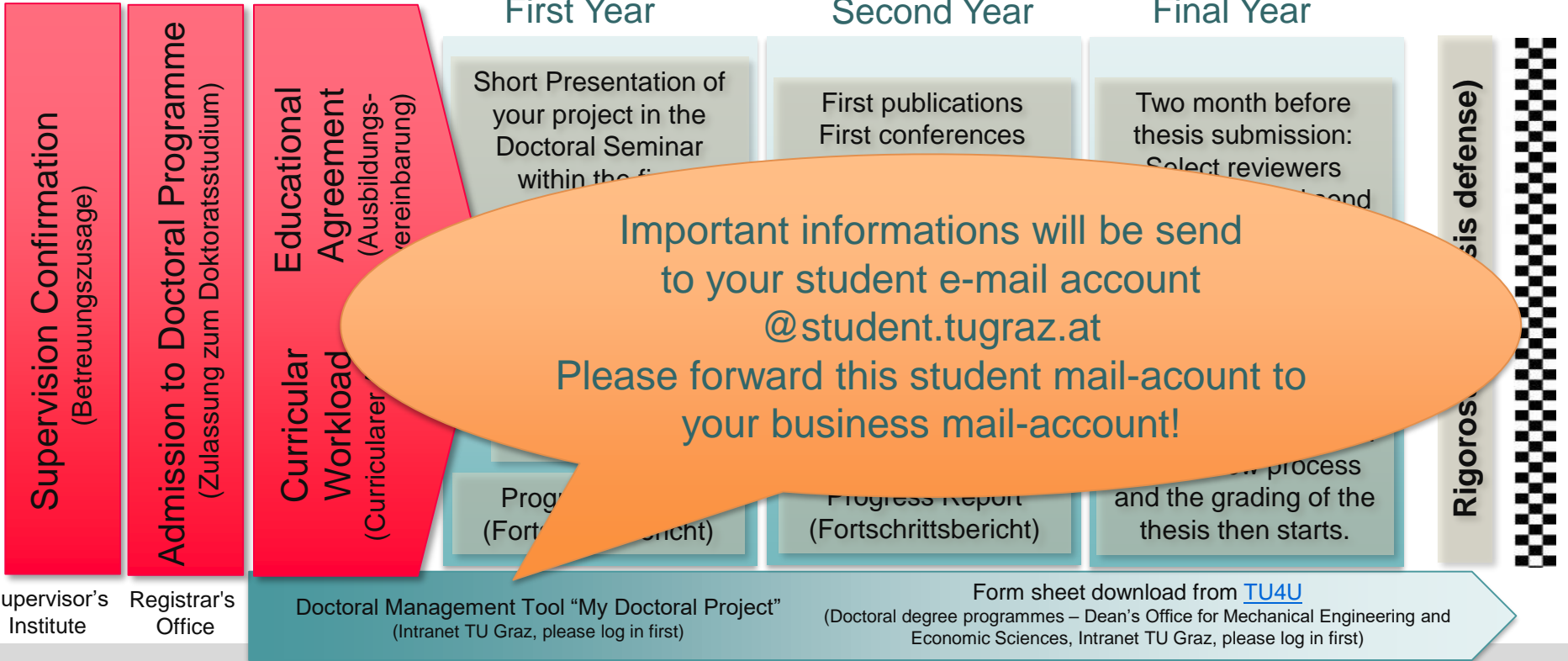
Doctoral Programme

Admission Process



Doctoral Programme

Admission Process



Supervision Confirmation
(Betreuungszusage)

Admission to Doctoral Programme
(Zulassung zum Doktoratsstudium)

Educational Agreement
(Ausbildungsvereinbarung)

Curricular Workload
(Curricularer Arbeitsaufwand)

Rigorous thesis defense

First Year

Second Year

Final Year

Short Presentation of your project in the Doctoral Seminar within the first 6 months

First publications
First conferences

Two month before thesis submission:
Select reviewers
and

Important informations will be send to your student e-mail account
@student.tugraz.at

Please forward this student mail-ccount to your business mail-account!

Progress Report
(Fortschrittsbericht)

Progress Report
(Fortschrittsbericht)

and the grading of the thesis then starts.

