

University of Pécs, Faculty of Science
Regulations of the Doctoral School of Physics

08 May 2023

I. General Provisions

§1. These Regulations have been prepared on the basis of Act CCIV of 2011 on National Higher Education; Government Decree 387/2012 (XII.19.) on doctoral schools, the order of doctoral procedures and habilitation; Act CCIV of 2015; and the resolutions of the Hungarian Accreditation Committee (MAB) concerning doctoral training and the award of the doctoral degree.

§2. (1) The Doctoral School of Physics of the University of Pécs (hereinafter: PTE), Faculty of Science (hereinafter: TTK) (hereinafter: FizDI) conducts MAB-accredited doctoral training in the field of physics within the training area of the inanimate natural sciences.

(2) Within its organized framework, or on the basis of individual preparation, it proposes the conferral of the doctoral (PhD) degree—the highest university qualification—in all areas of theoretical and experimental physics.

(3) In the field of physics, the Doctoral School holds:

- the right to provide doctoral training, which includes the rights to organize and supervise studies and research, to require reports, and to conduct examinations;
- the right to authorize the procedure for obtaining a degree following individual preparation;
- the right to make proposals for admission to doctoral training and for the conferral of the doctoral degree.

§3. The FizDI operates pursuant to the PTE Doctoral Regulations, which form Annex 13 to the Organizational and Operational Rules of the University of Pécs. Its proposals and opinions are submitted to the Faculty Doctoral and Habilitation Council of the Faculty of Science (hereinafter: TDHT).

II. Organization of the Doctoral School of Physics

§4.(1) The operation of the FizDI is based on the activity of the core members of the Doctoral School, its internal and external members, and invited members.

(2) Members of the FizDI may perform duties as program leaders, supervisors, and lecturers.

(3) The work of the FizDI is organized and directed by the Head of the Doctoral School and by the regularly convening body assisting their work, the Council of the Doctoral School.

§5.(1) Duties of the Head of FizDI:

- a) applies for accreditation of the Doctoral School;
- b) proposes the number of students to be admitted and its distribution by program;
- c) is responsible for the quality of the educational and scientific work of the Doctoral School;
- d) is responsible for internal administration, allocation of the budget, and management of budgetary funds;
- e) directs the work of the Council of the Doctoral School;
- f) represents FizDI in the Faculty Doctoral and Habilitation Committee of PTE TTK, in the University Doctoral Committee of PTE, and on other fora;
- g) oversees that the current data and documents of FizDI appear on the *doktori.hu* website;
- h) oversees that the Doctoral School's own website is kept up to date with the following information:

- current regulations;
 - syllabi for admission and comprehensive examinations;
 - syllabi of courses announced by the Doctoral School;
 - complete bibliography of publications produced by doctoral students within the framework of the Doctoral School;
 - dissertations defended in the Doctoral School and the corresponding thesis booklets.
- (2) The work of the Head is assisted by the Council of the Doctoral School.
- (3) The Head—while simultaneously informing the Council—may ask one of the participating instructors to carry out the administrative tasks of FizDI (secretary).

§6. Duties of the Program Leader:

- a) proposes the announcement of doctoral topics;
- b) ensures the infrastructure necessary for the students' studies and research;
- c) supervises the activity of supervisors, coordinates and approves the implementation of topics within the program;
- d) manages the program's budget.

§7. Duties of the Supervisor of a doctoral topic:

- a) proposes the student's individual study and research plan and is responsible for its quality and implementation;
- b) responsibly directs and supports the student's studies and research;
- c) supports the student's preparation for the degree procedure;
- d) assists the student in writing scientific publications and preparing the doctoral dissertation;
- e) supports the student in applying for international scholarships;
- f) assumes responsibility for submitting the completed doctoral dissertation.

III. The Council of the Doctoral School of Physics

§8.(1) The professional activity of the Doctoral School is directed by its Head with the involvement of the Council of the Doctoral School.

