

# Guide to best practices for doctoral studies at EPFL



## **IMPRESSUM**

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# INTRODUCTION

This guide aims to share practices and ideas that can enhance the doctorate experience at EPFL and make it easier for PhD students and PhD directors to get acquainted with PhD systems and procedures.

Every person involved in doctoral activities at EPFL, whether as a student, professor, or manager<sup>1</sup>, plays a part in designing, shaping, and/or adapting the doctoral study program to make it a unique experience for the junior researchers who entrust their education to EPFL. For PhD students, these years can be some of the most important of their career.

**A PhD student**, or PhD candidate<sup>2</sup>, will work with a thesis director to produce a thesis based on innovative research of high scientific quality, while acquiring disciplinary and cross-disciplinary skills. PhD studies at EPFL offer numerous opportunities to develop a professional and personal network, spanning the corporate, academic, and scientific communities.

**The PhD thesis director** holds important responsibilities as an academic leader. They are not only top experts and scientific leaders in their field, but also act as teachers and project supervisors to the students, as well as team leaders and the ultimate decision makers. The PhD thesis director is often seen as a role model by their students and therefore strongly influences the team's work culture.

A PhD degree indicates that the holder has highly advanced skills in the field and is able to perform independent research. Knowledge acquired over the course of PhD studies, which usually extends beyond purely scientific skills and may include, for example, leadership and management skills, can be applied in various institutions and further developed in most positions, both in industry and academia.

Following the completion of PhD studies, EPFL confers the title of Doctor of Sciences to the PhD student. This title attests that the holder has submitted original scientific research work and successfully completed a program of doctoral study. Consequently, this indicates that the holder is qualified to engage in high-level scientific research work.

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<sup>1</sup> Managers: program administrators, members of EPFL service units, decision makers inside EPFL.

<sup>2</sup> There is no difference at EPFL, so "PhD candidate" is synonymous with "PhD student".

This PhD best practices guide is intended for:

- **PhD students**
- **Thesis directors**

It is based on the principles set forth in EPFL's legal framework and on the academic best practices issued by university networks and best practices issued by individual universities.

These references include:

- The University of Zurich's "[Best Practice for Doctoral Education](#)"
- The Technical University of Denmark's [PhD guide](#)
- The European University Association's (EUA's) 2005 position paper, updated in 2010, entitled "[Doctoral Programmes for the European Knowledge Society](#)". See also the EUA website with a [focus on doctoral education](#).
- The EUA report titled "Doctoral education - [Taking Salzburg Forward: Implementation and New Challenges](#)".

EPFL administrators<sup>3</sup> are members of the EPFL community and facilitators for PhD students and thesis directors. Their experience enables them to provide solutions on a case-by-case basis for problems which may be encountered over the course of the PhD studies.

Two legal documents govern our PhD studies at EPFL.

- a) Ordinance on the doctorate conferred by EPFL**
- b) Directive concerning doctoral studies at EPFL**

The web page about [EPFL doctoral regulations](#) is the entrance point for all regulations about doctorate studies at EPFL.

On a national level, EPFL operates as part of the ETH domain: the [webpages of the ETH board](#) provide information about governance, finances, reporting, science policies and the legal framework.

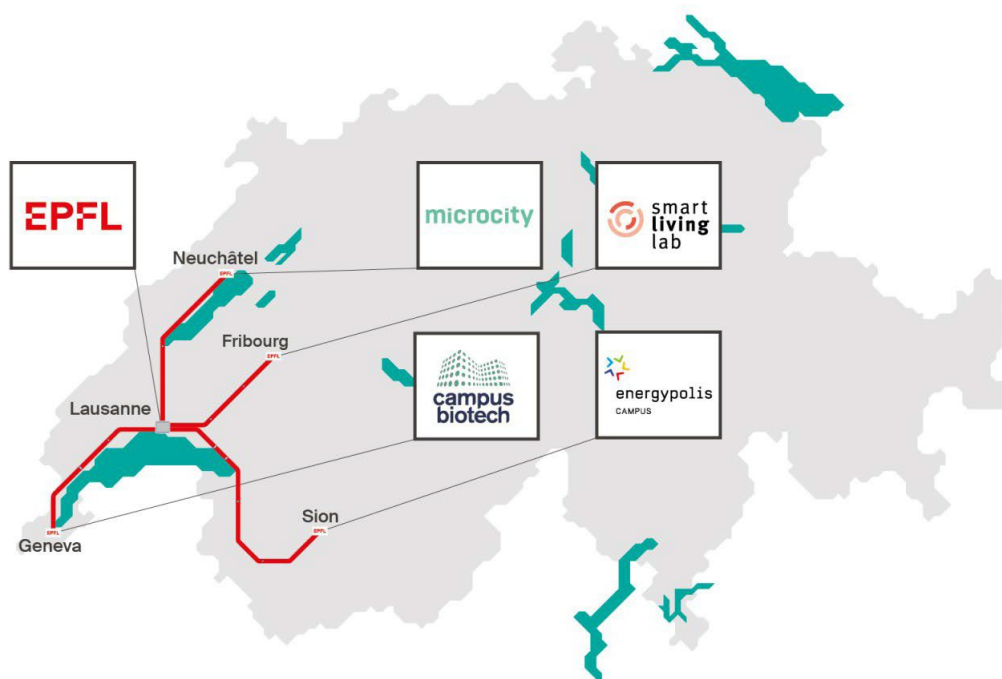
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<sup>3</sup> PhD program administrators and program directors, Doctoral School management and members of Registrar's Office (SAC) who manage PhD studies.

