



Statutes of the Doctoral School of Electrical Engineering

Version as of 2020-06

These statutes were written by the Doctoral School of Electrical Engineering's coordination team. The Doctoral School provides the formal framework for their members. The members include employees with teaching qualifications for the associated institutes as well as the assigned doctoral candidates. The Doctoral School's coordination team, together with the officer in charge of study matters, is responsible for the content-related implementation of the subject-specific details according to § 3 (4) of the current curriculum.

The curriculum for the Doctoral Programme in Technical Sciences at Graz University of Technology is applicable in the current version.

1. Scope of the Doctoral School of Electrical Engineering

The doctoral programme at the Doctoral School of Electrical Engineering (German title: Doctoral School für Elektrotechnik) involves technical and academic problems within the engineering and scientific aspects of electrical engineering and closely related subject areas. The doctoral programme develops the candidates' in-depth knowledge of the fields of engineering and science, not only within the context of their specific subject of research, but also in related fields. The training takes place alongside research activities. Students who have been admitted to the programme in accordance with § 2 (1) of the doctoral programme curriculum may be associated with the Doctoral School of Electrical Engineering independent of their previous degree, permitting the content of their doctoral studies falls within the subject area of electrical engineering.

2. Academic degree to be awarded

Graduates of the doctoral programme at the Doctoral School of Electrical Engineering who were admitted to the Doctoral Programme in Technical Sciences are awarded the academic degree "Doctor of Technical Sciences" (abb. Dr. techn.).

3. Objectives and subject-specific qualification profile

The objectives of the doctoral programme are to develop skills for independent scientific research, to deepen the graduates' knowledge in the specific subject area of their doctoral thesis as well as related subject areas, and to provide doctoral candidates with the abilities needed to present and defend research results at the highest level. Graduates of the Doctoral School of Electrical Engineering have in-depth knowledge about the areas of their doctoral theses, extensive experience with the application of scientific methods in engineering and natural sciences, skills in presenting and defending research results, and teamwork skills. The graduate of this Doctoral School is able to independently implement the latest scientific knowledge from the fields of engineering and natural sciences as well as their areas of application.

4. Subjects of the Doctoral School

a. Associated institutes

The subject area of electrical engineering is represented in the Doctoral School of Electrical Engineering. The following institutes are assigned to the Doctoral School of Electrical Engineering:

- 4310 Institute of Electric Drives and Machines
- 4320 Institute of Electrical Power Systems
- 4330 Institute of High Voltage Engineering and System Performance
- 4340 Institute of Electricity Economics and Energy Innovation
- 4370 Institute of Fundamentals and Theory in Electrical Engineering
- 4430 Institute of Automation and Control

b. Cooperation partners

Collaborating with other higher education institutes, research laboratories and industry is highly valued. When visiting an external research facility, participation in subject-specific advanced training seminars or doctoral seminars at said research facility is recommended, and is generally recognised as a substitute for participation in equivalent doctoral seminars of the Doctoral School. Furthermore, participation in lectures and courses is recognised by the officer responsible for study matters if they are related to the doctoral thesis and are not offered at Graz University of Technology. No further special regulations apply to this Doctoral School.

5. Coordination team's structure and tasks

The Doctoral School of Electrical Engineering is headed by a tripartite coordination team comprised of one representative from each of the following groups: the professors, the non-professorial teaching staff (habilitated) and the doctoral candidates all from the electrical engineering department. Coordination team members of the Doctoral School of Electrical Engineering are nominated by their respective peers for the duration of one period.

The coordination team elects a chairperson and a deputy chairperson.

Based on proposals from the members and in consultation with the officer responsible for study matters, the coordination team compiles a course catalogue and assumes the tasks specified in the curriculum for the Doctoral Programme in Technical Sciences. The tasks of the coordination team also include the scheduling of the doctoral seminar.

Officer(s) responsible for study matters

The officer responsible for study matters at the Doctoral School of Electrical Engineering is the corresponding Dean of Studies, in accordance with the Excerpt of Statutes Organisation of Academic Affairs (Officers) at Graz University of Technology. If the Dean of Studies and the supervisor of the doctoral candidate are the same person, the deputy Dean of Studies becomes the officer responsible for study matters.



Doctoral candidate representative in the coordination team

The doctoral candidates of the Doctoral School elect a representative and a deputy representative for a two-year term. The representative participates in the preparation of the course plans for “Scientific Methods” and the doctoral seminar. The representative has the right to be heard in the event of a disagreement (as outlined in § 4 (8) of the curriculum).

6. Guidelines for supervision and mentoring

Doctoral candidates are typically supervised by a member of the teaching staff with a “*venia docendi*” teaching qualification from the institute to which the doctoral candidate is assigned. The framework for a regular exchange between the doctoral candidate and the supervisor in the form of reports written by the doctoral candidate is determined between the supervisor and the doctoral candidate at the beginning of the doctoral project. The supervisor's task is to support and challenge the doctoral candidates by delivering targeted and timely feedback on the results presented, offering networking support both within and outside the university, and providing ways of presenting the intermediate and final results of the doctoral project.

