

# Guidelines for PhD study in Botany

These guidelines are established by the study board primarily as recommendations and aids for doctoral students. The guidelines follow the Higher Education Act, [the Code of Study and Examination of Charles University](#), [Scholarship and Bursary Rules of Charles University](#), and [the Rules of Study at the Faculty of Science](#).

## Principles

- Doctoral study is primarily independent study by the candidate under the guidance of a supervisor, where the primary role is played by the candidate's own research culminating in a doctoral thesis and its presentation to the scientific community.
- Part of the study includes participation in scientific activities at the department (seminars, defences, etc.) and presentations at departmental and field-specific seminars.
- The progress of doctoral studies is reviewed by the Board at least once a year.
- The supervisor is usually an employee of the Faculty of Science, Charles University, or the Institute of Botany of the Czech Academy of Sciences. If the supervisor is not an employee of either of these institutions, the doctoral student must also have a consultant from either the Faculty of Science or the Institute of Botany.

## Admission Requirements

- The admission process for doctoral studies follows the current conditions published on the [faculty's website](#).
- The prerequisites for study, independent scientific work, and the level of professional knowledge are demonstrated through an oral interview with members of the admission committee.
- The admission committee usually consists of 3-5 members; all members of the Board may participate in the admission process.
- The application must include a proposal for the topic and content of the work in electronic form, usually 1-3 pages in length. The proposal should include the scientific contribution of the topic, its feasibility, a specific description of three publications planned as part of the doctoral thesis, and funding possibilities. The proposal can be structured according to the Guidelines for the doctoral work plan.
- For the entrance exam, the student prepares a presentation of this general idea of the topic of the work lasting a maximum of 10 minutes. The admission committee evaluates, in addition to the candidate's professional abilities, primarily this presentation, the interest and relevance of the topic, its connection to the issues addressed in the field, and the clarity of the presentation.

- The potential supervisor's participation in the admission process is recommended, and their interest and opinion are important guides for the admission committee's decision. If the supervisor is not an employee of the Faculty of Science or the Institute of Botany, the participation of a consultant is also appropriate. The candidate ensures the participation of the potential supervisor and consultant in the admission process.
- The main reasons for not accepting a candidate in the admission process include:
  - The candidate did not demonstrate the necessary prerequisites for study and independent scientific work.
  - The candidate did not submit a proposal for the topic and content of the work with a specific supervisor.
  - The candidate did not convince the admission committee that the proposed topic is sufficiently substantial and that a defensible doctoral thesis can be developed on it.
  - Capacity reasons (the candidate did not achieve the minimum number of points required for admission considering the economic and capacity possibilities of the faculty).

### **Doctoral Student's Study Plan**

- The study plan is prepared by the doctoral student together with the supervisor. The doctoral student's study plan is submitted to the Board through the SIS within the specified deadline. The Board reviews and approves it according to the schedule set by the dean.
- This plan includes:
  - The planned course of research activities, including study stays and internships. This needs to be prepared according to the Guidelines for the doctoral work plan.
  - Participation in departmental and field-specific seminars throughout the study period is a mandatory part of the study plan.
  - Any other planned activities during the study (lectures/courses, professional internships, participation in conferences, etc.). These activities can be included in the study plan even after their completion during the annual evaluation.
- The student may build on their previous qualification work in the doctoral thesis; however, there must be a significant qualitative shift in the research of the topic. Results from previous qualification work may become part of the publications in the doctoral portfolio, but only as a supplementary element. Publications arising solely or predominantly from data presented in the diploma thesis may not be part of the doctoral dissertation.
- The study plan may be changed and specified with the consent of the Board.
- Changing the topic of the doctoral thesis is subject to approval by the Board. The proposal to change the topic must include the supervisor's statement. In such a case, the Board will assess whether a new study plan will be required.

### Three-Member Committees

- For the ongoing evaluation of the doctoral student's study, the Board establishes a three-member committee that remains constant throughout the study period. This committee proposes the approval of the study plan at the beginning of the study, evaluates the doctoral student's performance in the 1st year, conducts an in-person evaluation after the 1st year of study, evaluates the subsequent years, forms part of the examination committee for the state doctoral exam, evaluates the draft introduction of the thesis in the fourth year, and forms part of the committee for the defence of the doctoral thesis (excluding the supervisor).
- The committee consists of a guarantor (the same for all students of the given year of the given department), the supervisor, and a third member.
- The list of three-member committees is available [here](#).

