

ED 576 –PHENIICS– Internal Regulations

Table of contents

PREAMBLE	3
I DOCTORAL SCHOOL PERIMETER	4
I.1 DOCTORAL SPECIALTIES	4
I.2 RESEARCH UNITS AND TEAMS	4
II GOVERNANCE OF THE DOCTORAL SCHOOL	4
II.1 THE DIRECTORATE	5
II.2 THE DOCTORAL SCHOOL COUNCIL	5
III PRINCIPLES, CRITERIA AND ADMISSION PROCEDURES FOR DOCTORAL STUDENTS	6
III.1 PRINCIPLES	6
III.2 CRITERIA	7
III.3 ADMISSION PROCEDURES	8
III.4 FUNDING FOR DOCTORAL STUDENTS	10
IV DOCTORAL PROGRAM	11
IV.1 REGISTRATION AND RE-REGISTRATION IN THE DOCTORATE	11
IV.2 DURATION OF THE DOCTORATE	12
IV.3 DOCTORAL STUDENT PROGRESS MONITORING.....	12
IV.4 TRAINING	13
GENERAL GUIDELINES - TRAINING POINTS	14
HOW POINTS FOR COMPLEMENTARY DOCTORAL TRAINING ARE DEDUCTED	15
IV.5 ANIMATION OF THE PHENIICS DOCTORAL SCHOOL	17
V DOCTORAL DEFENSE	18
VI CAREER PATHS FOR DOCTORAL GRADUATES	19
VII MEDIATION AND CONFLICT RESOLUTION	19

VIII SIGNATURES.....22

IX APPENDIX A - BOARD MEMBERSHIP22

X APPENDIX B - RESEARCH UNITS ASSOCIATED WITH THE DOCTORAL SCHOOL.....23

Texts of reference

- Decree of May 25, 2016, establishing the national framework for training and the procedures leading to the award of the national doctoral degree, in accordance with Article L612-7 of the Education Code.
- Decree of February 22, 2019, defining the competencies of doctoral graduates and including the doctorate in the National Register of Professional Certification.
- Decree No. 2019-1131 of November 5, 2019, creating the Université Paris-Saclay and approving its statutes.
- Order of July 27, 2020, accrediting the Université Paris-Saclay and the First-Cycle University School of Paris-Saclay (EU1CPS) for the issuance of national degrees.
- Order of August 26, 2022, amending the decree of May 25, 2016, establishing the national framework for training and the procedures leading to the award of the national doctoral degree.
- Internal regulations of the Université Paris-Saclay.
- Doctoral Charter of the Université Paris-Saclay.
- General internal regulations for the "Graduate Schools" of the Université Paris-Saclay.
- Internal regulations for doctoral studies at the Université Paris-Saclay.

Preamble

The functioning of the doctoral schools is regulated by the decree of August 26, 2022, amending the decree of May 25, 2016, establishing the national framework for training and the procedures leading to the award of the national diploma of Doctorate. For all general provisions relating to the role of the doctoral school and the organization of the doctorate, each doctoral student, supervisor, or thesis director is subject to the Thesis Charter and all general procedures of the Université Paris-Saclay, and in particular the internal regulations for doctoral studies at the Université Paris-Saclay. The doctoral schools may also specify or reinforce the rules or criteria defined in the above-mentioned reference texts. These rules and criteria are then explained in an internal regulation.

This internal regulation aims to establish the functioning and general organization of the Particles, Hadrons, Energy, and Nucleus: Instrumentation, Imaging, Cosmos, and Simulation (PHENIICS) doctoral school at the Université Paris-Saclay. It also aims to describe the practical implementation of these provisions and specify the policy of the PHENIICS doctoral school in the following areas: scientific scope, governance, admission of doctoral students, training and supervision of doctoral students, doctoral defense, and the career paths of the Ph.D. graduates.

Please note that in this document, the masculine gender is used in a gender-neutral sense,

with the intention of avoiding excessive linguistic repetition. It is not intended to exclude any gender or imply bias.

I Doctoral school perimeter

The PHENIICS doctoral school is the doctoral school of the Île-de-France region, with its disciplinary field centered around the "physics of the two infinities" (the infinitely large and the infinitely small) and the associated concepts and instruments. This field forms a continuum that extends from the most fundamental aspects to the most applied aspects, encompassing instrumental and digital sciences, as well as related domains such as cosmology, materials physics, and physics and chemistry for health. The doctoral school is supported by a unique network of research units covering these themes, located within the perimeter of the Université Paris-Saclay.

I.1 Doctoral specialties

ED PHENIICS awards theses in the following specialties:

- Nuclear Astrophysics
- Accelerator Physics
- Nuclear Physics
- Particle Physics
- Physics for Medical Imaging
- Physics for Instrumentation
- Physics and Chemistry for Health
- Astroparticle and Cosmology Sciences
- Nuclear Cycle Downstream, Radioprotection, and Radiochemistry Sciences
- Nuclear Energy Sciences
- Materials Science.

