

- 1. Before starting the PhD**
- 2. During the PhD**
- 3. Drafting the doctoral thesis**
- 4. PhD examination**
- 5. After the exam: additional requirements and publication**

Guidelines PhD Biology TU Darmstadt

The relevant provisions for a PhD can be found in the PhD Regulations (General Provisions of the PhD Regulations of Technische Universität Darmstadt as of January 12, 1990 (ABl. 1990, p. 658) as amended in the 8. Amendment of December 21, 2017 (PO/AT)) and the Special Provisions of the Department of Biology of September 6, 2019.

Before starting the PhD

You have found an appropriate topic for your doctoral thesis and a supervisor from the Department of Biology at TU Darmstadt. Now you need a co-supervisor for further support during your PhD.

Who is entitled to act as a supervisor or a co-supervisor?

generally the professors of TU Darmstadt or of other universities. More information is provided in §11 of the TU Darmstadt PhD regulations. Certain young researchers, apl. professors or associate lecturers are entitled to independently act as PhD supervisors. In that case, however, the co-supervisor has to be a full professor at the department of Biology.

In case of PhDs in cooperation with external research institutions or with an industrial company, the rules are somewhat different (see §11 PhD regulations). In such a case it is necessary to ensure that the supervisor has the necessary qualifications (e.g. being a professor at a different university). Information in individual cases can be requested from the PhD board.

Now the formal part of the PhD begins. You need to submit your application to become a PhD candidate with the Department of Biology. The PhD board (composition of the committee see §3 PhD regulations) checks your qualifications. As a rule you qualify for a PhD with a completed master's degree in Biology or a related natural sciences degree with a final grade better than 2.5 (or equivalent in other grading systems). In case you have completed „Staatsexamen LAG“ or studies at a University of Applied Sciences, the PhD Committee will carry out an aptitude test („Eignungsfeststellungsverfahren“). This test is established to prove the competence and ability to independently carry out scientific work. If necessary, requirements are imposed - certain courses necessary for the PhD may have to be passed during the first year of the PhD. Those requirements are bound to be completed successfully in addition to other courses and lectures of a structured training program (see below).

Application for PhD admission with the Department of Biology

In order to be able to start your PhD formally, you need to register and apply for being accepted as a PhD candidate at the department of Biology – if possible at the beginning of your PhD thesis.

The registration (not to be confused with an enrollment/matriculation at TU Darmstadt!) and the application for being accepted as a PhD candidate are obligatory.

- a. First of all, please fill the form application for being accepted as a PhD candidate.
- b. Then register online for PhD, see paragraph 2. under:
https://www.intern.tu-darmstadt.de/dez_ii/hochschulrecht/promotion_an_der_tu_darmstadt/faq_6/artikel_details_de_en_dezii_171264.en.jsp
- c. Now submit your application to Dezernat Internationales (International Admission), see paragraph 3. under:
https://www.intern.tu-darmstadt.de/dez_ii/hochschulrecht/promotion_an_der_tu_darmstadt/faq_6/artikel_details_de_en_dezii_171264.en.jsp

The Dezernat Internationales (International Admission) will examine your degrees for equivalence and will communicate the results to the Department of Biology.

Now submit the following papers to the dean's office of the Department of Biology:

- a. The printout of the application form from MoveIn or the registration form (printed Excel-document) - see paragraph 3 under:
https://www.intern.tu-darmstadt.de/dez_ii/hochschulrecht/promotion_an_der_tu_darmstadt/faq_6/artikel_details_de_en_dezii_171264.en.jsp
- b. The application for being accepted as a PhD candidate (see above; document confirming supervision, signed by a supervisor of the department of Biology (according to § 10) and a co-supervisor (according to § 11)).
- c. the university or college certificates that qualify you for a PhD
- d. in case of an external dissertation at a research institute outside the university or at a different university: a short statement outlining the PhD project as well as the confirmation of the external supervisor in writing

After you receive the confirmation that you are admitted, you may (this is optional!) enrol with TU Darmstadt as a PhD student.

During the PhD

The department offers a structured training program for all PhD candidates. This includes:

Supervision agreement: At the beginning of the doctorate the PhD candidate and the supervisor sign an agreement, which defines the respective rights and duties. The aim is

to support PhD candidates and supervisors in developing the scientific project, so that it can be completed successfully within the specified time frame.