# 1. EPFL and its Doctoral School

## 1.1 The 5 EPFL campuses

EPFL is one of Europe's most international universities for science and technology. It welcomes students, professors, and collaborators from across the world, with more than 120 nationalities represented on the campuses. EPFL focuses on three key missions: teaching, research, and innovation.



EPFL's main campus is located in Lausanne, alongside the central administration. Most EPFL courses are held there. There are also four additional EPFL campuses (referred to as antennas or satellite campuses) located in Geneva, Neuchâtel, Fribourg, and Sion.

- [Campus locations](#)
- [Housing](#)
- [Library services](#)

The **research scope** of the main EPFL campus is fairly comprehensive. The four antenna campuses are more field-specific, as explained further below. Each extended campus consists of both laboratories and research facilities. According to an individual's activities, it may be necessary to occasionally commute from the antennas to EPFL Lausanne, for example, to participate in meetings and seminars activities, or to fulfill teaching and course requirements.

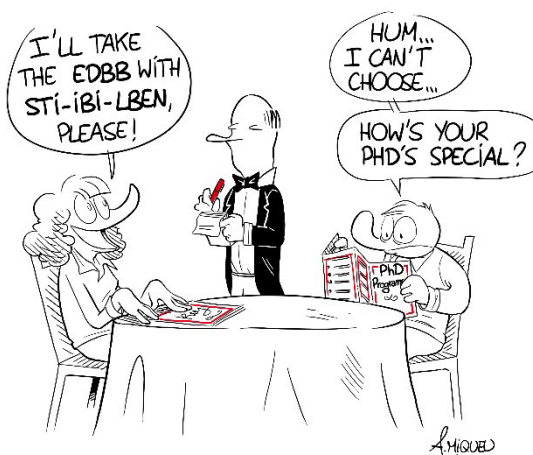
City / name	Field Number of laboratories and PhD students (2020)	Host
Geneva <a href="#">EPFL Geneva</a>	<b>Neurosciences</b> 10 laboratories and 67 PhD students	Campus Biotech
Neuchâtel <a href="#">EPFL Neuchâtel</a>	<b>Microtechnologies</b> 10 laboratories and 80 PhD students	Microcity



Fribourg <a href="#">EPFL Fribourg</a>	<b>Smart housing</b> 5 laboratories and 11 PhD students	Smart Living Lab
Sion <a href="#">EPFL Valais / Wallis</a>	<b>Energies, environment, health, neurosciences, chemistry</b> 10 laboratories, 69 PhD students	Energypolis

## 1.2 PhD programs offered at EPFL

In 2020 EPFL offered 22 PhD programs, each one designed and implemented in accordance with the needs and requirements of a specific discipline or in an interdisciplinary research field. As prospective PhD students consider the various programs, they should be aware that each program has its own rules and admission requirements; they should thus look into the specific details of each one when applying. PhD recruitment is organized by the individual programs, and so prospective students should apply directly to their program of choice.



### A PhD at EPFL is governed at two levels:

- a central level, EPFL-wide; and
- a research-domain specific level, at the PhD program level.

Although each program must comply with the rules of EPFL Ordinances and Directives, individual programs have their own specific rules of procedure. This means that the process for the study plan, the candidacy examination, the annual report and the mentoring system can differ between different PhD programs. The programs may also have their own newsletter, events (scientific or social) and other specific practices and procedures.

PhD programs at EPFL are coordinated through the Doctoral School (EDOC-GE; see next chapter), which operates across individual schools, sections (teaching) and institutes (research). PhD programs are designed to pool the resources of individual research units around a specific discipline or research domain. Program directors are responsible for coordinating the recruitment of PhD students and establishing a list of advanced courses available for PhD students, as well as ensuring students are provided with suitable academic services and advice when necessary. PhD students can learn more about the EPFL PhD program regulations [here](#).

The courses offered by all PhD programs are listed in the [Doctoral School Course Books](#), organized by PhD program. PhD students can also select courses from the large offering of



Master's courses, to either strengthen their fundamental knowledge or acquire specialized training. In addition, there is a list of [transferable skills courses](#).