I.2 Research units and teams

The research units and teams within the scope of the PHENIICS ED are listed in the appendix.

II Governance of the doctoral school

ED PHENIICS is governed by a Directorate responsible for the recurrent operational aspects of the doctoral school, and a doctoral school council consisting of 21 members responsible for validating the rules and procedures related to the functioning of the PHENIICS doctoral school and setting the overall strategic directions.

II.1 The Directorate

Composition of the Directorate:

The Directorate is composed of four members: the director of the doctoral school and three deputy directors from the research teams within the PHENIICS doctoral school's scope. The composition of the Directorate should ensure a good thematic, geographical, and institutional representation of the research units within its scope. Specifically, among the four members of the Directorate, efforts will be made to include, if possible, at least:

- One member from CEA/IRFU
- One university professor from the Université Paris–Saclay
- One researcher or research director from CNRS.

Concept of “Referent” (or Referring Member):

Each member of the Directorate is assigned a "follow-up portfolio" that includes specific supervising staff and doctoral students from well-defined research units or teams. Within the Directorate, they are designated as referents or referring members for these supervising staff and doctoral students, serving as their main point of contact. The distribution of research teams and units into four portfolios is based on thematic and/or geographical or practical criteria.

The Directorate manages the daily operations of the doctoral school and refers to the PHENIICS doctoral school council for inspiration and validation of its strategic actions.

II.2 The Doctoral School Council

Composition of the Council:

The PHENIICS doctoral school council consists of 21 members, including individuals from academic and industrial backgrounds within the scientific domains covered by the PHENIICS doctoral school. The council ensures representation of the main research themes of PHENIICS doctoral students and the major research units within its scope. It also includes representatives from the bodies of engineers, technicians, and administrative staff from these laboratories. Among the 21 members, five are doctoral students of the doctoral school, elected by their peers.

Meeting Frequency:

The doctoral school council meets three times per year by default, and more frequently if necessary based on decisions to be made and actions to be addressed. If needed, the Directorate can refer specific and/or urgent questions to the council for an electronic vote.

Procedures for the election of doctoral student representatives:

Elections for the doctoral student representatives are held annually at the beginning of the calendar year. After announcing the procedures to all doctoral students enrolled as of January 1st and providing information about the role of the representatives, a two-week period is allotted for candidates to submit their applications to the Directorate of the doctoral school. An electronic vote is organized based on a secure anonymous survey, with no collection of the candidates' addresses by the voting system. The results are communicated within two days by the director of the doctoral school. The newly elected representatives are immediately installed in their roles.

The names of the members of the ED PHENIICS Council are listed in the appendix to the internal regulations.

III Principles, criteria and admission procedures for doctoral students

In application of article 3 of the decree of May 25, 2016 on doctoral training, ED PHENIICS implements a doctoral student admission policy based on explicit and public criteria, in accordance with the principles expressed in the Thesis Charter. The general admission procedure is set out in the Université Paris-Saclay's doctoral regulations. The criteria and procedures specific to ED PHENIICS are set out below.

III.1 Principles

The PHENIICS doctoral school implements an admission policy for doctoral candidates that aims to adhere to the following principles:

- Clear and public criteria and procedures that are communicated to research teams, potential doctoral candidates, and employers of doctoral students.
- Oversight of the policy by the doctoral school council, both in terms of approval of selection committees, modalities, and processes in advance, and reporting on admission operations afterward.
- Consideration of the supervisory capacities of research units or teams and personalized supervision of the doctoral student.
- Open recruitment that encourages student mobility, particularly at the international level.
- Possible thematic focus within the framework of the scientific policy of the Graduate School of Physics.
- Recruitment that encourages the development of new fields and takes into account the prospects for integration or career advancement for doctoral graduates.
- Recruitment that prioritizes academic excellence of candidates and their

alignment with the doctoral project.

III.2 Criteria

The admission of doctoral students to PHENIICS takes into account the following criteria:

- Performance in the master's degree and overall academic trajectory of the candidate.
- Research aptitude, which can be evaluated based on research internships. **Research experience is required.**
- Alignment between the candidate's education/background and the doctoral project.
- Originality and feasibility of the doctoral project within the research unit and its partnerships, and alignment with the scientific policy of the research unit, as assessed by the unit's management.
- Availability of a thesis supervisor and the supervisory team to provide scientific guidance throughout the doctoral project. The supervision requirements specified by ED PHENIICS are outlined below*.
- The candidate's professional aspirations and their coherence with the doctoral project. The full-time preparation of the doctorate should generally be completed within a maximum period of 36 months.