Doctoral Management Tool "My Doctoral Project"
(Intranet TU Graz, please log in first)

Form sheet download from TU4U
(Doctoral degree programmes – Dean’s Office for Mechanical Engineering and Economic Sciences, Intranet TU Graz, please log in first)

Doctoral thesis – Choose the Supervisor

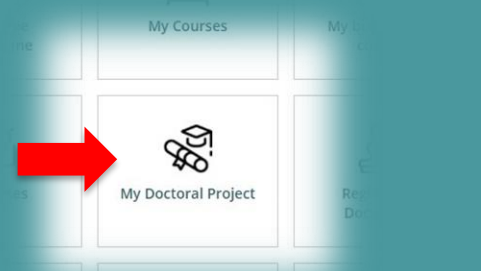
- doctoral candidates are entitled to choose a supervisor. He or she is also entitled to propose the topic or to choose the topic from a number of proposals. A change of supervisor shall be permissible up until the doctoral thesis is submitted, but has to be approved by the Dean of Studies (§ 4 CURR).
- One task of the supervisor is to guide the doctoral candidate towards independent scientific work. An exchange at regular intervals between the doctoral candidate and the supervisor, based on progress reports provided by the doctoral candidate shall be agreed upon. The supervisor has to be a TU Graz faculty member with a venia docendi (licence to teach at TU Graz; Lehrbefugnis). (§ 4 CURR, para 7 STAT)

Venia (Docendi), [Latin, **venia** = favour, permission, license; **docere**, to teach, to instruct]: license to teach at a university. In Austria, a license to teach is granted by appointment as a professor at this university or by a habilitation at this university by a decision of the rectorate.

Signing the Educational (Training) Agreement

- Upon acceptance of a doctoral candidate, an educational agreement is concluded and signed by the doctoral candidate, the supervisor, and the Dean of Studies.
- The supervisor confirms, according to the supervisor's expertise in the subject that the doctoral project can be accomplished within the envisaged time frame.
- The doctoral candidate agrees to observe the guidelines of Graz University of Technology ensuring good scientific practice. § 4 CURR [guideline good scientific practice](#)
- Minimum period of the programme : 3 years (§ 54 UG)

online



Form sheet download from [TU4U](#)

Choosing the Curricular Workload

para 10 – 13 STAT

14 semester course hours (SWS) of instructional classes in three modules

When starting your doctoral program, the instructional classes portfolio (Curricular workload) has to be approved by the Dean of Studies.

Module 1: “Subject-specific basic courses”, 8 semester course hours (SCH);

Subject-specific basic courses are selected by the doctoral candidate in close consultation with his/her supervisor from the portfolio offered by Graz University of Technology. The DSM recommends courses from § 5a of the master’s curriculum in Mechanical Engineering (electives). Courses completed in the doctoral candidate master’s programme are not eligible as subject-specific basic courses. You are strongly discouraged to choose all courses from the supervisor’s institute!

Module 2: “Scientific Methods and Communication”, 4 semester course hours, 2 of which must be the doctoral seminar;


aim: to provide the theoretical knowledge and practical skills for developing results in research with scientific methods, and to present and defend these results. Please register in winter AND summer semester (each semester is only one SCH).

Module 3: An exclusive tutorial (Privatissimum), 2 semester course hours.

The exclusive tutorial is an opportunity for one-to-one engagement with the candidate’s work offered by the supervisor and entails the study and discussion of presented concepts, preliminary results, formulations etc. and a concrete feedback from the supervisor.

Choosing the Curricular Workload

para 10 – 13 STAT



CURRICULAR WORKLOAD
In accordance with § 6 Curriculum for the Doctoral Programme in Technical Sciences
Based on 14 semester course hours

Doctoral School of Mechanical Engineering
 Doctoral School Techno-Economics

Family Name: _____ First Name: _____
Matriculation Number: _____ Code Number: _____

Subject-Specific Basic Courses (8 semester course hours - SCH)

Course number	Course Title	Course Type	SCH

Scientific Methods and Communication (4 SCH with 2 SCH Doctoral Seminar)

Course number	Course Title	Course Type	SCH
	Doctoral Seminar (mandatory)	SE	2

Exclusive Tutorial (2 SCH)

Course number	Course Title	Course Type	SCH

Date: Signature Doctoral Candidate: _____

Form sheet download from [TU4U](#)
(Doctoral degree programmes – Dean’s Office for Mechanical Engineering and Economic Sciences, Intranet TU Graz, please log in first)

Module 2: Courses often chosen by doctoral candidates can be found in para 12 STAT.

Module 1: Courses from other subject areas or other universities may be chosen upon application. Please choose these courses in the Curricular Workload form when you start your doctoral programme. (The supervisor confirms, the dean of studies approves.) § 6 para 2 CURR

Please fill out the form sheet immediately when you start your doctoral programme and mail it to the Dean’s office!