A doctoral committee is in charge of running each PhD program. This committee is comprised of three to twelve members, including the program director and the PhD student representative. At least half of its members are Professors or MERs <sup>4</sup>. The program's administrative assistant organizes the meetings, takes the minutes and holds a large management stake.

The committee is responsible for:

- arranging and endorsing program courses;
- helping to select applicants for the program (without student representatives present);
- developing and updating program rules;
- setting up mentoring programs;

Specific information about the various [PhD programs](#) can be found via the Doctoral School's [home page](#).

### 1.3 The Doctoral School

The Doctoral School is the administrative unit<sup>5</sup> that coordinates and manages doctoral studies at EPFL. It is headed by the Associate Vice President for Post Graduate Education (AVP PGE). The Doctoral School undertakes several decision-making roles in line with the provisions set out in the EPFL rules, particularly the Ordinance on the doctorate at EPFL.

#### Doctoral Commission

An advisory body called the Doctoral Commission (Cdoct) is chaired by the Associate Vice President for Post Graduate Education and their Deputy. The team who manages the Doctoral School (EDOC-GE) provides support and implements decision of the Cdoct. All PhD program directors are members of the Cdoct. This committee meets four times a year and provides advice and guidance to the Associate Vice President for Post Graduate Education and EDOC-GE. This committee enables coordination between the 22 programs and provides a platform where emerging issues can be discussed. These issues can be brought to the attention of the committee either from the top level (EPFL Direction) or lower levels (programs, laboratories, associations, PhD students). The Commission also includes between one and six PhD student representatives. Their role is to present new proposals and emerging issues relevant to PhD students at EPFL, and to communicate the discussion and findings of the committee to the other student representatives.

EPFL welcomes initiatives, suggestions and proposals from all employees. As mentioned above, proposals can be made to the Doctoral Commission (Cdoct), but also to the PhD program committee. Any proposal received can then be further discussed and challenged with the aim of finding the best solution. These platforms are one of the best places to further develop and explore ideas and projects, so all participants (PhD students and professors) are encouraged to take part and help to continue improving EPFL. The goal is to continuously drive our institution forward, ensuring that appropriate adjustments and improvements are made.

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<sup>4</sup> MERs: Maître d'Enseignement et de Recherche or Senior Scientist.

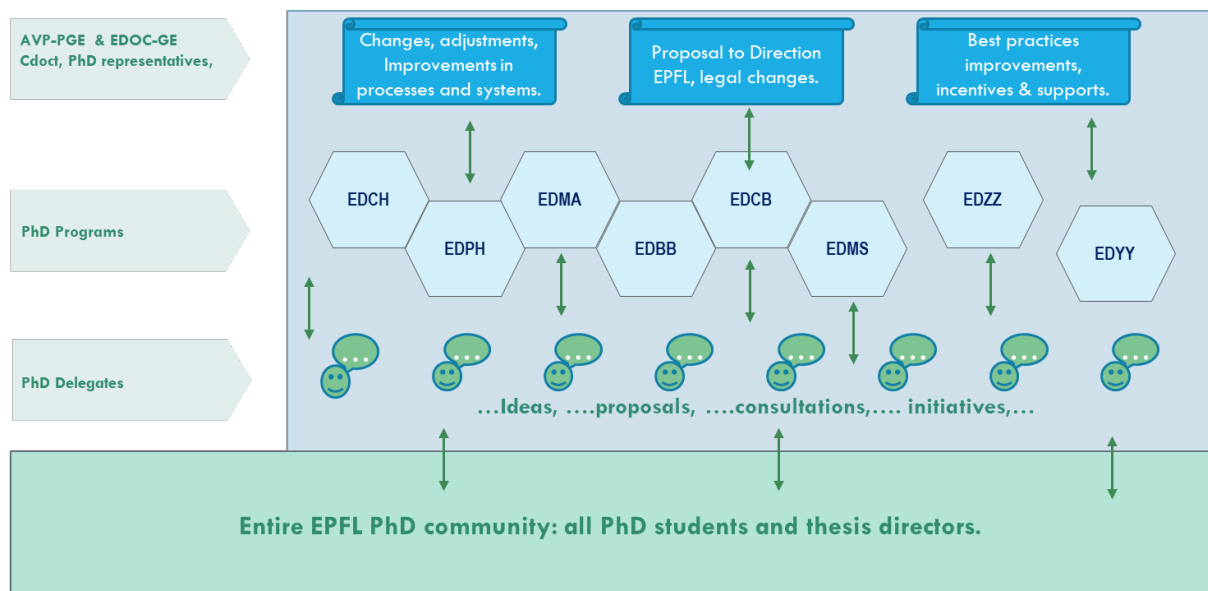
<sup>5</sup> In other universities, this is known as the "graduate school management unit" or "doctoral school management unit".

