

Department of Physics (D-PHYS) Detailed stipulations regarding the doctorate

of 27 January 2022

This English translation serves information purposes only and has no legal force. The original German version is the legally binding document.

The ETH Zurich Executive Board,

at the request of the Department of Physics at ETH Zurich¹ and pursuant to Art. 52 of the ETH Zurich Ordinance on the Doctorate of 23 November 2021²,

hereby decrees the following detailed stipulations regarding the doctorate:

Section 1: General

Art. 1 Scope and purpose

¹ These detailed stipulations set out the department-specific details governing the doctorate at the ETH Zurich Department of Physics (D-PHYS). They are based on the basic provisions of the ETH Zurich Ordinance on the Doctorate of 23 November 2021³ and on the Rector's Implementation Provisions for the ETH Zurich Ordinance on the Doctorate of 23 November 2021⁴.

² The measures described below will contribute to ensuring the quality, reliability and efficiency of conducting and processing doctorates at D-PHYS. Doctoral students and doctoral thesis supervisors (supervisors) are responsible for the quality of a doctoral thesis. The project topic is also decisive.

Art. 2 Doctoral committee

¹ The doctoral committee regulates doctoral matters at D-PHYS.

² The composition and meeting rules of the doctoral committee are described in the D-PHYS bylaws of 17 December 2021 (GO D-PHYS)⁵.

¹ Resolution of the D-PHYS Department Conference of 17 December 2021 (approval of the detailed stipulations)

² SR **414.133.1**

³ SR **414.133.1**

⁴ RSETHZ **340.311**

⁵ RSETHZ **320.25**

Section 2: Admission to the doctorate

Art. 3 Provisional admission

¹ The Doctoral Administration (Academic Services) conducts a formal assessment of the overall performance of the respective applicant. If the result of this assessment is clearly sufficient, application for admission proceeds without extended doctoral studies and without further review of the dossier.

² For applicants whose overall performance does not correspond to that of a Master's degree at ETH Zurich, the doctoral committee decides on whether to request extended doctoral studies and makes a recommendation on their scope in terms of ECTS credits. In coming to its decision the committee is supported by the supervisor.

Art. 4 Doctoral thesis outside the ETH domain

In requests for doctoral projects conducted outside the ETH domain, the outline of the planned doctoral thesis must also include details on the extent of doctoral students' participation in D-PHYS teaching. The details must accord with the respective current D-PHYS guidelines.⁶

Art. 5 Doctoral plan

¹ Doctoral students draw up a doctoral plan using the template provided by D-PHYS.

² Doctoral students send the doctoral plan in electronic form to the members of the aptitude committee and to the D-PHYS Doctoral Administration two weeks before the aptitude colloquium.

Art. 6 Aptitude committee

¹ The aptitude committee is normally chaired by a member of the doctoral committee.

² The aptitude committee may be enlarged at the request of the doctoral thesis supervisor to the doctoral committee; the request must be submitted at least six weeks before the aptitude colloquium.

Art. 7 Aptitude colloquium

¹ The D-PHYS Doctoral Administration appoints chairpersons and sets the dates for aptitude colloquia on behalf of the doctoral committee. It provides a sufficient number of dates spread throughout the year. Doctoral students reserve a suitable date for the aptitude colloquium and clarify the availability of the members of the aptitude committee. Four weeks before the planned aptitude colloquium, doctoral students inform the D-PHYS Doctoral Administration of its desired date and mode. The D-PHYS Doctoral Administration issues the invitations to the aptitude committee members.

⁶ Guideline «Teaching assistants at D-PHYS» approved by the Department Conference on 30.09.2022

² Four weeks before the aptitude colloquium, doctoral students, with the consent of the supervisor, communicate details regarding the second advisor (name, email and business address) to the D-PHYS Doctoral Administration.

³ The aptitude colloquium is not public. It consists of a 20 - minute presentation by the doctoral student followed by a 30 - minute discussion. In addition to questions about the doctoral plan, general questions about academic background may be asked.

⁴ The aptitude committee's evaluation is recorded in writing and forwarded to the doctoral committee, the D-PHYS Doctoral Administration and the doctoral student together with the doctoral plan.

⁵ At the request of the supervisor or the doctoral student to the chairperson, a maximum of two additional persons with a connection to the research project may in exceptional cases attend the aptitude colloquium as guests. It is up to the chairperson whether guests may ask questions and/or attend the aptitude committee meeting without voting rights.

Section 3: Supervision

Art. 8 Supervision of the doctorate

Adjunct D-PHYS professors are entitled to supervise doctoral theses.

Art. 9 Progress report

Doctoral students prepare the progress report according to the template provided by D-PHYS.

Art. 10 Confidential discussion about the doctorate process

¹ 1.5 to 2 years after the start of the doctorate, the doctoral student will be invited to a confidential discussion with the contact person for the doctorate at D-PHYS.

² Doctoral students may initiate additional discussions if necessary.