During your studies your classes portfolio (Curricular workload) can be changed upon application. Please apply together with your supervisor at the dean’s office. An explanatory statement why this change is required must be given!

Mentorship

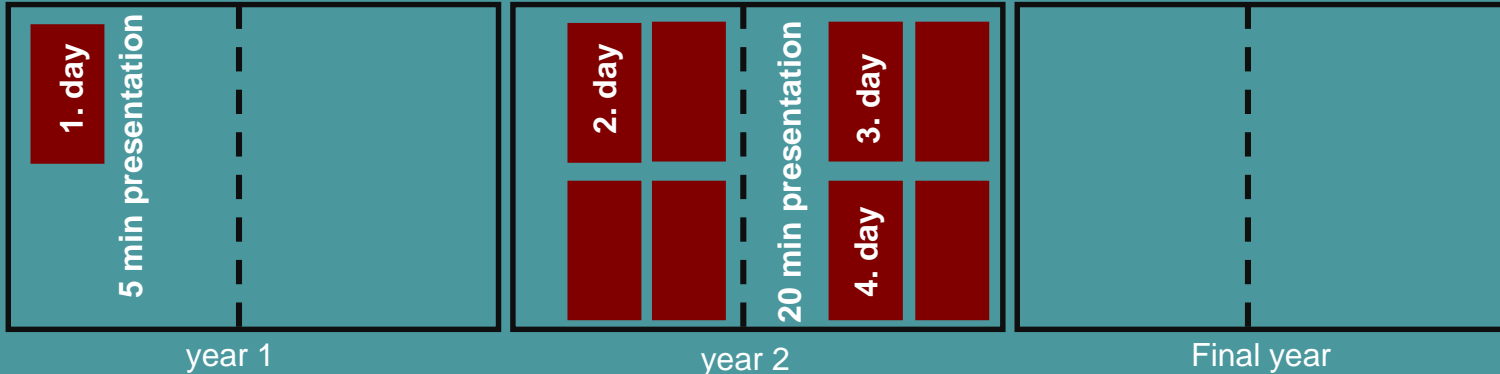
- Doctoral Candidates are entitled to call upon one or more persons to consult and accompany the doctoral project. (§ 4 para 5 CURR)
- The Doctoral School of Mechanical Engineering agrees upon the good scientific practice to suggest experienced scientists as mentors. (para 7 STAT)
- Especially in industry-related projects, doctoral candidates must take into account confidentiality and conflicts of interest when making their selection. (para 7 STAT)

The Doctoral Seminar at DSM

para 12 STAT

In the doctoral seminar, progress and results of the doctoral projects at the Doctoral School of Mechanical Engineering are presented. The seminar is held in four four-hour blocks each semester. In these sessions, doctoral candidates from their second year on present their work in a 20 min presentation. All doctoral candidates in the first semester of their studies briefly introduce themselves and their work (5 min).

For your presentations online registration only!



4 days must be completed.
attendance list!

The Doctoral Seminar at DSM

para 12 STAT

5 minutes presentation:

Where are you from, what did you study ?
What is the objective of your scientific work ?
Will you work experimentally or numerically ?
Who is your supervisor ? At which institute
(company) are you employed ? In which lab
will you carry out your research ? Financing ?
Are there any research partners?

20 minutes presentation (+ 10 min discussion):

At first, mention your supervisor, your supervising institute, your employer (if not identical) and the project funding.

What can you expect from the audience?

deepened mathematical knowledge; deepened scientific knowledge (physics, chemistry, informatics, diagnostic techniques); basic knowledge on design and construction, mechanics, dynamics, fluid mechanics, thermodynamics, and materials science; basic principles of business administration.

The presentations must be in English and should be easy to follow so that all members of the Doctoral School are properly informed about your scientific task. A scientific discussion on the topic shall be triggered.

The Doctoral Seminar at DSM

para 12 STAT

Please download your presentation to the laptop placed at the console before the seminar starts.

Please test the presentation in case you have animated transparencies. Whenever special animations are required, please plug in and test your personal laptop before the seminar starts!

A Feedback Form is distributed to all participants of the seminar in the classroom.

The individual result on his or her 20 minutes presentation of this feedback can be viewed by the speaker only.

