

Standard Procedure for Doctoral Program at the Faculty of Informatics

Vienna University of Technology*

Effective March 1st, 2015

Updates on May 7th, 2017 are effective October 1st, 2017

The doctoral program in computer science aims to provide a strong and productive setting for the doctoral program students to become knowledgeable, competent, responsible, and independent researchers, able to contribute technically and scientifically at the forefront of a given subfield of computer science or business informatics. The doctoral program is based on the official “Studienplan für das Doktoratstudium der Naturwissenschaften//Sozial- und Wirtschaftswissenschaften//Technischen Wissenschaften an der TU Wien”. The doctoral program provides opportunities and sufficient guidance for the students to work and contribute to the given field, working on relevant, non-trivial problems and issues. It is completed with a dissertation that is independently evaluated and publicly defended to a doctoral thesis evaluation committee and public audience.

The doctoral program at the Faculty of Informatics is structured into the following phases:

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| Phase | Involved bodies | Result |
|--------------------------------------|---|---|
| Enrolment (Inskription) | Admission office Supervisor | Enrolled |
| Proficiency | Supervisor A national expert A chair | Sufficient / Insufficient Feedback |
| Pre-Submission | Supervisor A national expert A chair 2 International experts | Accepted Minor revision Major revision Rejected Revision letter |
| Official Submission of the Thesis | Dean's office 2 International experts | Grade of the thesis: S1, U2, B3, G4, N5 Final reviews |
| Defense (Rigorosum) | Supervisor A national expert A chair 2 International experts | Grade of the defense: S1, U2, B3, G4, N5 |

The following procedure presents the doctoral program at the Faculty of Informatics and is effective at March 1st, 2015:

1. The doctoral program will normally take 3-5 years, the duration is independent of funding. In addition to the dissertation, the current standardised programme for doctoral students at the Vienna University of Technology stipulates that a total of 180 ECTS of modules (162 ECTS of which are the dissertation) must be completed. 180 ECTS points are equivalent to three academic years. Students usually complete their degree requirements within three to five years, and are awarded their degree after they submit and successfully defend their dissertation.
2. **Admission/Enrolment** (Zulassung) – The successful completion of a relevant master's or other equivalent degree program of a recognised domestic or foreign postsecondary educational institution is a precondition for admission to the doctoral program. Candidates need to find a supervisor before applying for admission to the doctoral degree program at the admission office. Depending on the educational background of a candidate, supplementary examinations (specified by the dean of academic affairs in consultation with the supervisor) can be required for full equivalence and have to be sit during the doctoral degree program. In cases where it is not clear whether an admission can be granted, the dean of academic affairs will consult with the director and the board of the PhD School.
3. During the studies, regular meetings between the candidate and the supervisor are expected. At the minimum both the candidate and the supervisor can request a monthly meeting.

4. Role of the supervisor is to guide the candidate (breadth and depth), make sure that the work and results will be of sufficient interest and quality to the scientific community. Normally, this will follow in close collaboration, but it is not the role of the supervisor to solve the problems.
5. 18 ECTS points of courses at advanced master and doctoral level are required as listed below:
 - Fundamental courses – These are expected to be in the following areas in total of 6 ECTS: philosophy of science and methodologies, career planning, or research methods in computer science (consisting of formal, qualitative, quantitative, and design methods). At least one course is expected to be related to methodologies.
 - Area courses – These specific courses are expected to be related to the research area, in total of 12 ECTS.
 - At most 6 ECTS are allowed to be of type SE (Seminar) or PV (Privatissima) (as stated in the “Richtlinie der Studiendekane – September 2013”).

The courses can be submitted for approval in the application for doctoral program at the Faculty of Informatics after the proficiency evaluation by using the forms “Announcement of a doctoral thesis”, “Doctoral thesis agreement”, and “Application for approval of the courses for the study-specific curriculum”. The courses are chosen by the candidate and the supervisor, and approved by the dean of academic affairs. The regular procedure will be to choose courses from the Fundamental courses and the Area courses (of the respective research area) offered by the Vienna PhD School of Informatics¹, in which case approval by the dean of academic affairs can normally be expected.

6. **Proficiency** – At the earliest half-a-year after enrolling in the doctoral program and at the latest 1,5 years after the enrolment, the proficiency evaluation starts.
 - (a) The candidate submits a research proposal to the supervisor, surveying the chosen field of research including the state of the art with at least 10 relevant references, outlining a research direction and concrete problems, including problems addressed so far, possible approaches and solutions to the defined research questions, the methodology chosen for the doctoral work, schedule mentioning conferences, workshops, and journals where intermediate results are planned to be published. The research proposal is on the order of 10 pages. The research proposal is intended as a guideline for the remaining part of the doctoral program, but is not a fixed work plan and can (should) change and evolve over time.

