

Statutes of the Doctoral School of Computer Science

at the Department of Computer Science and Biomedical Engineering
of Graz University of Technology

October 2020

These statutes were written by the coordination team of the doctoral school of computer science.

The doctoral school constitutes the formal framework in which the members of the doctoral school act. The members are the employees with a *venia docendi* for the assigned institutes together with the assigned doctoral students. The coordination team of the doctoral school, together with the officers responsible for study matters (typically, *Studiendekanin* bzw. *Studiendekan*), is responsible for the implementation of the subject-specific details according to §3(4) of the applicable curriculum.

The curriculum for the doctoral program in Technical Sciences and the curriculum for the doctoral program in Natural Sciences at Graz University of Technology are applicable in the currently valid versions.

1. Scope of the doctoral program

The doctoral programme at the doctoral school of computer science (*Doctoral School für Informatik*) deals with problems of the technical sciences in the broad area of computer science. The doctoral program develops advanced abilities of the students, not only in the engineering and natural sciences concerning their field of research, but also in related areas. The doctoral program educates students in close relation to current research. Students admitted to the program in accordance with §2(1) of the curriculum may join the doctoral school of computer science, independent of their previous degree, as long as the content of their doctoral subject may be classified as belonging to the subject area of computer science.

2. Academic degrees

At the doctoral school of computer science, graduates of the doctoral program admitted to the doctoral program in Technical Sciences are awarded the academic degree *Doctor of Technical Sciences* (abbreviated *Dr. techn.*). Graduates admitted to the doctoral program in Natural Sciences are awarded the academic degree *Doctor of Natural Sciences* (abbreviated *Dr.rer.nat.*).

3. Objectives and subject-specific qualification profile

The objectives of the doctoral program are to develop skills for independent scientific research, to advance knowledge of the student in the engineering and natural sciences of their specific subject area as well as related areas, and to impart abilities for presentation and defense of results at the highest level. Graduates of the doctoral program in computer science have in-depth knowledge of the area of their doctoral research work, skills in presenting and defending results, and the ability for teamwork. Graduates of the doctoral school are able to independently process latest scientific findings in the fields of engineering and natural sciences and apply this knowledge in practice.

4. Subjects of the doctoral school

The following institutes are associated with the doctoral school of computer science:

- Institute of Applied Information Processing and Communications
(*Institut für Angewandte Informationsverarbeitung und Kommunikationstechnologie*)
- Institute of Interactive Systems and Data Science
(*Institut für Interactive Systems and Data Science*)
- Institute of Theoretical Computer Science
(*Institut für Grundlagen der Informationsverarbeitung*)
- Institute of Neural Engineering
(*Institut für Neurotechnologie*)
- Institute of Computer Graphics and Vision
(*Institut für Maschinelles Sehen und Darstellen*)
- Institute of Computer Graphics and Knowledge Visualisation
(*Institut für Computer Graphik und Wissensvisualisierung*)
- Institute of Software Technology
(*Institut für Softwaretechnologie*)
- Institute of Biomedical Informatics
(*Institut für Biomedical Informatics*)

5. Coordination team

The doctoral school of computer science is headed by a coordination team made up of three members: (1) one member of the curia of professors, (2) one member, with *venia docendi*, of the curia of teaching staff (*Mittelbaukurie*), and (3) one member of the students in the doctoral school of computer science. The members of coordination team are nominated by the respective curiae. The coordination team elects a chairperson and a deputy chairperson in the constituent meeting at the beginning of a new senate period.

In consultation with the officers responsible for study matters, the coordination team compiles the list of courses and assumes the tasks specified in the curriculum for the

Doctoral Program in Technical Sciences and in the curriculum for the Doctoral Program in Natural Sciences at Graz University of Technology.

The student member as well as a deputy are elected by the PhD students of the doctoral school of computer science for the period of two years. They take part in the design of the “Scientific Methods and Communication” course as well as the doctoral seminar. The student member has the right to be heard in case of disagreement, as outlined in §4(8) of the curriculum.

6. Supervision and mentoring

The supervisor, a member of the doctoral school with *venia docendi*, actively guides a doctoral student throughout the duration of the doctoral program. The supervisor is responsible for completing the education agreement with the doctoral student until the conclusion of the first semester of the doctoral program enrolled by the doctoral student. The supervisor is also responsible for requesting, reviewing and approving the annual progress reports of the doctoral student, until, at the latest, the end of the first month of the following semester.

In addition to the supervisor, every PhD student may select a mentor. Mentoring should aim to provide informal and confidential support for the doctoral student. The mentor should support the mentee in the progress of their studies and in dealing with the supervisor throughout the doctoral studies. Mentors should come from the environment of the doctoral school (such as members of the scientific staff of the associated institutes) and hold at least a doctorate or equivalent academic degree. They do not have to be explicitly affiliated with the doctoral school of computer science or with Graz University of Technology (e.g., a mentor can be a person from a cooperating company). The mentor is nominated by the coordination team upon suggestion of the doctoral student. To maintain confidentiality, both the mentor and the mentee must sign a separate non-disclosure agreement before mentoring.

7. Instructional classes

7.1 Extent

The instructional classes amount to a total of 14 semester course hours per week (*Semesterwochenstunden*, abbreviated *SWS*) and consist of subject-specific basic courses in the amount of 6-8 SWS, courses from Scientific Methods and Communication in the amount of 4-6 SWS, and an exclusive tutorial (*Privatissimum*) for doctoral students amounting to 2 SWS, as specified in the curriculum §6(4).