The research question of the doctoral thesis must be defined at the beginning of the doctoral project in the form of a written educational agreement, uploaded in TUGonline and confirmed by the supervisor.

The doctoral candidates have the right to ask one or more suitable people (mentors) for advice and support for their doctoral project. Mentoring should aim to provide informal and confidential support to the doctoral candidate. Mentors should come from the Doctoral School environment and have earned at least a doctorate or equivalent academic degree. They do not have to be explicitly affiliated with the Doctoral School of Electrical Engineering or Graz University of Technology (e.g., mentor is from cooperating company). The coordination team and/or the supervisors actively support the process of finding suitable mentors. The mentor is to be nominated by the coordination team upon the recommendation of the doctoral candidate. Any mentor is subject to a confidentiality agreement in accordance with § 12 of these statutes.

The supervisor should strive to enable the doctoral candidate to spend three months at a relevant foreign research facility during the time of the doctoral project and to support him/her in planning such a stay abroad.

The supervisor of a doctoral thesis must have a personal meeting with the doctoral candidate at least once a year during which the work's progress is discussed and the goals for the following year are set.

7. Instructional classes

7.a) Scope: The scope of the curricular workload totals 14 semester course hours per week (SWS) and consists of subject-specific basic courses totalling 8 SWS (§ 6 (2) of the curriculum), courses from Scientific Methods and Communication totalling 4 SWS (§ 6 (3) of the curriculum), and an exclusive tutorial for doctoral programmes totalling 2 SWS (§ 6

(4) of the curriculum). This curriculum¹ for the Doctoral Programme in Technical Sciences at Graz University of Technology is applicable in the currently valid version.

7.b) Subject-specific basic courses (8 SWS): The subject catalogue of subject-specific basic courses includes all courses (with the exception of those of the bachelor's programme) offered at the institutes associated with the Doctoral School and commissioned by the officers responsible for study matters. Each doctoral candidate must submit a list of the courses selected for the curricular workload, which must then be discussed with the supervisor and confirmed by the officer responsible for study matters. This course plan should include relevant courses which support the work on the doctoral thesis. To support the concept of a broad basic educational foundation at a high level, doctoral candidates are strongly discouraged from choosing only lectures that are offered at their supervisor's institute. Courses from § 9 of the curriculum for the Master's Degree Programme Electrical Engineering are recommended. However, courses that have already been completed as part of the requirements to enter the programme itself (i.e., master's degree programme) do not qualify as subject-specific basic courses.

It is expressly stated that doctoral candidates also have the option of choosing courses from outside the course catalogue of the Doctoral School (see § 6 (2) 4 of the curriculum).

Examinations completed at recognised national or international post-secondary educational institutions, universities or non-university research institutions (i.e., summer schools or specialist courses) may also be approved by the officer responsible for study matters if the proper level of equivalence is met.

7.c) Scientific Methods and Communication (4 SWS): The "Scientific Methods and Communication" part of the curriculum aims at teaching the theoretical knowledge and practical skills required for developing research results using scientific methods as well as how to present and defend these results. In the Doctoral School of Electrical Engineering, this curricular workload is usually covered by the doctoral seminar (2+2 SWS). The mandatory course total must be completed over the entire course of the doctoral project. Participation is recommended in the first and third research year. Before completing their studies at the Doctoral School, each doctoral candidate must participate in the doctoral seminar at least twice during which they will present their research. The doctoral project including the work plan should be presented in this doctoral seminar within the first year (§ 4 (1) of the curriculum).


Upon request, other courses with corresponding course content may be accepted by the officer responsible for study matters.

7.d) Exclusive tutorial for doctoral programmes (2 SWS): The exclusive tutorial for doctoral candidates provides personal supervision for a doctoral candidate, specifically reading and reviewing submitted concepts, preliminary results, formulations, inter alia., as well as the supervisor's specific feedback and opinion.

8. Publication guidelines at the Doctoral School

Prior to completing the doctoral programme, at least two publications on basic subjects from the doctoral candidate's research work must have been submitted and either

¹ Curriculum in the version approved by the Senate of Graz University of Technology on January 15, 2019.



verifiably accepted for publication or published in internationally peer-reviewed journals. In areas of applied research, at least two publications in relevant peer-reviewed journals or at relevant, peer-reviewed conferences must have been submitted and either verifiably accepted for publication or published. If the number of publications is not sufficient and/or the reputation of the conferences or journals does not demonstrably meet the requirements, at least three reviews must be obtained for assessment of the doctoral thesis.

9. Guidelines for the doctoral thesis

The doctoral thesis must be written in English. Exceptions require the approval of the supervisor and the officer responsible for study matters. If the doctoral thesis was written in cooperation with others, the share of work conducted by each person involved must be clearly referenced.

