Doctoral programme
-
Doctoral School of Mechanical Engineering

Chairperson, Coordinating Team, Doctoral School of Mechanical Engineering:
J. Woisetschlüger
doctoral seminar 10.Oct.2018
Three articles organize the programme

Satzungsteil Studienrecht

Curriculum for the Doctoral Programme in Technical Sciences

Curriculum 2007 in the version of 2012

Legal validity remains restricted to the German original

The changes to the curriculum for the Doctoral Programme in Technical Sciences were decided by the Curriculum Commission for Doctoral Programmes and University Courses on May 19, 2012.

On the basis of the University's Organization and Study Act (UG 2003), Austrian Federal Law Gazette (BGBl. I Nr. 143/2002) in its valid version, the Senate of Graz University of Technology issues the following curricular particulars for the Doctoral Programme in Technical Sciences.

§ 1 Objective and Qualification Profile

(1) Beyond professional education, the objectives of the Doctoral Programme in Technical Sciences at Graz University of Technology is to develop students' abilities to self-organized, independent scientific research in the fields of the respective field of Graz University of Technology. Graduates are awarded the academic degree of Doctor/Doctor of the technologische Wissenschaften (Doctor of Technical Sciences, Dr. techn.). According to § 12 of the Austrian Federal Law Gazette (BGBl. I Nr. 143/2002), § 14, the academic degree of 'Doctor of Philosophy (PhD)' is not awarded.

(2) Qualification profile

A graduate of the Doctoral Programme in Technical Sciences of Graz University of Technology has extended and perfected the skills to formulate problems in the engineering and natural sciences and to develop research-guided analyses and calculations. 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 industry, and can assume coordinating and leading functions.

The graduate has a broad basis and a consolidated level of specialisation and can thus advance and innovatively apply scientific knowledge in various fields of application. All theorems refer to the explanatory notes in the appendix.

§ 2 Admissions, Curriculum Workload and Period of Study

(1) Applicants are registered into the programme by the Master. Further to the general requirements according to § 50 and 51 of the Act, admission is subject to the following prerequisites pertaining to the part and study regulations of the statutes of Graz University of Technology.

1. a research degree or master's degree of a university in Engineering or the Sciences, or

2. a different degree of a recognised Austrian or foreign school of higher education equivalent to number 1, or

(2) Inter-University Cooperation

Not applicable to the doctoral school.

(3) Structure and Tasks of the Coordinating Team

The Coordinating Team of the Doctoral School of Mechanical Engineering is structured as follows: (Professors/Institute Faculty members/Directors/Students) as (2,2). The Team appoints a chairman from amongst its members.

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

As of 12/06/2011

Legal validity remains restricted to the German original

(1) Scope of the Doctoral Programme in the Doctoral School of Mechanical Engineering

The doctoral programme in the Doctoral School of Mechanical Engineering leads to scientific problems in the field of mechanical engineering and closely related technical fields. The doctoral programme develops advanced abilities of the candidates, not only in the field of their subject of research, but also in related areas. The doctoral programme educates students in close relation to current research.

(2) Academic Degree

Graduates of the Doctoral School of Mechanical Engineering are awarded the degree of a 'Doctor of Engineering Sciences', i.e., Latin 'Doctor technicus', abbreviated 'Dr. techn.'

(3) Objectives and Subject-Specific Qualification Profile

Objectives of the doctoral programme are to develop skills for independent scientific research, advanced knowledge, as well as abilities of the students for presentation and defence of results in the related field of research of the engineering sciences and related areas.

Graduates of the Doctoral Programme in Mechanical Engineering have in-depth knowledge of the area of their PhD thesis, extensive experience with the application of scientific methods in the engineering sciences, skills in presenting and defending results, and the ability for team work.

(4) List of Member institutes at Graz University of Technology

The Doctoral School of Mechanical Engineering includes the following institutes:

- Production Engineering
- Materials Science and Welding
- Strength of Materials
- Mechanics
- Thermal Engineering
- Logistics Engineering
- Machine Components and Methods of Development
- Internal Combustion Engines and Thermodynamics
- Machine Construction
- Thermal Turbomachinery and Fluid Dynamics
- Fluid Mechanics and Heat Transfer
- Vehicle Technology
- Vehicle Safety
- Traffic and Logistics

(5) Inter-University Cooperation

Not applicable to the doctoral school.