Some statistics averaged over 8 years

Best 1

Worst 4.1

Best 1

	Content	Arrangement	Language	Time	Presentation	Questions
Grading 1 to 5	1.7 ± 0.3	1.6 ± 0.3	1.7 ± 0.4	1.8 ± 0.3	1.7 ± 0.2	1.4 ± 0.4

Publications

- The Doctoral School of Mechanical Engineering encourage doctoral candidates to **publish at least two reviewed articles in international journals or at international conferences prior to pre-selection of the reviewers.** Articles must be submitted, accepted for publication or published. (para 9 STAT)

Publication, [Latin, **publicare** = to make public]: A valid scientific publication usually is characterized by a DOI (digital object identifier), or an ISBN (international standard book number), or an ISSN (international standard serial number).

Peer-reviewed publication: To be considered a peer-reviewed publication, there must generally be two, mostly anonymous reports, based on which the editor accepts, rejects, or returns the paper for revision before a possible acceptance. This peer-review process ensures the quality of scientific work before it is published.

Average number of publications per doctoral candidate at DSM. 2018-2022, 2008-2014, and 2014-2018 evaluation periods are compared.

	publications in total	reviewed publications
2018 - 2022	6,3	4,1
2014 - 2018	7,3	4,4
2008 - 2014	6,1	2,6

Pre-Publications

- Throughout Europe, young scientists on their way to a doctorate must pre-publish important partial results in international journals before submitting their doctoral thesis (dissertation). On the one hand, such an approach increases the probability of obtaining funding for one's scientific work quickly after the Rigorosum (final examination; defense); on the other hand, it also increases the international visibility of our TU Graz. Since these publications are pre-publications for the dissertation, many of our doctoral candidates ask themselves how it is now possible to include these works in their dissertations.

Contents

Preface	32
The dissertation at the Doctoral School of Mechanical Engineering	34
The dissertation.....	34
Dissertation, pre-publications, and copyright.....	35
Plagiarism and self-plagiarism.....	36
The dissertation according to technical standards.....	37
Closing remarks.....	38
Bibliography.....	40
APPENDIX A: Glossary of terms	43
APPENDIX B: Directives and downloads at TU Graz	48
The framework at TU Graz.....	48
Safeguarding Good Scientific Practice.....	49
Downloads to the written form.....	49
Legal Information System of the Republic of Austria (RIS).....	50
APPENDIX C: Relevant technical standards and rules	51
Rules for the design and layout of texts.....	51
Numbers, Quantities and Units.....	52
Examples.....	52
APPENDIX D: Helpful online resources	54

Die Dissertation an der Doctoral School für Maschinenbau

The dissertation at the Doctoral School of Mechanical Engineering

Erfahrungen aus 15 Jahren Doctoral School für Maschinenbau

Experience from 15 years Doctoral School of Mechanical Engineering

Ao. Univ.-Prof. Dipl.-Ing. Dr. techn.
Jakob Woisetschlüger

Vorsitzender des Koordinationsrats der Doctoral School für Maschinenbau an der Technischen Universität Graz
Coordination Team,
Doctoral School of Mechanical Engineering at Graz University of Technology,
Chairman

August 2023

Coming to an end – pre-selection of reviewers

- The reviewers (with venia) have to be pre-selected 2 months before submission of the doctoral thesis** at the latest. From that time on, all the referees are to be provided with a preliminary version of the doctoral thesis (**pre-assessment phase**). (§ 5 para 3 CURR)
- Completed parts of the thesis shall be published before the selection of reviewers.** If proof of such publications cannot be provided at the time that the assessors are appointed, at least **three assessors (reviewers)** shall be appointed, of which at least one must be from outside of TU Graz. (§ 5 para 6 CURR)

Form sheet download from [TU4U](#)
 (Doctoral degree programmes – Dean's Office for Mechanical Engineering and Economic Sciences, Intranet TU Graz, please log in first)

Vorauswahl der Gutachter*innen – Pre-selection of Reviewers

Doctoral School **Maschinenbau** – Doctoral School of Mechanical Engineering
 Doctoral School **Techno-Ökonomie** – Doctoral School of Techno- Economics

(candidates with venia: please check accordingly)