### Requirements for Doctoral Students During Their Studies

- **Work on the Dissertation:** The supervisor evaluates the dissertation, and their evaluation is part of the annual report submitted by the doctoral student to the Board.
- **Annual Presentation:** Doctoral students must present their progress on their doctoral project at departmental seminars in the Department of Botany.
- **1st Semester:** Presentation of the doctoral topic at the department's poster session. The poster should mainly include the conceptual background of the project, hypotheses and questions, detailed information on methodological approaches, and expected results.
- **End of 2nd Semester:** Defence of the first-year work report before a three-member committee. Successful defence of the topic and first-year work is a necessary condition for continuing the study.
- **(3rd-4th Semester:** State doctoral exam (not applicable to students starting from 2025).
- **5th-6th Semester:** Presentation of the doctoral project results and outlook for the remainder of the doctoral study at a departmental seminar. Before this presentation, the doctoral student submits tangible outputs of their project (articles, article manuscripts, posters, etc.) to the Board.
- **Presentation at an International Conference:** The doctoral student must present their results (in the form of a poster or lecture) at least once at a renowned international conference (usually abroad).
- **Foreign Internships:** The Board recommends that the doctoral student spend at least one month on a scientific internship by the end of the third year. A scientific internship is understood as a study or work stay at a scientific institution with a theme close to the doctoral thesis topic, usually abroad. It must not be at the supervisor's workplace. The internship can be one long-term or several shorter stays.
- **Publication Requirements:** It is expected that the doctoral student (i) submits a first-author article for peer review by the end of the second year, which will be part of the dissertation, (ii) submits a second article for peer review by the end of the third year

(which does not have to be first-author), and (iii) submits a draft of the dissertation introduction to the Field Council by the middle of the 4th year.

- **Active Participation:** Doctoral students are expected to actively participate in the scientific activities of the department, especially in regular departmental seminars, field-specific seminars, and PhD outings.
- **Combined Study Form:** The date of the doctoral exam and seminar presentation is usually postponed by one year for students in the combined study form (doctoral exam in the (5th-)-6th semester, seminar presentation after the 7th semester).
- **Teaching Activities:** Teaching at the department is not part of the doctoral student's study obligations. However, it is desirable for doctoral students to participate in teaching activities to a reasonable extent during their studies.
- **Changes to Obligations:** Changes to the obligations listed here are possible only with the consent of the Board.

### **Evaluation of Doctoral Students During Their Studies**

- **Regular Evaluation:** The Board regularly evaluates the activities of students at least once a year. It assesses whether the student fulfils all points of their study plan. The basis of the evaluation is primarily the statement of the three-member committee defined above, which accompanies the student throughout their studies.
- **Success Criteria:** The student's success during their studies is mainly evaluated based on their professional publication activities related to the doctoral thesis topic and the presentation of their work results to the scientific community. Successful students are expected to conduct independent research and communicate scientifically in English, including publications in international journals.
- **Annual Report:** The doctoral student prepares the evaluation materials in the form of an annual activity report. The report, with the supervisor's statement, is submitted to the Board by the deadline set by the dean (usually at the end of September) through the SIS. The obligation to submit the report applies to all doctoral students, both full-time and part-time, throughout the duration of their studies. If the doctoral student does not submit the report by the deadline, it is assumed that the student has not fulfilled the obligations of the study plan. In such a case, the Board will propose their exclusion from the study.
- **Seminar Presentations:** The evaluation of the doctoral student also includes seminar presentations (especially the presentation of the doctoral topic in the first year of study and the presentation in the third year of study) and other activities at the workplace.
- **Use of Evaluation Results:** The Board uses the results of the doctoral students' evaluations in its further activities, especially to influence the course of the doctoral student's study (highlighting deficiencies, proposing adjustments to the scholarship amount, extraordinary scholarships, proposing exclusion from the study, etc.).

## State Doctoral Exam (Abolished for Students Starting from 2025)

- **Exam Requirements:** The state doctoral exam must be taken according to the specifications given in the study plan, usually in the (3rd-)4th semester for full-time study. The student submits a written request to take the state doctoral exam to the doctoral study department.
- **Exam Committee:** The exam is conducted before an examination committee and is adapted to the specific topic of the student. The doctoral exam demonstrates (i) a general overview of the field of the doctoral thesis (the subject "Botany" should be indicated in the application) and (ii) detailed knowledge of the doctoral thesis topic (indicate as "Doctoral Thesis Topic" in the application, or directly list the abbreviated title).
- **Additional Subjects:** In addition to these two basic subjects, the candidate specifies another field of interest in the application, usually from the following list: Phycology, Mycology, Lichenology, Bryology, Phytopathology, Algal Ecology, Fungal Ecology, Lichen and Bryophyte Ecology, Systematics and Evolution of Higher Plants, Biosystematics, Reproductive Biology, Molecular Markers, Numerical Methods in Taxonomy, Vegetation of Central Europe, Plant Ecology, Earth's Biomes, Community Ecology, Paleoecology, Plant Population Biology, Phytogeography.
- **Thesis Analysis:** The application for the doctoral exam must include an analysis of the current state of the doctoral thesis topic, which must contain the initial definition of the work's objectives, a statement on the progress made in achieving them, planned changes in the approach, and a specific description of three publications planned as part of the doctoral thesis, including their current preparation status. The analysis should be about 5-10 pages long and can be conceived as an introduction to the future dissertation. Already published or prepared articles can be attached as an appendix. This document must be submitted to the committee chair at least 14 days before the exam.
- **Exam Procedure:** The exam usually begins with a very brief (less than 3 minutes) outline of the student's doctoral project, highlighting the main ideas, hypotheses to be tested, and approaches used to test these hypotheses. In the first part of the exam, the committee primarily discusses the submitted analysis of the work; in the second part, the committee usually asks broader questions to allow the candidate to demonstrate their knowledge of the field.
- **Re-examination:** If the student fails the exam, the examination committee usually recommends study areas and literature to focus on. The repeated exam covers the same subjects as the original exam. A new version of the analysis must also be submitted. The student must register for the re-examination no earlier than six months and no later than one year after the unsuccessful attempt. Otherwise, the student cannot be evaluated in category A (fulfils the study plan).