(6) Structure and Tasks of the Coordinating Team

The Coordinating Team of the Doctoral School of Mechanical Engineering is structured as follows: (Professors/Institute Faculty members/Directors/Students) as (2,2). The Team appoints a chairman from amongst its members.

Satzungsteil Studienrecht (SSTR)

Curriculum for the Doctoral Programme in Technical Sciences (CURR)

Statutes of the Doctoral School of Mechanical Engineering (STAT)
Doctoral programme

Official period of the programme CURR §2: 3 years

- Yearly progress report - written statement by supervisor

- Scientific Methods and Communication 4 SCH (semester course hours)
  Examples STAT Sec.12. Dean of study must accept the choice!
  included: Doctoral Seminar 2x1 SCH, one year seminar, mandatory!

- Subject-specific basic courses 8 SCH (STAT Abs. 11), dean of study
  must accept the choice! 50% rule does apply. (max. 50% of courses
  from one institute)

- Exclusive Tutorial 2 SCH (STAT Abs.13) by supervisor.

Instructional classes

- Presentation
- Yearly progress report - written statement by supervisor

Justification! CURR §4
Doctoral thesis
SSTR §28, CURR §5, STAT Abs.7

- 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.

- Support by a supervisor in all questions concerning state of the art, scientific methods and encouraging independent scientific publication. (faculty member with venia legendi: SSTR §26; duties of the supervisor: STAT Abs. 7, CURR §4)

- The student must deal seriously and intensively with the topic of her or his work. (The student may suggest the topic, has a free choice in supervision, and might change the supervisor, all within the possibilities of the university SSTR §28, CURR §4, STAT Abs. 7)
The first semester

During the first Semester you will **present yourself briefly** within the Doctoral Seminar, must sign the agreement (**Ausbildungsvereinbarung**) and choose the instructional classes (**curriculare Anteil**).
The Doctoral School Mechanical Engineering offers two days of seminar each semester = 1 SCH (each seminar with app. 7 x 45 min, workshop style).

- 2 x 1 SCH, 4 seminars (4 days) must be completed.
- You must present yourself briefly at the beginning of the doctoral program and give one 20 min presentation later on.
Doctoral seminar

- "catch up" on seminars in the next semester is possible, an attendance list does circulate during class.
- In case of too many lecturers a 3rd class can be offered within the same semester. But, by participating in 4 seminars the 2 x 1 SCH are fulfilled anyways!
Doctoral seminar – presenting yourself

5 minutes maximum! In that time you should present yourself briefly (short academic curriculum) and give an overview on the PhD project you tend to tackle. Projector und laptop are at your disposition.

Checklist:
- 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 (external companies, internal institutes other than the one mentioned above)?
The presentation is expected to last for 20 minutes with additional 10 minutes for discussion.

You should 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!

At first, mention your supervisor, your supervising institute, your employee (if not identical) and the project funding.
Doctoral seminar: What can you expect from the audience?

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

The presentation 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.

A Feedback Form is distributed to all participants of the seminar. The result of this feedback can be reviewed by you only.
# Doctoral seminar - feedback

**Presentation 1: DI**

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**Comments:**

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Choosing the referees

The referees should be pre-selected 2 months before submission of the PhD thesis at the latest. (CURR §5).

Vorauswahl der Gutachter/Gutachterinnen

- Doctoral School Maschinenbau
- Doctoral School Techno-Ökonomie
(Gebühren der E-Mail-Abbildung)


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Vorschlag Gutachter/Gutachterinnen

1. Gutachter/Gutachter: 
2. Gutachter/Gutachter: 

Fälle erfordern (*): 3 Gutachter/Gutachter: 


Publikationen bitte auf der nächsten Seite eintragen

Datum: 
Unterschrift: 

Datum: 
Unterschrift: 

Genehmigung Doctoral School:

Datum: 
Unterschrift Leiter der Doctoral School: 

Anmerkung: Bitte ausgewählte Personen an das Dekanat zu schicken.