(2) Composition of the Council of the Doctoral School of Physics (hereinafter: **FizDIT**):

- **Chair:** the Head of the Doctoral School
 - **Vice-Chair:** the Deputy Head of the Doctoral School
 - **Members:** (a) program leaders; (b) full professors employed by PTE who participate in the Doctoral School; (c) deputy program leaders (with the right to speak only; in the absence of the program leader they may substitute with voting rights).
 - **Doctoral student representative** with the right to speak, delegated by scholarship doctoral students.
 - **Secretary** (with the right to speak), appointed by the Chair.
- (3) The Head of the Institute of Physics is a permanent invitee with the right to speak.

§9. FizDIT is responsible for drafting the internal regulations and requirements of the School in harmony with the University and discipline-specific doctoral regulations.

§10. Powers of FizDIT:

- (1) adopts, amends, and improves the Regulations of the Doctoral School;
- (2) makes proposals on:
 - a) changes to the School's personnel, the person of the Head, accreditation of new lecturers and programs, and the appointment of supervisors;
 - b) admission of PhD students, initiation of procedures for obtaining the PhD degree, issuance of the certificate of completion (absolutorium), termination of student status;
 - c) the composition of admission committees;
 - d) possible reductions of the tuition/training contribution;

- e) major examination subjects, the composition of examination and defence committees, and the appointment of pre-opponents and opponents;
- (3) gives opinions on applications for the recognition (nostrification) of degrees obtained abroad;
- (4) determines:
 - a) the minimum requirements for admission;
 - b) specific requirements regarding knowledge of foreign languages;
 - c) publication requirements for doctoral students;
 - d) formal requirements for the dissertation and theses;
- (6) decides on the announcement of teaching activities and courses.

IV. Rules of Procedure of the Council

- §11.**(1) FizDIT meets as required by current tasks, but at least once per semester.
- (2) Meetings may be initiated by the TDHT, the Chair of FizDIT, or its members.
- (3) Meetings are convened by the Chair. The invitation, together with written submissions, must be sent one week before the meeting.
- (4) The meeting has a quorum if 51% of voting members are present. Decisions are generally made by open vote and simple majority. A secret ballot must be ordered at the request of any member.
- (5) Minutes are taken of the meetings. The minutes are prepared by the Secretary and certified by the Chair. The minutes are sent to the Chair of the TDHT and to the members of FizDIT. The Secretary also performs the other administrative duties of the Doctoral School.

§12. The appellate forum of the Council is the TDHT. Student records are kept by the Study Office of the Dean's Office of PTE TTK; the financial records of the Doctoral School are maintained by the financial officer delegated to the Faculty by the PTE Chancellery and by the Directorate for Finance of the Chancellery.

V. Amount of the Training Contribution and Principles of Reduction

- §13.**(1) Students participating in the PhD programme pay tuition. The amount of tuition, as well as cases of partial or full exemption, are determined by the PTE Regulations on Fees and Benefits (TJSz).
- (2) For fee-paying students, the Head of FizDI may, upon the proposal of the program leader and with the consent of FizDIT, reduce the amount of tuition. The extent of the reduction shall be determined taking into account the student's social situation and the specific professional interests of the programme.

VI. Admission Procedure and Minimum Requirements of FizDI

§14. Preconditions for application

(1) Applicants must have:

- a Master's (MSc) degree in natural sciences, engineering, or medicine (or a pre-Bologna university degree);
- a diploma grade point average of at least 3.00 (applicable to diplomas obtained in Hungary from 2001).

(2) Applications are submitted via the University's website: <https://pte.hu/hu/jelentkezes-doktori-kepzesre>. The requested data must be provided and the following documents uploaded in PDF:

1. Curriculum vitae;
2. Research plan;
3. Two letters of recommendation;
4. Copy of university diploma;
5. Transcript / proof of academic results;

6. Evidence of prior professional achievements;
7. Copy of document certifying language proficiency;
8. Proof of payment of the application fee;
9. Employer's consent (where applicable).

It is very important that, for the application to be accepted, after completing the electronic form the generated PDF must be printed, signed, and sent—by post or electronically—to the administrator of the relevant Doctoral School.

§15. The entrance examination

Applicants must take a compulsory oral entrance examination—either in person or online—before the Admission Committee. The entrance exam is comprehensive and professional in nature. The points awarded for the oral exam also assess the candidate's familiarity with the chosen research topic.