**How can a PhD student become involved?** A PhD student at EPFL is part of a doctoral community and is encouraged to take part in this community by bringing ideas and suggesting activities, or by becoming a representative for their program. PhD students regularly elect representatives for their program who both help to develop the program's academic structure and to organize social-scientific events for their fellow PhD students.

PhD representatives are also able to give input on changes and updates to EPFL rules, standards and practices. The Doctoral School management team (Associate Vice President for Post Graduate Education, the Deputy, the Project Officer) meets with the PhD representatives at least twice a year. Learn more about the PhD student representative role, and the rules for electing a PhD student representative [here](#).

PolyDoc is an association which gives PhD students the opportunity to interact with their peers. It provides a forum for dialogue with the broader PhD community and is an important channel for exchanging views and opinions amongst the different PhD programs. [PolyDoc](#) also works with PhD students to develop proposals for improving the PhD experience at EPFL.

Initiatives and suggestions put forth by PhD students are also welcome at the centralized EPFL level. For more information or to submit a proposal, please contact: [gestion.edoc@epfl.ch](mailto:gestion.edoc@epfl.ch).



**How can a thesis director (professor/MER) become involved?** Every thesis director at EPFL is invited to participate within the wider doctoral community. A thesis director can become involved in many different ways:

- They can be part of the doctoral committee of a PhD program, either as a member or (for Professors) as the director;
- They can offer a new doctoral course;
- They can be active as a mentor for PhD candidates;
- They can initiate a scientific seminar or seminars series, which provides an opportunity for leaders in the field to share their expertise with others. Seminars can either be field specific or interdisciplinary and can often facilitate new ideas and collaborations;
- They can become involved in the more social aspects of community life by organizing social-scientific events. These events can also be interdisciplinary in nature, like the Science Hackathon competition, for example.

## 2. PhD admission and cursus

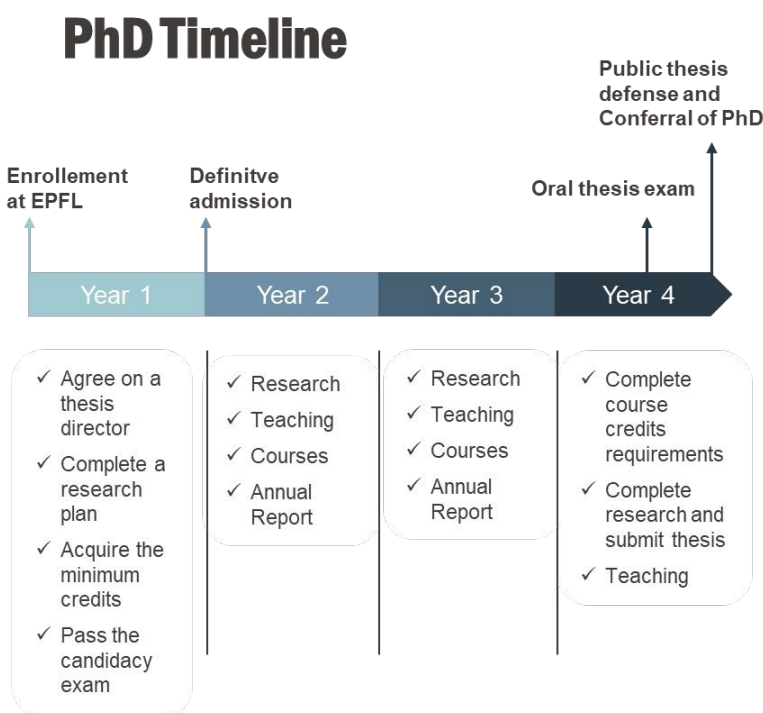
This chapter is focused on core PhD activities. However, the sections "Research", "PhD courses", "Mentoring", and "Teaching requirements" also relate to the next chapter, "Career view".

### 2.1. The PhD degree at EPFL

A PhD can provide access to a career path for a senior research position and/or an expert position in industry, national research institutes or academia, for example. According to alumni surveys, most EPFL PhD graduates begin their careers outside the academic world, in an industry position. Check [more details here](#) (in French).

That said, one year after graduation, 35 % of EPFL PhD graduates remain in academia.

Beyond this time, generally only around 3 % to 10 % of PhD graduates become university professors<sup>6</sup>. Consequently, a broad scope PhD education is a key factor for success in the job market. The following sections describe the EPFL vision of PhD education in more detail: research, professional network, career development, transversal education and educational skills development.



<sup>6</sup> See for example:

<https://smartsciencecareer.com/become-a-professor/>

<https://academia.stackexchange.com/questions/17431/what-ratio-of-phd-graduates-in-stem-fields-ultimately-end-up-as-tenured-profes>

<https://medium.com/bits-and-behavior/most-ph-d-s-arent-professors-13a741ef6868>

## 2.2. PhD admissions process

Recruiting suitable PhD students is generally challenging for any academic institution. At EPFL, we aim to “recruit the best talent”, and the PhD admissions process helps to achieve this. More information about the EPFL admissions process can be found [here](#).