In addition, admission to ED PHENIICS is subject to two **conditions**:

- Obtaining a research-oriented Master's degree (Master 2) – exceptions to this condition can be granted on a case-by-case basis by the ED PHENIICS Directorate, after possible consultation with the ED Council.
- Securing dedicated funding for the duration of the doctoral program until the planned defense date (refer to Section III.4).

*Supervision Requirements:

To ensure the quality of doctoral supervision and to allow doctoral projects to be eligible for recruitment at ED PHENIICS, the following supervision ratios are required:

- In accordance with the Internal Regulations of Doctoral Studies at Université Paris-Saclay, a thesis supervisor (holding an HDR or equivalent qualification) may supervise a maximum of five theses. However, the overall effective supervision ratio at ED PHENIICS cannot exceed 300%.
- Co-direction of theses is reserved for special cases such as international cotutelle, where each university partner has a designated thesis supervisor. In all other cases, a thesis supervisory team consists of a thesis supervisor (thesis director) and, optionally, one or more co-advisors.

- A non-HDR co-advisor is authorized to co-supervise up to three theses with a supervision ratio lower or equal to 100%.
- In accordance with the Internal Regulations of Doctoral Studies at Université Paris-Saclay, the minimum supervision ratio for a thesis supervisor and each co-advisor is 25%.
- It should be noted that obtaining an ADR qualification (Authorization to supervise theses on a derogatory basis) is valid for one and only one doctoral student, and ADR holders are committed to completing their HDR no later than one year following the thesis defense. Failure to meet this commitment may result in the ED PHENIICS directorate refusing further co-supervision requests.

In exceptional cases, the ED PHENIICS Directorate may grant individual waivers to these rules after reviewing each situation and obtaining the opinion of the ED Council.

III.3 Admission procedures

a. Collection of Thesis Topics

Supervisors holding a Habilitation à Diriger des Recherches (HDR) or equivalent within the PHENIICS Doctoral School may submit a thesis project (or "doctoral project") through the ADUM interface, on an ongoing basis and subject to the constraints related to the doctoral project funding scheme and associated calls for proposals. Regardless of the type of doctoral contract, the source of funding, or the future employer, every doctoral project must include a scientific description of the project, allowing for the evaluation of the subject's positioning in relation to the state of the art and also assessing the originality of the topic.

Before the project is published on the ADUM website, it must be validated by the director of the relevant research unit or team and by the designated member within the PHENIICS Doctoral School's Directorate responsible for that unit or team.

b. Collection of Applications

In general, the collection of applications is done on an ongoing basis for all recruitments. However, a schedule is established for the recruitment of doctoral contracts at the Université Paris-Saclay within the framework of the PHENIICS Doctoral School competition (competition for access to ED contracts in the Graduate School of Physics' white program and certain "targeted" programs of the Graduate School of Physics).

c. Recruitment through the Doctoral School Competition

Each year, new doctoral candidates are admitted to the doctoral programs at the

Université Paris–Saclay through the doctoral school competitions. The PHENIICS Doctoral School organizes, in coordination with other doctoral schools of the Graduate School of Physics, an admission jury for doctoral studies. The provisional schedule for the PHENIICS Doctoral School competition is typically as follows:

- Late winter/early spring: Call for applications (topic+candidate)
- Mid–May: Closure of applications
- Late May: Preselection of candidates for auditions
- Early June: Auditions and ranking of preselected candidates by the Doctoral School
- Late June: Validation of decisions by the Doctoral School council.

The preselection stage is the responsibility of the future thesis supervisory team, potentially extended to the entire hosting team. They ensure that the two admission conditions defined in Section III.2 above are met and consult their ED representative in advance in cases where an exemption is necessary.

Each supervisor holding an HDR or equivalent within the PHENIICS Doctoral School can propose only one thesis topic for the doctoral school competition.

Each candidate can present only one topic for the doctoral school competition.

During the audition, the candidate briefly presents themselves, discusses their research experiences, their personal vision of the doctoral project, highlighting its uniqueness, and the scientific approach envisaged to address the topic. The candidate's ability to answer questions and their understanding of the doctoral project and the proposed approach are important elements for evaluating the applications.

At the end of the auditions, the jury establishes a ranking of candidates with a main list and a complementary list, which serves to fill any vacancies. A candidate who has been auditioned but not ranked in the white competition will not be admitted to the PHENIICS Doctoral School with the same doctoral project, even if they can benefit from alternative funding.

Composition of the Jury

The jury consists of the four members of the Directorate, possibly supplemented by members of the PHENIICS Doctoral School council whose expertise ensures homogeneous and comprehensive coverage of the disciplinary fields covered by the topics presented in the competition. The jury is chaired by the director of the PHENIICS Doctoral School. Each jury member commits to participating in the entire competition. The jury also includes a representative of the doctoral candidates, without deliberative vote, as an ethical guarantor and observer of fair treatment of the candidates. This role can be fulfilled by several doctoral candidates during the same competition.

d. Non-Competition Recruitments

In any other recruitment case not covered in the previous Section III.3.c, and in accordance with the internal regulations of the Doctorate at the Université Paris-Saclay, the audition is conducted by an admission committee.