7.2 Subject-specific basic courses

The subject catalogue of subject-specific basic courses includes all courses (with the exception of those listed in the bachelor’s program) offered by the institutes associated with

the doctoral school and commissioned by the officers responsible for study matters. Each doctoral student must submit a course plan, which has to be agreed upon with the supervisor and confirmed by the officers responsible for study matters. This course plan should include courses relevant for and in support of the work on the doctoral thesis.

It is expressly stated that students also may choose courses from outside the subject catalogue of the doctoral school, as specified in the curriculum §6(2,4).

Examinations completed at recognized national or international postsecondary educational institutions, universities or non-university research institutions (for instance, summer schools or specialist courses) may be approved by the officers responsible for study matters, if equivalence conditions are met. Courses students have completed as a part of their master's degree program are not admissible.

7.3 Scientific methods and communication

The part of the curriculum entitled "Scientific Methods and Communication" develops the theoretical knowledge and practical skills for research using scientific methods, as well as soft skills, including presentation, defending results and management. A dedicated course is held annually as a seminar (2 SWS) and is mandatory for doctoral students. Additional soft skill lectures at TU Graz can be attended as well.

The doctoral seminar (2 SWS) is a forum for doctoral students to present their research results and engage in in-depth discussions. Due to the size of the doctoral school, this seminar is held in several groups.

8. Publications

Students are expected to publish three articles in peer-reviewed international journals or at peer-reviewed international conferences prior to completing their doctoral studies. Eligible articles must be published or accepted for publication. Articles which have only been submitted for publication (but not yet accepted) can be deemed eligible if the dean of studies, after consulting the student and the supervisor, agrees. However, if not even a single published or accepted publication exists, at least three reviews of the doctoral thesis must be obtained.

9. Guidelines for the doctoral thesis

The doctoral thesis (*Dissertation*) must be written in English. Exceptions are subject to approval by both the supervisor and the officers responsible for study matters.

A cumulative dissertation (Manteldissertation) is possible if doctoral student and advisor agree on this format. The doctoral student must have co-authored at least six publications. The cumulative dissertation must consist of, at least, three published or accepted papers in

peer-reviewed scientific venues (in particular, international journals and conferences) as first author. At least one of the publications in the dissertation has to be published at an A* conference (CORE ranking), a journal with an impact factor of 5 or higher, or a Q1 journal (Web of Science). In the case of alphabetic author lists, a statement from all co-authors confirming that the doctoral student was the main author and would be the first author by contributions is considered equivalent to first authorship. A cumulative dissertation must include a monograph detailing background, state of the art, how the publications contributed to the state of the art, and conclusions that can be drawn from the dissertation.

The doctoral thesis must contain a collaboration statement, which contains an annotated publication list of the candidate and explains the relation between the publication and the submitted doctoral thesis. The statement must also describe which parts of the doctoral thesis are based on previously published work. If the previously published work is jointly authored by multiple co-authors, the statement must explain which part the doctoral student had in the creation of the previously published work.

The thesis must be submitted online and in the form of two bound hardcopies to the office of the dean of computer science and biomedical engineering.

10. Assessment of the doctoral thesis

The doctoral thesis is assessed by two reviewers in accordance with §31(4) of the Bylaws on Study Matters (*Satzungsteil Studienrecht*). If no publication exists, at least three reviews of the doctoral thesis must be obtained. Reviewers must have *venia docendi* or an equivalent qualification. At least one reviewer must come from outside of TU Graz.

According to §5(2) of the curriculum, the reviewers are selected by the coordination team of the doctoral school based on a list of possible reviewers jointly suggested by the student and the supervisor. The members of the doctoral school with *venia docendi* must be informed of the pre selection and have the option of commenting on the selection. Pre-selection of the reviewers should be completed at least two months before submission of the doctoral thesis. From this point on, all reviewers must be familiarized with the preliminary version of the doctoral thesis. This enables the doctoral student to take any suggestions for improvement into consideration in good time.

11. Doctoral examination

The doctoral examination (*Rigorosum*) consists of two parts, (1) a presentation of approx. 30 minutes, and (2) an oral exam by the board of examiners with a maximum length of 60 minutes on the subject area of the doctoral thesis.

The board of examiners consists of three to five members: the dean of studies in computer science, who is chairing the examination, and two to four other examiners. If the dean of studies is unavailable, the dean may nominate another examiner from within TU Graz as a substitute chairperson. All examiners must have *venia docendi* or equivalent qualification. At

least one examiner must come from outside TU Graz. A board consisting of three examiners (including the chair) suffices, unless the student or the supervisor request a larger number of examiners. If the student has no publications, a board of five examiners is mandatory.

12. Confidentiality agreements for the members of the doctoral school

The members of the doctoral school with *venia docendi* and the student member on the coordination team must sign a written confidentiality agreement. This agreement refers in particular to (1) reports and statements issued by doctoral student and supervisor, as indicated in the curriculum §4(4,6), (2) any aspects regarding the assessment of a doctoral thesis, as indicated in the curriculum §5(2), and (3) the overall scope of the doctoral project and the doctoral thesis as a whole, if access to the doctoral thesis is blocked or restricted by the officers responsible for study matters, as indicated in the curriculum §5(1,7).

13. Transitional arrangements

These statutes apply to students who are subject to the 2019 version of the Curriculum for the Doctoral Program in Technical Sciences with entry into force on October 1, 2020. Students who started their doctoral studies in technical sciences before October 1, 2020 and did not change to the curriculum for the doctoral program in technical sciences in the 2019 version are entitled to continue their doctoral studies until September 30, 2024 based upon the previously applicable statutes.