When applying to EPFL, a candidate has several options. We suggest that the candidate starts by visiting the EPFL [Research](#) website or [Infoscience platform](#) to review the various laboratories and publications done issued by [EPFL research groups](#). Once a prospective student has identified some laboratories that they are interested in, they are encouraged to find out which PhD programs their “labs of choice” are associated with.

Once a program is identified, prospective students are required to fill out the online PhD application form.

The PhD admissions process at EPFL is community based. Professors of a given PhD program set joint standards and work together to develop and update the selection criteria and processes. A group of experts therefore make admission decisions. Following the submission of the PhD program application package, it is reviewed by the program committee. If accepted by the program, a student has the right to look for a thesis director for one year by competing for open positions at the laboratories within the doctoral program. The initial discussions with potential thesis directors are important: matching interest, working style, personality and communication will contribute to the quality and success of the PhD studies. It is important to complete this step before accepting a PhD position in a given laboratory.

### **Application deadlines**

Each PhD program has its own application deadlines. For more information, visit the [admissions website](#). We also suggest that prospective candidates consult the [application process FAQs](#).

### **Thesis director**

Whether in a company or a laboratory, recruitment always presents unique challenges. New PhD students are expected to advance both the own research work and also contribute to the laboratory tasks.

Due to the importance of lab recruitment, it is essential that as much freedom and support as possible be given to the faculty members to enable them to select the most appropriate members for their groups. Community-based decision making to identify appropriate candidates in different PhD programs has many advantages. Amongst others, it provides the opportunity for sound discussion amongst colleagues about prospective candidates and ensures that the candidate's profile matches with the standards of the laboratory, doctoral program and EPFL.

Thesis directors each have their own leadership style; it is essential to provide information about this to candidates during the different prospective discussions and before contracting.

## 2.3. PhD year one: from admission to the candidacy exam

Once a thesis director has been successfully found, the PhD candidate is admitted to the doctoral program. Note that in some doctoral programs (e.g. EDIC, EDFI) there is a fellowship model. In this case, the student is responsible for finding a PhD thesis director during the first 12 months, i.e. between admission and the candidacy exam, whilst being financially supported centrally, by the PhD Program.

A list of frequently asked questions about the first year of PhD studies can be found [here](#).

In the first year, the PhD student needs to:

1. develop a research plan for the thesis project;
2. acquire new skills by attending courses to obtain the necessary credits (at least 4 ECTS);
3. pass the candidacy exam;
4. obtain confirmation from an EPFL thesis director that s/he is willing to (continue to) supervise the thesis.

The thesis director can decide to discontinue the PhD supervision independently of the candidacy exam's results, but this needs strong arguments; this leads then to a non-admission for thesis preparation.

### 1. DEVELOP A RESEARCH PLAN FOR THE THESIS PROJECT

The research plan outlines the PhD research project, including goals, approach and method, type of work and a draft timeline. The research plan typically contains the following points:

1. Introduction
2. PhD thesis
3. Goals
4. Methodology
5. Work performed
6. Research time plan
7. Publication and conference presentation expected
8. Infrastructure or software
9. References and literature
10. Appendix

See the suggested research plan structure in **Attachment 1c**, at the end of this guide.

### 2. ACQUIRE NEW SKILLS BY ATTENDING COURSES TO OBTAIN THE NECESSARY CREDITS (AT LEAST 4 ECTS)

In their first year (prior to their candidacy exam), PhD students must obtain, as a minimum, the ECTS credits specified in their study plans (in most programs it is 4 credits).

Please also note that:

- a) The requirements on ECTS credits are given in the PhD program regulations, available [here](#).
- b) The estimated workload of one ECTS is 28 hours.

### **3. PASS THE CANDIDACY EXAM**

Once a student begins working with a thesis director, they have 12 months to plan the thesis research and prepare for the candidacy exam. The aim of this exam is to test the student's ability to perform independent research and to write a doctoral thesis. The exam usually consists of a short write-up, a presentation and a question and answer session in front of a committee, including the thesis director(s) and two other faculty members (the so-called jury). The doctoral candidate must demonstrate the originality of his/her thesis subject, the objectives and methods envisaged, as well as the hypothesis and related scientific arguments, including the general context of the thesis subject, state of the art of research in the area, position of the doctoral candidate's work within the research area, plan and methodology for the research project, as well as the timeframe for its completion. The jury assesses the thesis proposal, the research plan and the suitability of the student for completing a doctoral degree in this area. Details about this exam vary from program to program; students are therefore encouraged to examine the specific rules for their PhD program.