Composition of the Admission Committee The admission committee consists of at least two members external to the supervisory team, including at least one member who is authorized to supervise research, and potentially one or more members of the supervisory team. In such cases, the number of members external to the supervisory team must be equal to or greater than the number of members from the supervisory team. A dedicated form, the "Minutes of the Admission Committee," prepared by the Maison du Doctorat, must be completed by the admission committee. It includes a detailed report on the candidate's ability to successfully carry out the doctoral project, their understanding of the innovative nature of their research topic, their ability to position it within the international scientific context, and their presentation skills. The admission committee forwards this report to the referent within the PHENIICS Doctoral School's Directorate responsible for the laboratory or assigned team, who then makes the final decision regarding admission to the PHENIICS Doctoral School.

Employing institutions within the scope of the PHENIICS Doctoral School (such as CNRS, IRSN, CEA, etc.) generally have an internal selection procedure involving a committee or jury. In order to avoid redundancies and multiple committees, the selection committee formed by the employing institution can fulfill the role of the aforementioned admission committee, ensuring that its composition is compatible with the rules of an admission committee and allowing the PHENIICS Doctoral School's Directorate to appoint its representative from among its members. In practice, the person in charge of recruitment contacts the referent within the PHENIICS Doctoral School's Directorate responsible for their research unit and provides them with the composition of the internal selection committee. The referent verifies the composition of the committee and designates a member within this committee responsible for drafting the minutes of the admission committee, providing them with the list of admission criteria and conditions to the PHENIICS Doctoral School mentioned in Section III.2 above.

III.4 Funding for doctoral students

Enrolment in ED PHENIICS is conditional on the **doctoral student's obtaining funding for the duration of the doctorate**, to ensure that the doctoral project runs smoothly.

Funding is compulsory up to the date set for the defense at the time of registration, including for registrations beyond the 3rd year of doctoral studies.

The minimum funding threshold for doctoral students is set by the Université Paris–Saclay's doctoral regulations. Whatever its nature, salary or scholarship, it can never be less than the minimum required to obtain a Passeport Talent.

In the case of a cotutelle thesis, periods spent in France by the doctoral student are subject to the above funding conditions. It is verified that the remuneration and working conditions outside the stay in France are compatible with the progress of the research work.

IV Doctoral program

IV.1 Registration and Re-registration in the Doctorate

The PHENIICS Doctoral School follows the registration procedure for the Doctorate at the Université Paris–Saclay. The entire admission procedures for the Doctorate at the Université Paris–Saclay are described on the dedicated webpage:

<https://www.universite-paris-saclay.fr/recherche/doctorat/inscriptions-et-reinscriptions-en-doctorat-3-etapes-principales>

Registrations for the first year of the doctoral program at the PHENIICS Doctoral School are done on an ongoing basis. Regardless of the recruitment method described in Sections II.3.c and d above, all new students meet with their referent for an initial welcome interview, after which the referent forwards the file to the Academic Services through the ADUM interface.

Re-registration in the doctoral program must be done at the beginning of each academic year. Unless duly justified reasons are provided to the PHENIICS Doctoral School's Directorate, all re-registrations in the doctoral program must be completed before October 31st of each academic year. The doctoral student initiates their re-registration request by convening their individual thesis follow-up committee (CSI) (see Section IV.3 below), which prepares a report and provides an opinion on the re-registration. This document is transmitted to the referent of the PHENIICS Doctoral School, and once in their possession, the doctoral student requests an individual meeting with the referent. During this meeting, the referent, relying on the CSI's report, discusses with the doctoral student all matters related to their doctoral project, academic content, environment, working conditions, desired developments, training plan, publications, and questions them about the progress of their professional project. The referent initiates a dialogue with all parties if any difficulties or issues arise from

the various documents or interviews (see Part VII). Re-registration in the doctoral program is only done after the possible difficulties have been resolved.

IV.2 Duration of the Doctorate

The preparation of the doctorate is generally carried out on a full-time basis over a period of 36 months, except in certain specific cases such as FTLV (lifelong learning) theses or "PhD format" cotutelle theses (4 years).

IV.3 Doctoral Student Progress Monitoring

Each doctoral student is accompanied by an individual follow-up committee (CSI) throughout the duration of their doctorate. The CSI is required to meet before registration in the second year and then before each subsequent re-registration until the completion of the doctorate. It is consulted for advice on any extension of the thesis beyond the initially planned duration, involving registration in the 4th year and beyond. The individual monitoring committee ensures the scientific monitoring and evaluation of the thesis progress, provides guidance, detects any dysfunction, and raises alerts.