³ The content of the discussions is confidential and minutes can only be taken with the doctoral student's consent. Any minutes may only be passed on with the doctoral student's consent.

Section 4: Doctoral studies

Art. 11 Regular doctoral studies

¹ In accordance with item 10.1 of the Rector's Implementation Provisions for the ETH Zurich Ordinance on the Doctorate, at least 12 ECTS credits must be acquired in the framework of regular doctoral studies. At least 2 credits must be earned in each of the three categories described in the Provisions.

² Credits are normally only awarded for achievements within the university environment or at scientific events, such as the following:

- a. Completion of courses in the category «Doctorate, Department of Physics» (see the Course Catalogue (VVZ))
- b. Completion of courses in ETH Zurich Master's degree and MAS programmes
- c. Completion of courses from the ETH Zurich Teaching Diploma in Physics programme, or other didactic courses
- d. Completion of courses from the D-GESS «Science in Perspective» programme
- e. Completion of language courses of the Language Center of UZH and ETH Zurich
- f. Completion of courses in University of Zurich Master's degree programmes in Physics and Mathematics
- g. Completion of other courses (here the chairperson of the doctoral committee decides on creditability at the request of the supervisor)
- h. Committee work. Here a maximum of 4 credits for committee work and chairing are credited

Art. 12 Extended doctoral studies

¹ Extended doctoral studies comprise at least 8 credits.

² In consultation with the doctoral student, the supervisor lists the required academic achievements in the doctoral plan.

Section 5: Doctoral thesis and doctoral examination

Art. 13 Declaration of personal contribution

Doctoral students must declare their own work clearly in all chapters of the doctoral thesis. It is recommended that this declaration be summarised in a separate section. Other contributing persons or groups should be named and their contribution to the doctoral thesis described.

Art. 14 Cumulative theses

Cumulative doctoral theses (consisting mostly of direct reproductions of already published articles) are generally not permitted at D-PHYS.

Art. 15 Examination committee

¹ The examination committee is normally chaired by a member of the doctoral committee.

² The doctoral committee, with the agreement of the supervisor, appoints the co-examiners. Doctoral students communicate the co-examiners' details (names, email and business addresses) to the D-PHYS Doctoral Administration no later than ten weeks before the doctoral examination.

Art. 16 Procedure prior to the doctoral examination

¹ Doctoral students must have the acquisition of the credits required in regular and (if applicable) extended doctoral studies confirmed by the D-PHYS Doctoral Administration at least 10 weeks before the doctoral examination. Any pending credits must be earned and verified before the student registers for the doctoral examination.

² Doctoral students request a chairperson for the examination committee and organise a suitable examination date. They communicate details of the chairperson and the time and mode of the doctoral examination to the D-PHYS Doctoral Administration at least four weeks before the examination date. The D-PHYS Doctoral Administration normally organises the room and issues invitations to the doctoral examination.

³ Doctoral students send an examination copy of the doctoral thesis, usually in electronic form, to the members of the examination committee at least four weeks before the doctoral examination. The members of the examination committee may ask doctoral students for a printed version.

⁴ Each examiner and each co-examiner submits an experts' report on the doctoral thesis to the D-PHYS Doctoral Administration electronically no later than five working days before the doctoral examination.

⁵ The supervisor may propose that an exceptional doctoral thesis be considered for the ETH Medal. This proposal must be communicated to the D-PHYS Doctoral Administration at least four weeks before the doctoral examination. The D-PHYS Doctoral Administration organises committee member participation. Further procedure is set out in the D-PHYS bylaws (GO D-PHYS).

Art. 17 Doctoral examination and subsequent meeting of the examination committee

¹ The doctoral examination consists of a presentation by the doctoral student on the doctoral thesis and a subsequent oral discussion.

- a. The presentation lasts 30 minutes and is open to the public. The chairperson may allow questions from the audience.
- b. The subsequent discussion lasts at least 60 minutes and is not open to the public, except for additional persons mentioned in paragraph 2. The chairperson leads the discussion.

² The following additional persons may take part in the discussion mentioned in para. 1 (b):

- a. D-PHYS professors (the chairperson decides on their right to ask questions)
- b. At the request of the supervisor to the chair, a maximum of two additional persons with a connection to the doctorate (the chairperson decides on their right to ask questions)
- c. Members of the awards committee if this has been convened (general right to ask questions)

³ The persons mentioned in para. 2 (b, c) may participate in the subsequent meeting of the examination committee, but without the right to assess.

Section 6: Final provisions

Art. 18 Transitional provisions

Doctoral students who are completing regular doctoral studies under the previous law in accordance with Art. 65 of the ETH Zurich Ordinance on the Doctorate are subject to the provisions set out in Appendix 1.

Art. 19 Entry into force

These detailed stipulations enter into force retroactively on 1 January 2022. They replace the detailed stipulations of D-PHYS of 20 December 2009 (version dated 2 June 2017).