### **4. OBTAIN CONFIRMATION FROM AN EPFL THESIS DIRECTOR THAT S/HE IS WILLING TO (CONTINUE TO) SUPERVISE THE THESIS**

This is the formal agreement between the thesis director and the PhD student which opens the road for the full PhD project. From this stage, a PhD interruption is very rare.

#### **PhD student**

The PhD student should make sure they have identified the appropriate means for achieving the goals of their thesis. During the PhD thesis, the PhD student will have the opportunity to:

- a. conduct research and be part of both a local and global research community;
- b. take part in both educational and teaching activities;
- c. further develop their skills through courses and training; and
- d. build a professional network in their scientific and associated fields.

In the first year, the research plan presented at the candidacy exam should be extensively discussed with the thesis director. It is also possible for the student to discuss their plan with other individuals, such as their mentor. It is important to note that research plans can evolve as new observations and results are obtained.

As part of the PhD degree program, PhD students enhance their scientific and cross-disciplinary skills. This training is typically overseen by the PhD program and is completed in parallel with the research project. All courses that grant ECTS credits should include an assessment of the skills a student is expected to have acquired. The results of this assessment (generally a pass/fail grade) will be recorded in the transcript of records (*bulletin des notes*). This can be accessed at any time [through IS-Academia](#).

It is also recommended that the PhD student maintains a list of all the courses and other forms of training they complete during their PhD studies (along with the results) so that they can easily reference the material and demonstrate the full range of skills obtained. This portfolio is important for their next career steps.

#### **Thesis director**

Thesis planning often starts months or years before the recruitment process begins. After writing a proposal, defining work packages, requesting equipment and outlining prospective research steps, the thesis director can recruit suitable PhD candidates and the thesis work can start. It is also possible for a thesis director to work directly with a PhD candidate to outline the scope of a new project if one is not yet clearly defined.



It is the responsibility of the thesis director to ensure that the work proposed is both sufficient for a PhD thesis and achievable within the expected timeframe of the thesis (4 years).

The thesis director can expect the PhD student to show increasing technical knowledge and skills, increasing knowledge of the literature, increasing research independence and development of reasonable writing skills.

Identifying strengths and weaknesses is key in year one, including establishing an appropriate plan for increasing competencies and skills. The thesis director plays an important role in developing the student's research project, as a coach and mentor.

Sufficient time must be available for scientific exchange. The thesis director should support the PhD student in writing the research plan since this is often the first time a PhD student will have put together such a document.

If the thesis director is not satisfied with the PhD student's performance, the PhD thesis can be stopped and the contract interrupted at the end of the 1<sup>st</sup> year. More information about that in chapter 5, "PhD contracts, salaries, fees and benefits."

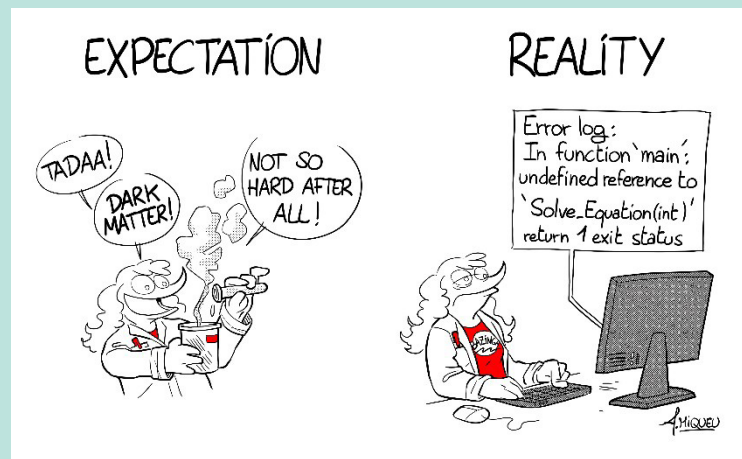
## 2.4. Performing research

### PhD student

The PhD student is expected to explore the selected thesis topic through a research project that is both original and educational, in such a way as to be able to complete the thesis within the given timeframe (4 years). According to the EPFL Ordinance on the doctorate at EPFL: *"The subject of the thesis lies within a particular scientific area taught or researched at EPFL. As a general rule, the subject must allow for the thesis to be completed within a four-year period from the candidate's official enrolment date, with a minimum required period prior to the oral examination of two years."*

PhD students at EPFL are expected to perform independent research. Instead of acting within an existing framework of knowledge, the goal is to build upon what is already known and to explore what remains to be understood to deepen the understanding of a topic. Being a PhD student means generating new knowledge and creating novel technologies.

This differs from research for a Bachelor's or Master's degree, which is closely supervised and has a clear end goal that can be achieved within the allocated timeframe. A PhD student will learn how to take on new research challenges, build professional networks, and become involved in research communities with other scientists and engineers.