Composition of the CSI

At the PHENIICS Doctoral School, the CSI is composed of a minimum of two members:

- One member who is a specialist in the discipline or related to the thesis topic, preferably external to the Université Paris-Saclay.
- One member who is a non-specialist and works in a research unit within the scope of the PHENIICS Doctoral School but not in the same research team as the doctoral student.

At least one of the CSI members must hold a Habilitation à Diriger des Recherches (HDR) or an equivalent qualification. The members of the committee do not participate in the supervision or guidance of the thesis. The members of the committee cannot be thesis examiners, but they can participate in the jury as examiners or chairpersons.

If applicable, the individual follow-up committee can be organized in consultation with the employer to share, if possible, the monitoring carried out by the employer and that carried out by the doctoral school. For example, if the host research unit implements doctoral monitoring such as mentoring or sponsorship, while respecting the composition rules mentioned above, it is recommended that one of the CSI members be part of this monitoring system. It may also be advantageous for the doctoral student's referent, as defined in Article 5 of Decree No. 2021-1233 of September 25, 2021, regarding private law doctoral contracts, to be a member of the

CSI.

The CSI is appointed by the PHENIICS Doctoral School's Directorate during the first months of the thesis, and in any case no later than one month before its first meeting for registration in the second year, based on the proposal of the thesis director, in consultation with the doctoral student. In the event of disagreement on this composition, the doctoral student informs their referent in the Directorate, who will decide accordingly. The composition of the CSI aims to ensure the independence and objectivity of the committee and to promote the voice of the doctoral student and, as far as possible, should remain constant throughout the duration of the thesis.

Organization of Meetings

It is the responsibility of the doctoral students to request and organize the meeting of their CSI when initiating the procedures for re-registration in the thesis or for requesting an extension of the thesis beyond the initially planned duration, involving registration in the 4th year and beyond. The meetings with the CSI are organized in three distinct stages: presentation of the progress of the work and discussions in the presence of the thesis director, an interview with the doctoral student without the thesis director, and an interview with the thesis director without the doctoral student. Doctoral students are required to provide a brief activity report using the model available on the PHENIICS Doctoral School's website:

<https://www.universite-paris-saclay.fr/ecoles-doctorales/particules-hadrons-energie-et-noyau-instrumentation-image-cosmos-et-simulation-pheniics#reinscriptionthese>

This report must be sent to the CSI members no later than 3 days before the CSI meeting.

It is strongly recommended that the CSI use the report template provided in the "CSI Handbook" for the preparation of their reports (this template can be obtained from the PHENIICS Doctoral School's Directorate or secretariat, or directly extracted from the CSI Handbook). The CSI Handbook is available online at the following address:

https://www.universite-paris-saclay.fr/sites/default/files/2022-11/livret_du_csi.docx

The CSI report is transmitted by the CSI to the referent of the PHENIICS Doctoral School as indicated in Section IV.1 above.

IV.4 Training

In addition to personalized research training acquired through research activities within the research unit, doctoral training also includes collective training (referred to as "complementary doctoral training" hereafter) aimed at:

- Reinforcing the scientific culture of doctoral students,
- Preparing them for their professional integration or career advancement in both the public and private sectors,
- Promoting international openness.

In addition to these main objectives, other objectives are also defined in national texts: every doctoral student must receive training on research ethics and scientific integrity, and doctoral schools must ensure that each student is aware of or trained in the challenges of open science and sustainable development.

Above all, these complementary doctoral activities and training must contribute to the development of future doctors' skills.

As a reminder, the competency framework for holders of a doctoral degree is defined by the decree of February 22, 2019. It consists of 6 competency blocks:

- Block 1: Design and development of a research and development approach, studies, and foresight.
- Block 2: Implementation of a research and development approach, studies, and foresight.
- Block 3: Valorization and transfer of research and development results, studies, and foresight.
- Block 4: International scientific and technological monitoring.
- Block 5: Training and dissemination of scientific and technical culture.
- Block 6: Supervision of teams dedicated to research and development activities, studies, and foresight.

A training plan specifies, for each doctoral student, the activities and complementary doctoral training planned during the preparation of the doctorate. This training plan is tailored, in consultation with the thesis director, to each individual situation. The training plan can be updated each year, based on needs, training opportunities, and what has already been acquired.

General Guidelines - Training Points

The doctoral training plan is represented in terms of "training credits (or points)" to facilitate the consideration of various types of activities (courses, training programs, participation in seminars, validation of experiences, associative engagement, etc.).

Within this framework, each doctoral student must acquire 25 training points (or more) during the course of their doctorate.

These 25 training points should cover the following 3 categories, with a minimum of 6 points and a maximum of 15 points for each of these 3 categories:

Category A (6–15 points):

- Trainings directly relevant to the research work,
- Trainings on research ethics and scientific integrity,
- Trainings directly relevant to thesis writing or the written or oral presentation of research work,
- Trainings on open science.