§16. The Admission Committee

The committee has at least three members: its chair is the Head of the Doctoral School or the Deputy Head; members include the relevant program leader and a founding member of the Doctoral School. Minutes are taken of the examination. Organizing and administering the exam and preparing the minutes are the tasks of the Secretary.

§17. Evaluation of applicants

a) Oral examination: maximum **15 points**.

b) Value of the Master's degree grade (GPA):

- 3.01–3.25 → 1 point
- 3.26–3.50 → 2 points
- 3.51–3.75 → 3 points
- 3.76–4.00 → 4 points
- 4.01–4.25 → 5 points
- 4.26–4.50 → 6 points
- 4.51–4.75 → 7 points
- 4.76–5.00 → 8 points

c) Scientific activity:

- Student research activity: participation in TDK (Departmental Student Research Conference) 1 point; participation in OTDK (National Student Research Conference) 2 points; 2nd–3rd place at OTDK 4 points; 1st place at OTDK 5 points.
- *Pro Scientia* medal: 10 points.
- Publication activity:
 - poster at an international conference: 2 points
 - talk at an international conference: 4 points
 - paper in a journal with impact factor: 6 points
- If scientific performance warrants it (e.g., publication in a high-impact journal), up to 5 additional points may be awarded for scientific activity.

d) Advanced (C level) or intermediate (C level) state-recognized language exam: 3 + 3 points.

§18. (1) Minimum score required for admission: 18 points.

(2) Based on the opinion of the Admission Committee, FizDIT decides on the admission results. The Chair submits the justified proposals to the TDHT. Within two weeks of the examination, FizDI informs the applicants of the results.

VII. Individual Candidates

§19. (1) For individual candidates, the doctoral degree procedure begins—upon application—with registration for the comprehensive examination and its successful completion (Government Decree 387/2012, §12).

(2) Acceptance of the application requires compatibility with the discipline and fulfilment of the publication and language requirements of the doctoral degree.

(3) Upon admission, FizDI recognizes the minimum credits required for admission to the comprehensive examination; upon request, further credits may be recognized based on previously acquired knowledge and competencies.

(4) FizDI appoints a consultant for individual candidates.

VIII. Rules for Obtaining the Required Credits in the Doctoral School of Physics

§20. (1) The following framework applies to the acquisition of credits:

a) the duration of the doctoral training is 8 semesters;

b) the training takes place in two stages: (i) a first, “training and research” stage lasting 4 semesters; (ii) a second, “research and dissertation” stage, also 4 semesters. The dissertation must be submitted within 3 academic years after the comprehensive examination (within 4 academic years for those covered by Government Decree 217/2021 (IV.30.));

c) the student may be in passive status for at most two semesters in each stage (four semesters for those under Government Decree 217/2021 (IV.30.));

d) the total number of credits to be obtained during the programme is 240 (120 + 120).

(2) Credits may be earned through various activities: participation in courses (“study credits”), teaching, research work, literature review, publication of research results, and a written progress report summarizing the student’s activities.

(3) Rules for credits obtainable in each activity:

i) Semesters 1–4:

- **Study credits:** 1 contact hour per week for one semester equals 2 credits. Based on the supervisor’s recommendation, 25–40% of the credits must be obtained through courses: minimum 30, maximum 52 credits. With the supervisor’s recommendation and the program leader’s consent, credits may also be earned by taking courses offered in other programs or at other universities. Completion and positive assessment are certified by the course instructor.
- **Teaching credits:** 1 contact hour per week for one semester equals 2 credits. Through teaching, 13–27% of the credits must be obtained: minimum 8, maximum 32 credits. Teaching activity is certified—without grading—by the Institute of Physics’ officer responsible for teaching.
- **Credits for literature review:** 20% of the credits, i.e. 24 credits, may be obtained in the first stage. The supervisor designates the literature to be reviewed and checks the student’s performance each semester through a report. Each semester’s report may be awarded 0, 2, 4, or 6 credits.
- **Research credits:** Through research work, 5–27% of the credits: minimum 6, maximum 32 credits. For independent research beyond literature review, the supervisor may propose 0, 2, 4, 6, or 8 credits per semester.
- **Written report after the first two semesters:** a report of at most 15 pages summarizing progress may earn 3, 6, 9, or 12 credits on the supervisor’s proposal.