Curriculum § 1 (2): Die Begutachtung der Dissertation erfolgt gemäß § 11 Abs. 5-7 (Satzungspunkt Studienrecht der TU Graz. Die Auswahl der Gutachter*innen/Gutachter erfolgt durch das Koordinationsbüro der Doctoral School im Zusammenwirken mit dem ordentlichen Richter. Hierbei haben die Doktorierenden/innen sowie die Dissertationen/innen das Vorschlagsrecht. Wichtigste eine Gutachter*innen/Gutachter soll von außerhalb der TU Graz kommen. Es dürfen nicht alle ausgewählten Gutachter*innen/Gutachter am selben Institut tätig sein.
(3) Die Vorauswahl der Gutachter*innen/Gutachter soll spätestens zwei Monate vor Einreichung der Dissertation erfolgen. Alle Gutachter*innen/Gutachter sind ab diesem Zeitpunkt mit der vollständigen Version der Dissertation vertraut zu machen. Der Einreichenden der Dissertation überlässt der ordentliche Richter das ordentliche Organ die mögliche Begutachtung durch die ausgewählten Gutachter*innen/Gutachter an. (Übersicht*innen für die dies Curriculum Version 2007/2012) auch gibt die Betreuer der neuen Gutachter)

Curriculum § 1 (2): The doctoral thesis is assessed according to § 11, para. 5 through 7 of the Statutes, Chapter "Study Regulations", of Graz University of Technology. In consultation with the officers responsible for each matter, reviewers are pre-selected by the coordinating team of the doctoral school. The supervisor and the doctoral candidate have the right to propose names of reviewers. At least one reviewer should be from outside Graz University of Technology. Reviewers must not all be employed at the same institute.
(3) The selection 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 admission of the doctoral thesis, the officers responsible for study matters inform the final assessment by the selected reviewers.
(Doctoral candidates will in Curriculum version 2007/2012. The supervisor is 1st reviewer.)

Dissertant*in – Doctoral Candidate

Nachname – Last Name Vorname – First Name Matrikelnummer – Matriculation Number

Vorschlag Gutachter*innen (Name und Zugehörigkeit) – Reviewers Proposed (Name and Affiliation)

1. Gutachter*in – 1st Reviewer:

2. Gutachter*in – 2nd Reviewer:

3. Gutachter*in – 3rd Reviewer:

Falls erforderlich – If mandatory: *) Curriculum § 5 (6) Die Veröffentlichung von abgeschlossenen Teilen, auch von der Begutachtung der Dissertation, in internationalen Publikationsorganen wird empfohlen. Falls solche Veröffentlichungen zum Zeitpunkt der Erstellung der Gutachter*innen/Gutachter nicht nachgezogen werden können, sind mindestens drei Gutachter*innen einzuholen, von denen wenigstens eines von außerhalb der TU Graz kommen muss.
*) Curriculum § 5 (6) Publication of finished parts of the doctoral thesis in international scientific journals, even before assessment, is recommended. If evidence of such publications cannot be provided at the time of appointment of the reviewers, at least three reviewers reports are required. At least one report must come from outside Graz University of Technology.

Publikationen bitte auf den nächsten Seiten eintragen – Please list publications on the next pages

Datum - Date Unterschrift/Doktorant*in – Signature/Doctoral Candidate:

Datum - Date Unterschrift/Name Betreuer*in – Signature/Name Supervisor:

Genehmigung – Approval – Doctoral School: Datum - Date: Letter*in der - Head of - Doctoral School

Bitte eine ausgefüllte Formulare an das Dekanat übermitteln - Please send the completed form to the Dean's Office

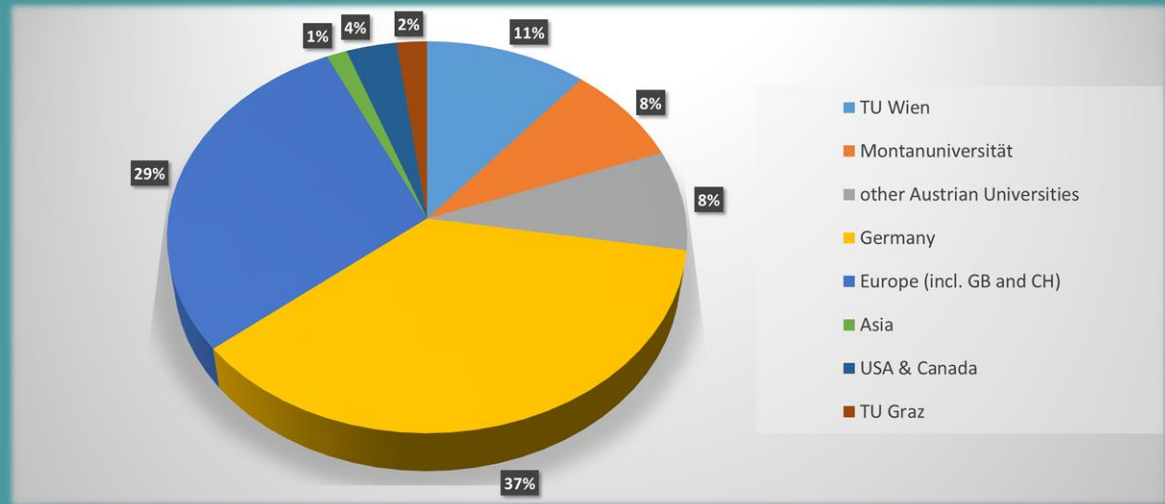
Ab Abstract submitted with the Abstract, insert the page number	Ab Abstract submitted with the Abstract, insert the page number	Ab Abstract submitted with the Abstract, insert the page number	Ab Abstract submitted with the Abstract, insert the page number	Ab Abstract submitted with the Abstract, insert the page number
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zentralbibliothek bitte anerkennen
please check accordingly