Application of salary rates

Salary rates for doctoral students are governed by the stipulations set out in Art. 8, Para. 3 of the Ordinance Governing Scientific Employees of ETH Zurich⁷, in association with Section 1 (3) of the Directives for Doctoral Students Employed at ETH Zurich⁸.

D-PHYS endeavours to pay doctoral students uniformly and to distribute their teaching activities equally in accordance with the respective current D-PHYS guidelines⁹. Doctoral students are normally categorised as follows¹⁰:

- a. 1st year: Salary rate 2 or 3 (3 or 4 in case of parenthood)
- b. 2nd year onwards: Salary rate 3 or 4 (4 or 5 in case of parenthood)

Exceptional workloads are reflected in salary rates through appropriate categorisation. The supervisor is responsible for the categorisation.

⁷ SR 172.220.113.11

⁸ RSETHZ 622

⁹ «Teaching assistants at D-PHYS» approved by the Department Conference on 30 September 2022

¹⁰ Resolution of the D-PHYS Professors' Conference of 12 December 2014

Appendix 1 – Transitional provisions for doctoral studies

The following provisions apply to doctoral students who, in accordance with DV Art. 65, complete their regular doctoral studies under the previous regulations (in accordance with the detailed stipulations of D-PHYS for the individual doctoral studies in physics dated 2inter of 2 June 2017):

1.1 Introduction

These transitional provisions regulate the acquisition of credit points (CP) in regular doctoral studies according to the previous regulations.

Evidence of at least 12 CP is required, of which 8 CP can be acquired within and a minimum of 4 CP must be acquired outside the research area of the doctoral thesis. The D-PHYS Doctoral Administration or the Chair of the Doctoral Committee certify the acquired CP upon application for the doctoral examination.

1.2 Creditable courses

Doctoral students in physics may take the following courses:

- a. All courses from the Master's Programme in Physics (including the additional training for the teaching qualification in Physics) which are listed in the course catalogue;
- b. All courses from the Master's programmes in Mathematics and Computational Sciences;
- c. Courses from the Master's and MAS programmes at ETH Zurich;
- d. D-GESS "Science in Perspective" lectures;
- e. Lectures from the Master's programmes in Physics and Mathematics at the University of Zurich;
- f. Other suitable courses may also be taken after consultation with the Supervisor and the Chair of the Doctoral Committee.

1.3 Awarding of Credit Points

One CP corresponds to a study effort of 25-30 working hours. The awarding of CP is linked to a verifiable personal achievement in accordance with AB items 10.1-3. Qualification exams cannot be credited as CP for the regular doctoral studies.

The fulfilment of the personal achievement in courses according to Appendix 1.2 is to be verified and certified by the responsible lecturer. The doctoral student enrolls for the selected lectures at ETH Zurich via the "myStudies" portal. The lecturers usually confirm the students' personal achievement in courses via "eDoz", and the doctoral students can view this confirmation in "myStudies". To award CP, D-PHYS considers regular participation in the course together with the completion of exercises and, if required, the presentation of learning content, participation in discussions, as well as, in case of external courses, summer schools and conferences, an oral or written report to Supervisor, and possibly the group, as sufficient personal achievement.

It must be ensured that the 8 CP from the subject area of the doctoral thesis come from at least two courses – regardless of whether the purely numerical minimum of 8 CP has already been achieved with one course. Furthermore, a maximum of 8 CP can be awarded for the additional training for the teaching qualification in Physics.

Other personal achievements in accordance with AB items 10.1-3 are verified and confirmed by the Supervisor (1 CP corresponds to an effort of 25-30 working hours). The Supervisor certifies the personal achievement on the course confirmation form for doctoral students.

Credit points are usually awarded as follows:

- a. Courses according to Appendix 1.2 with regular performance record: ECTS points according to the course catalogue;
- b. Courses according to Appendix 1.2 with a performance record other than an examination: 1 CP per hour per week of the lecture and exercises (V+U), up to a maximum of ECTS points according to the course catalogue¹¹;
- c. Project studies (special, smaller work outside the research area of the doctoral thesis after consultation with the Supervisor): 1 CP;
- d. Participation in events such as a summer school, lecture or poster at workshops and conferences (1-3 weeks duration): 1-4 CP;
- e. In addition, participation in didactic training courses offered by D-PHYS: 1-4 CP;
- f. Other personal achievements upon individual agreement: e.g. further education courses in Computer Sciences, language courses, courses on experimental and theoretical methods, etc., participation in university or expert committees (at the suggestion of the Supervisor and with the consent of the Chair of the Doctoral Committee).

The Supervisor decides on the delimitation of the minimum of 4 CP that are to be acquired by the doctoral students outside of the research area of their doctoral thesis. In case of disagreement between the doctoral student and the Supervisor, the Chair of the Doctoral Committee makes the final decision.

The CP that can be credited to the doctoral studies do not have to be identical to the ECTS credit points in the course catalogue.

1.4 Exceptions

The Doctoral Committee decides on exceptions to these transitional provisions.

¹¹ Added by resolution of the doctoral committee on 9 June 2021, in force since 10 June 2021