ii) Semesters 5–8:

- **Teaching credits:** 1 contact hour per week for one semester equals 2 credits. Through teaching, at most 20% of the credits (24 credits) may be obtained. Certification as above.
- **Credits for literature review (semesters 5–6):** 10%, i.e. 12 credits, may be earned in this stage. The supervisor designates the literature; performance is checked each semester via a report and graded on a two-level scale. Each semester's report may be awarded 0, 2, 4, or 6 credits.
- **Research credits (semesters 5–6):** 13% (16 credits) may be earned through research. For independent research beyond literature review, the supervisor may propose 0, 2, 4, 6, or 8 credits per semester.
- **Publication credits:** For a paper published in an international peer-reviewed journal, up to 30 credits; for a talk at an international conference, up to 20; for a poster, up to 15; for other publications, up to 10 credits. Credits may be claimed in any semester following acceptance of the publication. Certification is carried out each semester by the program leader on the supervisor's proposal. In this way, 60–80% of the credits must be obtained: minimum 72, maximum 96 credits.

IX. Degree Procedure and Its Conditions

§21. The conditions for initiating the degree procedure are the acquisition of the **absolutorium** certifying completion of study requirements and the successful completion of the comprehensive examination. The absolutorium is issued by the Study Office.

§22. Language requirement for the PhD degree: a C-type, at least intermediate-level state-recognized (or equivalent) English language exam (see also Section XIII).

§23. (1) The candidate must have at least two publications in refereed journals with an impact factor, the results of which are used in the dissertation. The sum of the impact factors of these papers must be at least 2; furthermore, where the discipline allows, the candidate must be first author of at least one of these publications.

(2) The papers may have co-authors, including the supervisor. If two doctoral students are co-authors, the supervisor must declare to what extent the results used in the dissertation reflect the contribution of the candidate concerned.

§24. The comprehensive examination

(1) Conditions for admission to the comprehensive exam:

- at least 120 credits (except for individual candidates, whose student status is established by registering for and being accepted to take the comprehensive exam);
 - prior submission of a short report (maximum 16 pages) on the first four semesters.
- (2) At registration, the supervisor must be given the opportunity to provide a prior written assessment of the candidate.
- (3) The comprehensive exam is public and is taken before a three-member committee, at least one member of which is not employed by PTE. The Chair must be a university professor, habilitated associate professor, habilitated college professor, Professor Emeritus, or a teacher/researcher holding the title Doctor of the Hungarian Academy of Sciences (MTA), employed by PTE. All members must hold a scientific degree. The supervisor may not be a member.
- (4) The exam has two main parts: a theoretical part assessing theoretical preparedness, and a research part reporting on scientific progress. In the theoretical part the candidate is examined in one major and one minor subject. In the research part the candidate gives a presentation on their research.
- (5) In a closed session the committee evaluates the theoretical and research parts separately.

Minutes are taken, including a written evaluation.

(6) When registering for the theoretical part, the student selects the subjects with the supervisor's approval. Subjects and examiners are approved by FizDIT.

(7) In the theoretical part, the committee awards a grade of pass or fail for each subject. If the candidate fails any subject, a resit in that subject may be taken on the date set for resits within the same exam period.

(8) Expectations for the research part:

- Identify the research areas and open questions where results have been achieved and are aimed for; provide an overview of the current state of the field.
- Summarize the results obtained so far.
- Provide a two-year research and publication plan.
- Submit in advance to the committee copies of journal/conference papers already submitted for publication (accepted or under review).

(9) The research part cannot be repeated if failed; student status is terminated.

(10) The comprehensive exam is graded on a two-level scale: pass / fail.

§25. Defence of the doctoral dissertation

(1) The candidate may apply to defend the dissertation within three academic years after the comprehensive exam (four for those under Government Decree 217/2021 (IV.30.)). To schedule the public defence, the documents listed in Annex 1 to the "Materials to be submitted in doctoral and habilitation procedures" of the TDHT must be submitted.

(2) Prior to official submission, the dissertation must be discussed at an internal pre-opponent review. Under the supervision of FizDIT, the relevant program organizes this. Two reviewers must be invited, including at least one external expert not employed by PTE.