Dekanat der Fakultät für Maschinenbau und Wirtschaftswissenschaften /Homepage
Referees

- According to SSTR §26 referees are university lecturers with venia legendi. At least one referee should be from a university other than TU Graz. The referees of a PhD thesis completed at this doctoral school must not be all employed at the same institute. (CURR §5, STAT Abs. 8).

- According to international conventions the assessment is by novelty, self-reliance and consistency.

- Two referees have to evaluate the doctoral thesis (manuscript) within 4 months. (SSTR §28).

- It is good practice at TU Graz that the first referee is also supervisor of the work and examiner at the rigorosum. (CURR §5). The second referee can be chosen from a related field of expertise (SSTR §28).

- A third referee is needed whenever there is evidence that no reviewed publications in international journals or international conference proceedings can be submitted by the candidate.
Publications

- "Publication of finished parts of the PhD 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 referees, at least three referee reports are required. At least one report must come from outside Graz University of Technology." — CURR §5

- "The Doctoral School of Mechanical Engineering requires doctoral candidates to publish approximately two refereed articles in international journals or at international conferences prior to completing their doctoral studies. Articles must be submitted, accepted for publication or published." — STAT Abs. 9
What is a publication?

- **Publishing finished parts of the thesis even before assessment:** To publish parts of the thesis as articles in international journals or at international conferences (full-text papers, reviewed).

- **Publico, publicare:** To make public. A valid publication is often proven by the **ISBN** (international standard book number), **ISSN** (international standard serial number), **DOI** (digital object identifier) or any digital link within the **world wide web**.

- **First author:** If several authors participate in a piece of research or in a further published work based on the previous one, they all always bear the responsibility for the contents together. (“Policy of the Rectorate of Graz University of Technology on Safeguarding Good Scientific Practice and Avoiding Misconduct in Science”:§5 Abs.2)

- **Refereed publication:** positive reports by anonymous referees are needed. These referees must work within the same field of expertise compared to the submitting authors. („Peer review“ = “Begutachtung durch Ebenbürtige”

**The Doctoral School does not rank refereed journals or proceedings!**
...Unfortunately, the paper does not achieve enough in either of these two categories to guarantee publication and therefore I recommend rejection. ... The insights revealed are hidden in unclear text and messy presentation, so there is no message. It may be that with extra data, and further analysis, the present manuscript could be extended into a good paper, so I would also recommend to the authors to think about the issues below and re-submit a better paper at this or at another journal. It would be so different than this one, however, that I could not consider it as a "revision".

Reviewer #2: Congratulation to the important, clearly presented and accurately elaborated work.
Documentation of publications

In order to document the publications the backside of the form „Vorauswahl der Gutachter“ has to be completed. This form must be signed by the supervisor and the chairperson of the Doctoral School.
Board of examiners

- In most cases the **examiners** during the rigorosum will be identical with the referees, although this is no necessity (CURR §7). The supervisor will then be the first referee. The second referee will also act as examiner.

- **Examiners and referees must be accepted by the dean of studies.**

- The **board of examiners** must consist of **three persons**. The second examiner must be a competent university lecturer with venia legendi. In most cases the dean of study will be chairperson. In case he is prevented for any reason he will choose a qualified chairperson to replace him. (STAT Abs. 14).

- During the **rigorosum** a presentation must be held by the doctoral candidate and the examiners will question the scientific work conducted. Presentation and examination are public, with only the examiners allowed to question the work (STAT Abs. 15).
An information sheet is available at the faculty to help when submitting the thesis and preparing the materials for the rigorosum.
Thesis submission

➢ The candidate must add a statement **in lieu of oath** to the thesis.

➢ A doctoral thesis must comply with the **Policy of the Rectorate of Graz University of Technology on Safeguarding Good Scientific Practice and Avoiding Misconduct in Science**

➢ **Plagiarism check:** The supervisor is responsible for a digital plagiarism check of the thesis. The result must be available when the thesis is submitted.
To lock the thesis from public

➢ In the fields of technology the thesis can be classified for up to 5 years, by the candidate only. The supervisor and the dean must agree. This is often needed when industry partners are involved. Such a classified thesis cannot be accessed from any person outside TU Graz.