Please sign and mail to the Dean's office

Coming to an end – the review process

- When the thesis is finally submitted to the dean's office, the dean of studies will forward the doctoral thesis to the assessors (with venia), who must assess the doctoral thesis within four months.
- At least one assessor should come from outside TU Graz.



In 2018 – 2022, the DSM second reviewers were from the following regions:

Coming to an end – the review process

- **Upon submission of the doctoral thesis, the Dean of Studies initiates the final assessment (grading!) by the selected referees.** The doctoral school provides a [guideline for the thesis assessment](#).

Guideline for a Doctoral Thesis Referee Report, Doctoral School of Mechanical Engineering, August 2023

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 Senates 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." (§ 1 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." (§ 1 para 1 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 referee 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 ('Master' doctoral thesis) and must include a list of publications of the doctoral candidate." (§ 1 para 1 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 ('Masterdissertation' 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

Guideline for a Doctoral Thesis Referee Report, Doctoral School of Mechanical Engineering, August 2023

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 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." (§ 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." (§ 1 para 1 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." (§ 1 para 1 Curriculum for the Doctoral Programme in Technical Sciences, TU Graz)

"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")." (§ 1 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.

An Univ.-Prof. (ag. Dr. i. tech. Wiss.)
 Coordination Team, Doctoral School of Mechanical Engineering at Graz University of Technology, Classroom

¹ In Austria, the final doctoral examination is named Rigorosum.

2

Guideline for a Doctoral Thesis Referee Report, Doctoral School of Mechanical Engineering, August 2023

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.

Guideline for a Doctoral Thesis Referee Report, Doctoral School of Mechanical Engineering, August 2023

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)

Thesis defense at DSM

What do I need to organize my defense ?

- 1) Positive assessment of the thesis**
- 2) Successful completion of the courses**
- 3) The yearly progress reports**

Instructions how to file your thesis and the form sheet download is found at [TU4U](#)

(Doctoral degree programmes – Dean's Office for Mechanical Engineering and Economic Sciences, Intranet TU Graz, please log in first)

Rigorosum – The thesis defense at DSM

para 16 STAT

- As a rule, the board of examiners (committee) for the thesis defence consists of the Dean of Studies for Mechanical Engineering (chairperson), the supervisor, and additional university lecturers with *venia who may, but do not have to be, the assessors of the doctoral thesis*. Such a committee must consist of at least three persons.
- The thesis defence starts with the doctoral candidate presenting his/her research work based on the content of his/her doctoral thesis, e.g. the scientific problem formulation, the selected research methodology, the areas of emphasis and the main results. After the presentation the candidate answers questions on the doctoral thesis and its presentation, as well as on closely related subject areas. The thesis defence is open to the public, but only members of the examination board are authorised to ask questions.
- As a recommended guideline, a presentation time of 30 (to 45) minutes is considered to be sufficient. The discussion part should be approx. 20 minutes questions per examiner. The discussion part has the character of a defence of the doctoral thesis consisting of questions on the subject of the doctoral thesis and the related subject area. (Appendix to § 7 CURR)



An allegory of mechanical engineering or mechanics is depicted on the Aula's ceiling. She is holding a gear wheel and a centrifugal governor. In 1901, legislation granting the Technische Hochschule Graz the ability to confer doctorates was passed concurrently across the entire monarchy for all Technical Universities. At what is now the Graz University of Technology, Hans Löschner received the first engineering sciences doctorate ever granted by the monarchy in 1901. The two wall-mounted panels to the left and right of the allegory, which hang on the stairwell outside the Aula, depict the strategic partners that TU Graz has (accessed 2023).