¹<http://www.informatik.tuwien.ac.at/teaching/phdschool/courses>

- (b) The dean of academic affairs sets up a proficiency evaluation committee comprising of the supervisor, a national expert (who is either a member of Vienna University of Technology or another Austrian university) and a chairperson assigned by the dean of academic affairs. The chairperson is a member of the Faculty of Informatics but belongs to another institute than the supervisor.
 - (c) The student is required to present the research proposal to the proficiency evaluation committee at the Faculty of Informatics. The oral presentation should be 30 minutes long, is announced officially, and open to faculty members including students of the doctoral program.
 - (d) The proficiency evaluation committee provides two types of feedback:
 - i. an immediate feedback after the presentation with the categories “sufficient” or “insufficient”,
 - ii. a written feedback with details for improvement.
 - (e) The dean of academic affairs approves formally the assessment of the proficiency evaluation committee.
 - (f) If the decision is “insufficient”, the candidate is allowed to re-submit and re-present after at most 6 months. In case of a second “insufficient” feedback the candidate needs to modify the research focus and related issues stated in the feedback.
7. In case of a “sufficient” proficiency evaluation the candidate fills in the “Doctoral thesis agreement” (“Dissertationsvereinbarung”). This document is signed by the doctoral candidate and the supervisor. The dean of academic affairs also needs to take note of the doctoral thesis agreement with his/her signature.
 8. Progress is recorded in short yearly reports (ca. 1-3 pages), which covers the reporting agreed upon in the “Doctoral thesis agreement”, backed up by submitted or published papers. The progress report should also discuss current issues, problems and obstacles, and can outline a work plan. The progress report is discussed with the proficiency evaluation committee.
 9. The doctoral work will normally lead to scientific publications, and as a rule a number of publications in relevant workshops, conferences, and possibly journals are expected. More specific requirements and expectations are fixed in agreement with the supervisor.
 10. The doctoral thesis is a monograph (100-200 pages, single-spaced) and can be heavily based on published research. A purely cumulative doctoral thesis with a substantial summary of the research presented in the papers requires additional justification.
 11. **Pre-Submission** – It is the responsibility of the doctoral candidate to decide when the thesis is ready for submission and evaluation. When the candidate submits the finished thesis at the dean’s office the submission phase starts.

- (a) For submission evaluation, two independent, international, expert-in-the-field reviewers are added to the proficiency evaluation committee. Both experts are expected to be international. Experts are suggested by the proficiency evaluation committee and formally approved and assigned by the dean of academic affairs. Proficiency evaluation committee plus two international experts build the submission committee which is the committee of the final defence.
 - (b) International experts are required to be independent of both student and supervisor, and required likewise to do their review independently of both. At least one of the international experts is expected completely independent, i.e., no joint publications and project proposals with the student or the supervisor for the past five years before the review (roughly aligned with the expected length of the doctoral program).
 - (c) The finished, submitted thesis is reviewed by the two international experts. The supervisor is not a reviewer of the thesis.
 - (d) The international experts will submit detailed, specific, written reviews at the dean's office after at most two months. Experts can suggest or request changes to the thesis, which they should in such cases sufficiently detail.
 - (e) After having the reviews, the submission committee provides a revision letter with detailed reviews including a grade and a description for the justification of the grade. The grade can be one of the following:
 - i. Accepted
 - ii. Minor revision (less than 6 weeks work necessary)
 - iii. Major revision (max. 6 months work necessary)
 - iv. Rejected (more than 6 months work necessary)
 - (f) The revision letter is signed by all members of the submission committee and sent to the student via the dean's office.
 - (g) In case revisions are requested, the supervisor is responsible for ensuring that these are done by the student accordingly; international experts can require to check the modifications.
12. **Official Submission of the Thesis** – The (possibly corrected) doctoral thesis is bound and submitted to the faculty not later than 6 months after receiving the pre-submission evaluation letter. The final grading and the final reviews are done by the two international experts. There are five grades:
- (a) “Sehr gut (S1) – very good” is the best possible grade.
 - (b) “Gut (U2) – good” is the next highest grade.
 - (c) “Befriedigend (B3) – satisfactory” indicates average performance.

- (d) “Genügend (G4) – adequate” is the lowest passing grade.
- (e) “Nicht genügend (N5) – unsatisfactory” is the lowest possible grade and the only failing grade.

The thesis and the final reviews of the international experts are accessible only to the faculty members and the international experts at the dean’s office for 4 weeks after the arrival of both reviews.

13. **Defense (Rigorosum)** – The dissertation defence is oral and open to public.

- (a) At least one of the international experts is expected to be physically present.
- (b) The defence consists of a 45 minute presentation of the candidate, that should explain the context and the specific contributions. This will be followed by a questioning and discussion, starting with the international experts, followed by general discussion with the audience.
- (c) The defence is judged by the submission committee. There are five grades:
 - i. “Sehr gut (S1) – very good” is the best possible grade.
 - ii. “Gut (U2) – good” is the next highest grade.
 - iii. “Befriedigend (B3) – satisfactory” indicates average performance.
 - iv. “Genügend (G4) – adequate” is the lowest passing grade.
 - v. “Nicht genügend (N5) – unsatisfactory” is the lowest possible grade and the only failing grade. In case of “Nicht genügend – unsatisfactory” the decision is justified in a defence letter and sent to the student.