The doctoral thesis may take the form of a collection of several publications (“Manteldissertation” or “kumulative Dissertation” in German). These publications must have a related subject matter or must be connected to each other due to the overarching research question of the doctoral thesis. All individual publications included must contribute to the research effort and the respective relevance of each individual publication included must be clearly discernible. At least three of the publications included in such a doctoral thesis must meet the criteria in § 8 of these statutes. The doctoral candidate’s share of work in the publications must be clearly stated and confirmed by the co-authors, and must constitute at least 80% in at least one of the publications and at least 50% in all other publications.

Four printed copies of the doctoral thesis must be submitted to the Dean's Office.


As soon as a doctoral candidate has scheduled the submission of his/her doctoral thesis, it is strongly recommended that the Dean's Office be contacted in order to discuss the necessary formalities.

10. Guidelines for the assessment of the doctoral thesis

The doctoral thesis is assessed in accordance with § 31 (4) *Excerpt of Statutes Legal Regulations for Academic Affairs* by two evaluators, only one of whom may be a staff member of Graz University of Technology. The evaluators must be habilitated or have an equivalent academic qualification.

If no publication exists, at least three evaluators must be assembled to assess the doctoral thesis. The pre-selection of the evaluators according to § 5 (2) of the curriculum is carried out by the Doctoral School’s coordination team members. On this case, the supervisors and the doctoral candidates have the right to recommend evaluators. The habilitated members of the Doctoral School must be informed of the pre-selection and may give their opinion on the selection.

The supervisor is to support the doctoral candidate in the process of pre-selecting the evaluators. Pre-selection of the evaluators should be completed by the latest two months before the doctoral thesis is submitted. From this point on, all evaluators must familiarise themselves with the preliminary version of the doctoral thesis. This enables the doctoral



candidate to take any suggestions for improvement into consideration well enough in advance.

11. Guidelines for the doctoral examination process

a. Guidelines for the doctoral examination

The doctoral examination consists of two parts, these are (i) a presentation with a maximum length of approx. 30 minutes followed by a discussion and (ii) an oral exam by the board of examiners with a maximum length of 1 hour on the subject area of the doctoral thesis. The oral exam portion is a doctoral thesis defence with technical questions asked by the members of the board of examiners about the doctoral thesis, the doctoral presentation and closely related subject areas.

Not only the members of the board of examiners, but also all who are present are permitted to ask questions about the presentation portion of the doctoral examination, at the discretion of the chairperson. All members of the Doctoral School must be notified via email of the date of the doctoral examination and the composition of the board of examiners at least two weeks before the doctoral examination.

With the consent of the entire board of examiners, it is possible to utilise digital media to allow external examiners to participate in the doctoral examination. The reliability of the digital platform used must be tested in advance.

b. Structure of the board of examiners

The board of examiners consists of 3-5 people and functions in accordance with § 7 (2) 2 of the curriculum. The officer responsible for study matters of the Faculty of Electrical and Information Engineering serves as chairperson of the board of examiners or appoints a habilitated member of the Doctoral School as a representative. Furthermore, the board of examiners includes the supervisor and at least one other member, usually one of the evaluators is chosen for this. At least one member of the board of examiners must come from outside Graz University of Technology. All members of the board of examiners must be habilitated or have equivalent academic qualifications.

Upon the supervisor's or the doctoral candidate's request, the board of examiners can be increased from 3 people to 4 or 5 people. If the doctoral candidate and supervisor have differing opinions in this regard, the largest proposed board of examiners is used in order to ensure that as many different opinions are represented as possible. If there are no publications in accordance with § 8 of these statutes, then the board of examiners must consist of 5 people.



12. Confidentiality agreement

The habilitated members of the Doctoral School and the doctoral candidate representative on the coordination team must provide a written confidentiality agreement. This agreement refers in particular to (i) reports and statements issued by the doctoral candidate and his/her supervisor (§ 4 (4, 6) of the curriculum), (ii) all matters regarding the assessment of a doctoral thesis (§ 5 (2) of the curriculum), and (iii) the overall scope of the doctoral project and the doctoral thesis as whole, if access to the doctoral thesis is blocked or restricted by the officer responsible for study matters (§ 5 (1, 7) of the curriculum). In principle, the doctoral thesis is subject to the disclosure requirement (§ 86, Universities Act 2002). The doctoral thesis can only be blocked duly substantiated exceptional cases. In such cases, the officer responsible for study matters can, with mutual consent from the doctoral candidate, the supervisor and the partner(s), approve the blocking of the doctoral thesis for a limited period.

In the case of mentoring, a separate non-disclosure agreement must be signed both by the mentor and the mentee to maintain confidentiality.

13. Transitional arrangement

The current statutes are applicable to doctoral candidates who are subject to the curriculum for the Doctoral Programme in Technical Sciences at Graz University of Technology, which came into effect on October 1, 2020, namely the 2019 version. Full-time doctoral candidates who began the Doctoral Programme in Technical Sciences at Graz University of Technology prior to October 1, 2020 and were not subject to the curriculum in the 2019 version are entitled to continue and complete their doctoral programme until September 30, 2024 in accordance with the previously valid statutes.