Category B (6–15 points):

- Trainings improving scientific culture,
- Trainings on sustainable development,
- Trainings promoting international openness.

Category C (6–15 points):

- Trainings aimed at preparing the professional future of doctoral students.

It should also be noted that training on research ethics and scientific integrity is mandatory and contributes to the total number of training credits acquired in Category A.

Trainings can be attended remotely when physical presence is not possible.

How points for complementary doctoral training are deducted

The table below lists the number of points (often with a maximum limit) that can be acquired through various trainings and activities during the thesis. It should be noted that this table is the result of discussions and exchanges with doctoral representatives on the PHENIICS Doctoral School Council:

Activity	Training points awarded
ED or Master2 courses	2 flat-rate points + 1 point/5h
Educational scientific events (summer schools, specialist workshops, etc.)	5h = 1 point (max 10 points/category)
Participation as a Doctoral Student Representative in various bodies (ED, lab, GS, university council, etc.)	1 one-year term = 2 points
Participation in juries, evaluations, etc. (e.g. ED competitions)	1 pt/day (max 3 points)

Organizing a scientific event	PHENIICS Fest = 5 points Other: 1 point/conference day + 1 flat-rate point if face-to-face
Supervision of trainees	3-point package (non-cumulative)
Teaching assignments, vacations	For teaching carried out: 5h ETD = 1 point (max 7 points)
	For teaching courses: 1 point/half-day (max 5 points)
For all doctoral students involved in scientific mediation, expertise or development work	For the mission itself: points = activity days/4 (max 5 points)
	For training related to this mission and attended by the doctoral student: 1 point/half-day (max 5 points)

The courses offered by the PHENIICS Doctoral School itself (6–8 courses offered each year), as well as the courses offered by Master's programs at Université Paris–Saclay (such as NPAC), or courses delivered by thematically or geographically related doctoral schools (A&A, STEPUP, EDPIF, etc.), or courses (generally online) offered by French or foreign universities or scientific institutes, can all be considered as courses offered by the doctoral school or master's programs for the purpose of doctoral training.

Under the category of "scientific events with pedagogical purpose," it includes the participation in summer schools, workshops, etc., that allow the doctoral student to acquire or deepen the skills and knowledge necessary to successfully carry out their thesis work and prepare for their post-thesis career. This category does not include international conferences, workshops, or collaborative meetings and other scientific events that the doctoral student participates in as part of their normal research work.

Among the events dedicated to post-thesis preparation, doctoral students (French speakers) are encouraged to participate in the "Perspectives" workshop organized annually by the D2I2 association in their second or third year.

For doctoral students in co-tutelle who spend at least half of their thesis outside the laboratories within the scope of the doctoral school, the number of required trainings may be reduced but should include at least:

- One course on professional insertion through research,
- One in-depth course in a thematic area of the doctoral school, delivered by the doctoral school or others,
- One summer school.

For doctoral students who need to take courses at their foreign co-tutelle university, a discussion will take place with the reference person from the PHENIICS Doctoral School to determine the corresponding number of training points.

Validation of Training Modules :

Students must submit a certificate for each training activity on ADUM in order to request validation of these trainings by the doctoral school.

Complementary doctoral training is carried out for the benefit of the individual training plan of the doctoral student. It is recommended that the student review this training plan during each annual meeting with their reference person at the PHENIICS Doctoral School Directorate in order to optimize their training strategy for their post-thesis career. In particular, if participation in trainings not listed in the table above is possible, its recognition by the PHENIICS Doctoral School and its conversion into training points should be discussed in advance between the student and their reference person.

IV.5 Animation of the PHENIICS Doctoral School

PHENIICS Fest:

In order to broaden the scientific horizon of doctoral students and promote interactions among them, an annual doctoral congress called "PHENIICS Fest" is organized in the spring. This congress lasts for two or three days and is also focused on professional integration by providing industrial partners of the PHENIICS Doctoral School with a platform to present their activities and employment needs. Former PHENIICS doctoral students are also invited to present their career paths beyond the thesis, both in academia and the private sector, in France or abroad. The PHENIICS Doctoral School particularly relies on doctoral student and alumni associations such as the D2I2 association (Doctorants et Docteurs des Deux Infinis, d2i2.in2p3.fr) for this presentation. The organization of PHENIICS Fest is entrusted to a team of volunteer doctoral students who have full autonomy, and it is recognized as a training activity falling under the category of "Trainings aimed at preparing doctoral students for their

future careers" (see Section IV.5 above). Training points are awarded upon receipt of a report on the event prepared by the organizers, which is submitted to the PHENIICS Doctoral School Directorate.

New Entrants' Day:

An integration and presentation day for first-year doctoral students is organized every year, shortly after the start of the academic year, typically towards the end of October when the majority of doctoral students have settled in.