## Form of the Dissertation

- **Dissertation Format:** The form of the dissertation is governed by the Rules of Study at the Faculty of Science, Charles University.
- **Expected Format:** The expected form of the dissertation in the field of Botany is an English-written collection of at least three thematically related texts in the format of scientific articles, accompanied by a broader unifying introduction to the topic. At least one of these articles must be first-authored, and at least one must be published or accepted for publication in an internationally recognized scientific journal (usually understood as a journal with an impact factor defined by ISI; journals with an IF in the 3rd-4th quartile of the relevant category defined by ISI are suitable only in well-justified cases). Acceptance for publication must be credibly documented. The introduction must be a substantial part of the work (the length of an average article) and must thoroughly present the framework and context of the topic, the objectives of the work, and place the individual articles in the overall context. The work must also include a broader summary of the significance of the results of the individual articles for the discipline, either as the final part of the introduction or in a separate conclusion. All mentioned parts (introduction, published/accepted articles, unpublished texts in article format, conclusion) must be part of the dissertation text itself (not as an appendix). In justified cases, the dissertation may take the form of a comprehensive scientific monograph, which must be first-authored and accepted for publication.
- **Formatting:** All parts of the dissertation must be formatted in the same way, except for already published or accepted articles. For these, the use of PDF files with journal copyright is permissible, but only with the publisher's permission.
- **Co-authored Publications:** If the dissertation includes publications with multiple authors, a statement from the supervisor (or corresponding author of the individual publications) must be attached, specifying the student's contribution to the results. The student's contribution to the individual multi-author publications must be substantial – i.e., they must significantly contribute to at least two of the following activities: i) study design, ii) data collection, iii) data analysis and interpretation, and iv) writing.
- **Submission of Manuscripts:** When submitting a dissertation containing unpublished manuscripts for defence, it is advisable to request an extension of the publication embargo period.

## Defence of the Dissertation

- The entire process between the submission of the dissertation and the defence is managed by the chair of the defence committee, who is appointed by the dean on the recommendation of the Board, along with the entire committee.
- It is highly recommended that the student sends the dissertation to the chair of the Board before the formal submission. The chair will forward it to the designated chair of the committee, who will assess the format of the dissertation. If it meets the expected format defined above, the student will be invited to submit the dissertation electronically in the SIS.
- The dissertation is reviewed by two opponents, usually experts in the candidate's specific field, at least one of whom is from abroad. The opponents are proposed by the

chair of the committee, usually in consultation with the supervisor, and approved by the defence committee.

- The defence is conducted in English and is public. During the defence, the candidate presents the theses of their work in a 20-30 minute presentation. This is followed by the opponents' assessment of the work and the candidate's responses to the opponents' questions (not all of which are included in the opponents' reports; opponents are encouraged to withhold some questions from their reports). The final part is a general discussion involving committee members, opponents, and the audience.
- The outcome of the defence is decided by a vote of the defence committee.
- For exceptionally high-quality work, the committee may propose the "cum laude" distinction. This distinction can be awarded to dissertations defended no later than the fifth year of study and based on at least three articles published (or accepted for publication) in journals with an IF in the 1st-2nd quartile of the relevant category.

### **Completion of Studies**

- The maximum duration of study in the doctoral program is determined by the relevant regulations.
- The official completion date of the doctoral study is the day the dissertation is defended. According to the Code of Study and Examination, both the state doctoral exam and the dissertation defence must be completed within the specified number of years from enrolment (it is not sufficient to merely submit the dissertation).
- Failure to meet this requirement leads to termination of the study for not fulfilling the requirements of the study program. The Board requires that the dissertation be submitted for defence no later than four months before the maximum duration of study expires.
- If a doctoral student decides to leave the study for any reason, they must notify the Student Affairs Division of the Faculty of Science, Charles University.

These guidelines come into effect on January 1, 2025.