A PhD thesis is a challenging project, which requires continuous self-evaluation. It is therefore very important that a PhD student selects a topic in which they are avidly interested. Moreover, a PhD thesis requires a great deal of self-motivation, the ability to work in a team, and may require long working days. Doing a PhD is not a standard employment with for example fixed working hours.

Communication is paramount for good science, both with immediate colleagues in the laboratory and department, as well as with the broader academic community. Continuous efforts to communicate, and to improve this communication, are a key element of quality and

success.

Due to the close working relationship, the choice of a thesis director is hugely important and a PhD student should take the time to find someone with whom they believe they can have a good and fruitful working relationship. Before choosing a thesis director, we recommend that the student has an in-depth discussion with the prospective supervisor about goals and working style to further assess the potential for good cooperation during the thesis.

In order to help establishing a good relationship when the PhD starts, we suggest consulting two documents at the end of this guide:

- [Attachment 1a](#): Establishing a good relationship from the beginning. Follow-up document for PhD students and supervisors. Adapted by Anne Lee.
- [Attachment 1b](#): EPFL Doctoral School, The supervisory relationship: a tool for discussion.

## Thesis director

The thesis director is firstly expected to provide relevant and regular scientific guidance on the PhD student's work. It is important for the thesis director to make sure that there are the necessary resources available to cover the costs of the entire PhD. The thesis director needs to make sure that the PhD student is fully integrated into the research unit and that they are given access to the relevant facilities, such as lab equipment, computers and other IT equipment, documents, and software. The PhD student should be encouraged to attend seminars and conferences relevant to their research, and to present their work at scientific events, seminars, or conferences.

The thesis director should be mindful of a PhD student's stress level and take measures if necessary. Some weeks can be very intense, including a lot of working hours for the PhD student; PhD students are entitled to 5 weeks per year of vacation.

Within the research unit, cooperation and help can be expected from PhD students; care must be taken to ensure that sufficient time remains available for the actual thesis work. The PhD student must dedicate most of their time to their thesis work. The workload for "thesis" and "non-thesis" tasks should therefore be carefully evaluated.

If the PhD research is carried out in association with a company or research institute, the discussion and decision about workload concerning "thesis" and "non-thesis" tasks must be held between the PhD student, the PhD director and the partner representative. More information can be found on this topic in Article 9 of the [Directive concerning doctoral studies](#) at EPFL, "Off-site doctorates".

***A message from the thesis advisor's EPFL community to the future PhD student.***

<b>What do we expect of you?</b>	<b>Necessary competencies ...</b>
<p>A PhD student will learn to design, execute and interpret a correctly controlled experiment, including the planning and monitoring of next steps. We expect that you will learn to communicate the outcome of your work clearly.</p> <p>Put simply, this means answering the following questions for each experiment:</p> <ul style="list-style-type: none"><li>• Why did you do the experiment? (the concept)</li><li>• How did you do the experiment? (the design)</li><li>• What results did you obtain? (the benchwork)</li><li>• What do you think it means? (the interpretation, both in immediate terms and in a wider context)</li><li>• What will you do next? (taking the project forward; if the experiment failed, how can I improve)</li></ul>	<ul style="list-style-type: none"><li>• Become familiar with the background literature upon which your project is founded.</li><li>• Make sure you remain on top of new literature in your field.</li><li>• Keep on top of current technical developments in your field and new techniques that can be applied to your project.</li><li>• Share and present your work for discussion (group meetings, institute seminars, conferences).</li><li>• Submit your work to colleagues and other scientists to obtain their feedback.</li><li>• Share your knowledge and expertise with colleagues, giving critical feedback on their work, and helping to train others.</li></ul>

In particular, we expect that you will accurately and clearly record your experiment in a lab book, in such a manner as to enable anyone else with appropriate expertise to be able to reproduce what you did after you have left the lab.

Writing, presenting and defending your thesis work will require the acquisition and implementation of all of these skills. To help you achieve these goals, your supervisor and colleagues, the PhD program, the school and EPFL will give you the opportunity and means to acquire the competencies you need for the advancement of your thesis. This includes technical advice and training, both in the lab and through training and educational modules and courses. You will also receive coaching in interpersonal and presentation skills and be provided with networking opportunities to help with your career development.

### **Thesis co-direction (co-supervision)**

Co-direction of a thesis is a frequently used option. This means that in addition to the thesis director (an EPFL Prof/MER), there is also a thesis co-director (an EPFL or an external Prof/MER/Dr) involved in the thesis supervision. To give an example, at the PhD program Materials Science and Engineering (EDMX) in 2020, 15% of PhD students had a co-supervisor.

Co-supervision is especially recommended for interinstitutional thesis work, typically between industry and EPFL or research institutes and EPFL. With interdisciplinary thesis subjects, or for thesis work that concerns a collaboration between two EPFL laboratories, co-supervision can also be very valuable.