Thesis advisory committee (TAC): PhD candidates are supported not only by their supervisor but in addition by a committee of experienced scientists. This committee can be composed of the supervisor, the co-supervisor and up to two more members – who may be full professors, (post-doctoral) scientist of the department as well of other TU Darmstadt departments or of external scientific organizations. The first meeting of the TAC (meetings are organized by the candidate) should occur within 6 months after you are accepted for PhD at the department. Further meetings should take place once a year. One week before the meetings, the PhD candidate needs to send a short report to the TAC. After the TAC meeting, an updated version with feedback of the committee members will circulate. In case the TAC meeting is not considered to be satisfactory, it will be convened again within the following 6 months. Should the meeting again be unsatisfactory, the TAC recommends to end the PhD procedure.

Training program: For supporting the qualification process of the PhD candidate, the individual work on a scientific project will be accompanied by a training program. This program comprises approx. 40 working hours in the course of the doctorate and it contains the following points:

- a) at least two courses from the Ingenium Program of TUD; with the approval of the supervisor other courses may be attended
- b) attending at least 10 talks from the Biological Colloquium of the department or other equivalent scientific talks
- c) attending at least one talk during the PhD symposium of the department
- d) additional courses which were defined as additional requirements in the proficiency test (Eignungsfeststellungsverfahren)
- e) in the conclusive certificate, the following further achievements will be mentioned:
 - a. participation in (international) conferences/symposiums
 - b. poster presentations or talks
 - c. internships at other labs
 - d. courses attended (with certificates)

Self organization/PhD candidates representative: The doctoral candidates elect two representatives, who act as contact persons for the department, who will represent the concerns of the PhD candidates, who cooperate constructively in developing the training program and act as mediators in case of conflicts that might arise. The representatives are elected by a general assembly of all PhD candidates for a period of two years.

Student's guest lecturer program: Every semester the PhD candidates invite an external speaker for a talk at the Biological Colloquium. With the support of experienced scientists, the PhD candidates organize the visits (including individual meetings) with interested doctoral candidates, postdocs and group leaders. The department will provide travel funds for this.

Change of supervisor: Should a change of the supervisor or co-supervisor become necessary in the course of the doctorate, this is possible via a request (application form) to the PhD board. For this process, it is necessary to inform the former and the future supervisors and to provide their written approval (supervisor change form). In case of

possible conflicts, all parties involved are given the opportunity to present their viewpoint before the PhD board takes a decision.

Drafting the doctoral thesis

After finishing the scientific work, you have two possibilities, to submit the doctoral thesis to the department:

Monograph. The name already suggests that this kind of thesis mostly consists of an introduction, a material and method section, results, and a discussion. The whole work is completed by a summary and a literature part. Variations are possible, e.g. different chapters with a similar structure may be combined. It is important, that this kind of thesis only contains your own results and that any research results provided by others are marked as such. If figures are copied from other works, the transfer of rights has to be granted by the author.

Cumulative dissertation: This type of dissertation is a compendium of publications authored by the candidate. If during the doctorate at least three publications of original research results are published in peer-reviewed journals or are accepted for publication, they can be joined together and submitted as a cumulative thesis. In this context it is important that the works arose in the context of the dissertation and that you are (co-) first author in at least two out of the publications.

If these requirements are fulfilled, a request for cumulative dissertation has to be filed with the PhD board before the thesis is submitted. Here it has to be guaranteed, that your own contribution to all the included publications is marked explicitly and that legal compliance is ensured. This is why the examination regulations demand a statement, where you outline your contribution for each publication in detail. This statement has to be signed by all authors of the respective publication and it forms part of the examination file. It is not enough to attach an email of a co-author, but rather a personal handwritten signature is required. Other unpublished works can be attached as additional chapters of the cumulative dissertation, they may, however, only contain contributions of the PhD candidate that were drafted independently by him/her. Furthermore, when writing a cumulative dissertation, a comprehensive introduction, discussion and summary must be included to outline the overall framework of the dissertation and how the individual studies relate to each other.

The dissertation may be in German or in English language. A summary in both languages is needed for publication at the university publication server.

The title page of the thesis must comply with the requirements listed in the [title page specifications](#).

In addition, the dissertation needs to contain a legally binding declaration, that the thesis was composed independently – except for the explicitly mentioned aid. For legal reasons this declaration has to be in German – an English translation may be attached.