(3) The dissertation must be defended in a public debate before a defence committee. Scheduling of the defence is authorized by the TDHT upon the recommendation of the Head of FizDI. The subject, date, and venue must be published. The invitation must include the "theses"—a concise summary of the topic, methods, and new results—in a standard electronic format (pdf, rtf or ascii text). The invitation must be posted on the Doctoral School's website, on the "fizinfo" mailing list read by physicists, and on *doktori.hu*.

(4) The defence committee has five voting members: a chair, two reviewers, and two additional members. The chair may be a university professor, Professor Emeritus, or habilitated associate/college professor of FizDI in the relevant field. One reviewer and at least one additional member must be external experts. The supervisor may not be a member.

(5) The result of the defence is evaluated and graded according to the University Doctoral Regulations. Minutes are taken of the public debate.

X. Content Requirements for the Dissertation and the Theses

§26. (1) The dissertation must be written in Hungarian or English. A dissertation written in Hungarian (English) must include an English (Hungarian) summary.

(2) The dissertation must contain a concise review of prior knowledge relevant to the topic, the research objectives based on this, the methods used, a description and documentation of the candidate's original research results, a comparison of the new results with previously known data and views, a concise summary of the new results (theses), a full list of references, and a list of the candidate's own publications on the topic.

(3) The theses must indicate on which of the candidate's publications they are based.

(4) Procedure fees are determined by the University Doctoral Regulations.

(5) The thesis booklet is a brief extract of the dissertation presenting the subject, methods, and new results, listing the directly used literature and the candidate's publications in the field.

XI. Formal Requirements for the Dissertation and the Theses

§27. (1) Depending on its nature, the dissertation should be 40–100 pages in length; necessary appendices may be added. It must be prepared in A4 size, black hardbound, in printing quality, and submitted in three copies. The cover must show the candidate's name and the designation "Doktori disszertáció" or "PhD Thesis" in gold letters.

(2) The inner title page must show, in addition to the author's name and the title, the exact name of the Doctoral School and the program, the supervisor's name, the year of submission, and the University's coat of arms.

(3) The thesis booklet must be prepared in A5 size, stapled; its length is about 10 pages (this may be exceeded only by the bibliography and the list of the candidate's publications in the field). Its title page must contain the same data as the inner title page of the dissertation. The booklet must be prepared in both Hungarian and English, submitting five copies of each.

(4) For the dissertation use 1.5 line spacing and 12-point type; for the thesis booklet 1.5 line spacing and 11-point type. Otherwise, general typographic rules apply. The bibliography must follow the Physical Review style. Use of the LaTeX typesetting system is preferred.

(5) The dissertation and thesis booklet must also be submitted electronically: the dissertation in PDF, the thesis booklet in PDF and Word formats to the Doctoral School of Physics.

XII. Economic and Financial Regulations

§28. The Doctoral School manages its revenues **independently**. The purpose of financial management is to ensure the conditions for doctoral training and to support students' work.

§29. Sources of FizDI revenues:

1. normative funding for state-scholarship students;
2. tuition / training contributions of self-financed students;
3. fees for degree procedures (see TJSz);
4. other revenues.

§30. Expenditures of FizDI:

1. material costs of doctoral students' research;
2. costs of invited lecturers;
3. costs of students' conference participation;
4. administrative costs of the Doctoral School.

§31. (1) The Head of FizDI is responsible for financial management and exercises authorization to expend funds. The allocation of available resources and the coverage of the above costs are decided in consultation with FizDIT.

(2) The Head reports annually to FizDIT on the School's finances.

(3) Internal financial records are kept by the Secretary with the technical assistance of the Finance Administrator of the Institute of Physics.

XIII. Foreign Language Requirements of FizDI

1. For PhD students starting their studies on or after 01 September 2023: obtaining the absolutorium requires presenting an intermediate-level state-recognized (or equivalent) English language certificate.
2. Among students who started before 01 September 2023, those who already hold a state-recognized (or equivalent) intermediate English language certificate may apply for exemption from the basic-level language requirement.

3. Candidates with certified dysgraphia or dyslexia may demonstrate the required English proficiency—instead of the certificate mentioned in point 1—by delivering their defence presentation in English.