V Doctoral Defense

The procedures for the doctoral defense are defined at the Université Paris–Saclay, and the doctoral school is responsible for informing doctoral students about the procedures and criteria.

By default, the language of the manuscript is French. If a doctoral student plans to write their thesis in English, they must inform their supervisor before starting the writing process. In this case, a substantial summary in French must be attached to the thesis. The length of the summary should be 4,000 characters, including spaces. If necessary, the summary may exceed this basic length but must not exceed 20 pages. This substantial summary should be integrated into the thesis as a separate section within the same file¹.

The PHENIICS Doctoral School does not have a specific requirement for a minimum number of published articles in order to authorize the defense. This decision is justified by the diversity of customary practices in the scientific communities within its scope. For example, in the case of a doctoral project carried out within a large international collaboration in high-energy physics, the process of developing a publication, which is typically very lengthy, may not be compatible with the timeline of the thesis. However, the thesis must contain sufficient new and interesting results to convince the jury that these works will lead to at least one publication in an internationally recognized peer-reviewed journal.

It is the responsibility of the doctoral student to initiate the defense procedure, which is now fully digitized through ADUM. It is strongly recommended that the doctoral student present and discuss their proposed jury with their supervisor prior to its

¹ However, the services of the University Library, responsible for the thesis deposit, accept that this summary be separate from the thesis file if the doctoral candidate wishes. Through theses.fr, it is then highlighted on HAL (Hyper Articles en Ligne) and considered as an annex to the PDF with the title "French summary."

submission in ADUM. This is done, among other things, to ensure its compliance with the Internal Regulations of the Doctorate at the Université Paris–Saclay, particularly regarding the rules of composition. It should be noted that the presence of at least one woman in the jury composition is specifically requested.

Following the defense and in the case of admission, the President of the jury may invite the newly appointed doctor, if they wish, to take an oath committing to respect the principles and requirements of scientific integrity throughout their professional career, regardless of the sector or field of activity. If the doctor agrees to take the oath, the President of the jury provides them with the text specified in Article 10 of the decree of August 26, 2022, which amends the decree of May 25, 2016, establishing the national framework for training and the modalities leading to the award of the national doctoral degree. The text of the oath is available in both French and English versions and should be included in the documents provided at the defense.

VI Career Paths for Doctoral Graduates

During the appointment of the rapporteurs, doctoral candidates must provide in the information system of the doctoral college of Université Paris–Saclay (ADUM) the publications resulting from their work, their immediate professional career plans, and a regularly consulted and permanent email address for future correspondence.

Doctoral graduates commit to maintaining a connection with ED PHENIICS for a minimum period of 5 years and will update, if necessary, the contact information where they can be reached after their thesis defense, to ensure the follow-up of their professional career within the doctoral school.

Doctoral candidates agree to respond to the follow-up surveys conducted by the doctoral school, and the hosting teams are encouraged to maintain contact with their former doctoral students.

The doctoral school publishes on its website the statistical information it has on the career paths of doctoral candidates, particularly to assist doctoral graduates in preparing for their future professional careers.

Presentations by doctoral and former doctoral associations (e.g., D2I2) within the scope of ED PHENIICS are made on various occasions, such as during the newcomers' day (see Section IV.5), to encourage doctoral candidates to maintain the contacts and relationships they have built during their doctoral studies beyond the thesis defense..

VII Mediation and Conflict Resolution

Any party involved in the doctoral supervision process who observes that a doctoral candidate is experiencing particular difficulties or is involved in a conflict with their thesis supervisor and/or their research unit, or is affected by an external conflict impacting their doctoral project or training, is required to promptly inform the referent of ED PHENIICS responsible for the supervision of that doctoral candidate. Reactivity and communication between the parties involved in doctoral supervision, while ensuring the confidentiality of exchanges, are essential for resolving the problem in the most effective manner possible. Detection mechanisms generally involve:

- The solicitation of the ED PHENIICS referent by the tutor, mentor, or supervisory committee of the doctoral candidate's research unit, or their referent as defined in Article 5 of Decree No. 2021-1233 of September 25, 2021, regarding private-law doctoral contracts.
- The solicitation of the ED PHENIICS referent by the doctoral candidate and/or the supervisor and/or the laboratory director.
- An explicit request for mediation from the doctoral school by the CSI through its report for re-enrollment in the doctoral program.

A doctoral candidate facing difficulties will then receive intensive and regular support from the ED PHENIICS Directorate, particularly from their referent who assumes the role of mediator until a solution is found. If deemed necessary, the referent-mediator may request the assistance of a mediation committee, which should be composed in a way that ensures a balanced consideration of the perspectives of all parties involved in the conflict. The referent-mediator of ED PHENIICS can seek advice from the doctoral school council and elected representatives of doctoral candidates on this council. When mediation by the doctoral school has been recommended by the CSI, the referent-mediator of ED PHENIICS may also involve the CSI in this committee.