PhD examination

When you submit your thesis, the last phase of the doctorate begins. You apply for the PhD exam by sending the form „application for PhD exam“ to the Dean of the department. The following documents have to be submitted in addition:

- a) the form „application for PhD exam“

- b) five copies of the thesis (one printed version plus an electronic version for the Dean's office, one copy for each supervisor and each examiner)
- c) a proof that you paid the PhD fee of €100 to the following account:
TU Darmstadt
Stadt- und Kreissparkasse Darmstadt
Projektnummer: 40100191
IBAN: DE36 508 501 500 000 704 300
- d) in case of an aptitude test – the final completion certificate proving that you acquired the relevant credits
- e) if you participated in the structured graduate program: a list of all the achievements via the respective form on the Biology department website
- f) in case of a cumulative PhD please carefully read the relevant provisions in the PhD regulations of TU Darmstadt and in the Special provisions of the dep. of Biology and extend the application for PhD exam by an application for cumulative PhD.

PhD candidates of other research institutions with an external supervisor may start the procedure at this point. In such a case the department assures an evaluation rather than a supervision. The structured training program is not possible at this point, however, the requirements mentioned under registration for PhD, apply. In case of external PhDs usually the supervisor at the respective research institution acts as one of the reviewers. In that case, the other reviewer is bound to be a professor (ordinarius) at the department of Biology. However, the department prefers for externally supervised PhD candidates that they apply for PhD at the beginning of their thesis.

Both reviewers, independently from each other, write their evaluation of the PhD thesis within eight weeks, and transmit them to the Dean of the department. The evaluation either recommends acceptance or rejection of the thesis. In case of acceptance, the reviewer evaluates the thesis with one of the following grades:

- excellent (ausgezeichnet)
- very good (sehr gut)
- good (good)
- satisfactory (genügend)

If both evaluations on the thesis rate „excellent“, this rating may also be considered for the final grade. In this case a third opinion by an external expert is necessary.

The supervisor will be informed by the Dean's office, so that she or he can name a competent scientist of another university or non-university research institution. This expert opinion will then -together with a statement regarding possible conflicts of interest – be presented to the PhD board. Furthermore, the rating „excellent“ requires at least one publication with you being the first author, published in a peer-reviewed journal or accepted for publication.

Upon receipt of the thesis evaluations, they are made available for two weeks to all the professors and entitled members of the department. During this period it is possible to present statements or special reports. At the end of this consultation period, the examination commission decides whether the thesis is accepted. The examination commission is chosen by the PhD board and it is set together as follows:

in German or in English language. After the disputation, which is not supposed to last more than one hour, the commission determines the overall grade of the doctoral exam in a non-public meeting. The rating of the presentation and the examination as well as the rating of the written expert opinions determine the overall grade. The following grades are possible:

- passed with distinction (mit Auszeichnung bestanden)
- passed with the rating very good (sehr gut bestanden)
- passed with the rating good (gut bestanden)
- passed (bestanden)
- not passed (nicht bestanden)

Possibly, changes might be required that need to be made before publication. The first supervisor is in charge of verifying that the changes have been made. The thesis should be published via the TUD publication server within one year. More details are specified in §19 of the examination regulations.

After the exam: additional requirements and publication

After the dissertation and after you have made the requested changes, present the changed version to your first supervisor to approve the publication of this version through her/his signature on the form Declaration Relating to the Doctoral Thesis and Transfer of Rights.

Under version details please enter the file name of the final approved version that you upload with Tprints.

Hand this declaration form in at the Dean's office (it will be forwarded to Tprints).

Register with Tprints under:

<https://tprints.ulb.tu-darmstadt.de/cgi/register>

and upload the dissertation.

Appendix

Examples for „Authors’ contributions list“

For (co-)first author publications:

(Full publication reference with all authors)

Melanie Musterfrau performed all experiments, data analysis and manuscript writing including figure and table preparation except for:

- Text section ... written by ...*
- Figure ... (part ...) contributed by ...*
- Table ... (part ...) contributed by ...*

I certify with my signature that I agree with the above.

<i>Author name</i>	<i>Signature</i>	<i>Date</i>

Musterfrau, ...
 ...
 ...

For co-authorship on publications

(Full publication reference with all authors)

Melanie Musterfrau contributed:

- Text section ...*
- Figure ... (part ...)*
- Table ... (part ...)*
- Data analysis ...*
- Etc.*

I certify with my signature that I agree with the above.

<i>Author name</i>	<i>Signature</i>	<i>Date</i>

Musterfrau, ...
 ...
 ...