The ED PHENIICS referent-mediator and/or the mediation committee first listen separately to each stakeholder involved in the conflict and then bring them together for a conclusive exchange meeting. The purpose of this meeting is to ensure that the stakeholders involved in the conflict can engage in a constructive discussion about their difficulties and potential solutions, and reach an agreement on the chosen solution. The referent-mediator sets the date for the interviews and the exchange meeting and convenes the members of the committee and the individuals to be heard. The range of solutions generally implemented, depending on the specific cases, includes:

- Discussions among the parties involved in the conflict to re-establish a solid

foundation for the thesis.

- The introduction of a new team member in the supervisory team.
- The necessity of changing the supervisor or thesis director without requiring a change in the research topic or research unit.
- The need to change the supervisor, thesis director, research unit, and/or research topic.
- In extremely rare cases, considering the termination of the thesis, which may occur either due to non-re-enrollment (unfavorable opinion from the thesis director and/or the doctoral school regarding re-enrollment) or by the doctoral candidate's decision to abandon the thesis.

It should be noted that if the mediation process reveals proven negligence on the part of the supervisory team, and they fail to address the issue during the discussions or refuse to cooperate with the mediation process, this team may be negatively regarded by ED PHENIICS and may be excluded from future supervisory opportunities.

Following the conclusive exchange meeting, the referent-mediator or the mediation committee prepares a brief mediation report, which includes three parts:

- Factual elements about the mediation process (name of the referent-mediator or members of the mediation committee, dates and durations of the interviews and the conclusive exchange meeting, individuals present).
- A brief summary of the situation that prompted the mediation, based on the shared elements discussed by the parties involved during the conclusive exchange meeting.
- The conclusion: the agreed-upon solution or a statement of the mediation's failure.

The report is signed by the mediator or members of the mediation committee.

In the case of successful mediation, this report is shared with the parties involved in the conflict and kept in the doctoral candidate's file at the doctoral school until the doctoral degree is awarded.

If no agreement is reached on a resolution during the conclusive exchange meeting, the referent-mediator and/or the mediation committee inform the rest of the ED PHENIICS Directorate and all parties involved in the conflict of the mediation's failure through a formal letter. They then request the Université Paris Saclay presidency to

establish a conflict resolution committee, accompanying their request with the mediation report.

VIII Signatures

The present internal regulations are read and signed by the doctoral student and their thesis supervisory team upon their initial enrollment in the PHENIICS Doctoral School, as well as for each subsequent update.

Signature of doctoral student
date

Thesis director's signature
date

Signature of co-advisor 1
date

Signature of co-advisor 2
date

IX Appendix A - Board membership

Representatives of units or establishments (9)

1. ABADA Asmaa (Laboratoire de physique des deux infinis Irène Joliot–Curie)
2. DE SAINT–JEAN Cyrille (Commissariat à l'énergie atomique et aux énergies alternatives – Direction des applications militaires)
3. DROUART Antoine (Commissariat à l'énergie atomique et aux énergies alternatives – Département de Physique Nucléaire)
4. GARRIDO Frederico (Laboratoire de physique des deux infinis Irène Joliot–Curie)

5. ZOIA Andrea (Commissariat à l'énergie atomique et aux énergies alternatives – SERMA)
6. COUPRIE Marie–Emanuelle (Synchotron soleil)
7. MARQUET Cyrille (Centre de Physique Théorique, Ecole Polytechnique)
8. PREZADO Yolanda (SRC, Institut Curie)
9. PROUST Eric (Commissariat à l'énergie atomique et aux énergies alternatives – DEN)

Technical staff representatives (2)

1. DATTRINO Balsama (Ecole doctorale PHENIICS)
2. BOURGES Catherine (Laboratoire de physique des deux infinis Irène Joliot–Curie)

Industrial and scientific personalities (5)

1. CHARRON Eric (ISMO, ED EDOM)
2. FOUCHET Thierry (Observatoire de Paris, ED AAIF)
3. TERRAS Véronique (LPTMS, ED PIF)
4. TRINCAZ–DUVOID Sophie (LPNHE, Sorbonne Université)
5. LEMOINE Thierry (Thales)

Doctoral student representatives (5)

one–year renewable mandate, consult the list on the doctoral school website

X Appendix B - Research units associated with the doctoral school

Institut d'Astrophysique Spatiale (IAS)

Laboratoire de Physique des 2 Infinis Irène Joliot Curie

Institut de recherche sur les lois fondamentales de l'Univers (Irfu)

DEN – Direction déléguées aux Activités Nucléaires de Saclay (DANS)

DAM–DIF– Service de Physique Nucléaire

DRT–Laboratoire d'intégration des systèmes et des technologies (LIST)

Unité de recherche pour la radioprotection de l'homme

Unité de recherche en sûreté nucléaire