An authorization for a thesis co-supervision needs to be requested from the Doctoral School. The request explains why the co-supervision is necessary and includes (if it does not concern

an EPFL Prof/MER) the CV of the proposed co-director (Ordinance on the doctorate at EPFL, Art. 10, "Thesis supervision").

## 2.5. Research ethics

All EPFL researchers, PhD students included, are responsible for their own conduct and compliance with directives and best practice in terms of integrity. However, as part of their leadership duties, project and research group leaders, and in particular professors, bear the final responsibility concerning misconduct of a member of their team.

The fabrication, falsification of results and the plagiarism constitute research misconduct. A definition is given by the Office of Research Integrity (US):

Research misconduct means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

- (a) Fabrication is making up data or results and recording or reporting them.
- (b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
- (c) Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.
- (d) Research misconduct does not include honest error or differences of opinion.

At EPFL, research integrity implies (summary in keywords):

1. Careful archiving of data.
2. No fabrication, alteration, selection of data.
3. No appropriation of intellectual property.
4. Full inclusion of authors in the list of publication.
5. Respect of specific rules for research involving human beings and animals.
6. Exemplary conduct of research leaders and project managers.



Rules are available in the directive concerning research integrity and good scientific practice at EPFL (LEX 3.3.2), on page 5, Section 3, Articles 10 and 11, "Rules regarding publication and authorship".

Direct access to the directive [here](#).

EPFL webpage about research integrity [here](#).

Further information about scientific misconduct as well as rules regarding teaching, research and technology transfer can be found in the EPFL [compliance guide](#) (pages 32-48).

## **Authorship**

Questions about authorship can arise. Subjective assessments of the different contributions made by members of a research group may differ. We suggest referring to the document "[Authorship in scientific publications: analysis and recommendations](#)" produced by the [Swiss Academies of Arts and Sciences](#).

The question of authorship is important. The general rule about authorship is that an author is (excerpt of Swiss Academies of Arts and Sciences guidelines):

- Someone who, through his/her own scientific work, has made a substantial contribution to a publication.
- Anyone who, through his/her own scientific work, has made a substantial contribution to the planning, execution, evaluation or supervision of research, and to writing the manuscript.
- Authorship is justified by work, not position.

In fact, many journals specify in detail what constitutes authorship, and in some cases request that the contributions of each author are clearly identified.

Failing to include a contributing author on a paper is considered scientific misconduct. [Check EPFL citation and copyright rules](#).

## 2.6. PhD courses

At EPFL, a variety of courses are offered so that students can have the flexibility to design their own coursework and maximize their learning outcomes. These courses are designed to further develop the PhD student's skills and knowledge, both in their field of expertise and in other complementary areas of science and knowledge.

These courses can be broadly grouped as follows:

1. Specialized courses: these typically align with the area of the thesis work, provide an opportunity for a PhD student to acquire additional competencies and expanded knowledge in a particular area/skill.
2. Transferable skills courses: leadership, project management, scientific writing and presentation.
3. Innovation and technology transfer: entrepreneurship, launching a new venture, intellectual property, licensing.
4. Pedagogy and education: teaching science and technology, course design, digital education, online course production and use, MOOCs production.



### PhD student

Please also note that:

- a) The requirements on ECTS credits are given in the PhD program regulations, available [here](#).
- b) The estimated workload of one ECTS is 25-30 hours.

Some of these courses are designed for a specific PhD program. The program's course book will list the mandatory and optional courses. For more information, please visit the [Doctoral Course Books web page](#) and find the course book of your study program. PhD programs request at least 12 ECTS and no more than 30 ECTS. The requirements on courses for each program are given in the PhD program regulations, available [here](#).

The Doctoral School also offers a range of transferable skills courses; the list of courses is available [here](#).

Each PhD student can choose 4 ECTS (of the 12 to 30 ECTS required by the program for the full PhD) freely from amongst all of the doctoral program and transferable skills courses. This does not concern the 4 ECTS required for the first year.

**A thesis director** allows the PhD student to dedicate a sufficient amount of their working time to learning activities. This includes allowing time for non-compulsory courses in which the PhD student shows an interest, and which can be considered important for their career. The amount of time dedicated to non-compulsory courses needs to be adjusted to accommodate the other work commitments and agreed upon between the thesis director and PhD student. A proportion of these courses can be taken outside of working hours.



## 2.7. Mentoring

The term “mentor” has numerous meanings depending on the setting in which it is applied. Mentor, advisor, supervisor, thesis director, or thesis co-director, are all individuals who will act in various mentoring roles to a PhD student over the course of their thesis. In many instances, one person may take on several of these roles.

Blackwell (1989) defined mentoring as: “a process by which persons of superior rank, special achievements, and prestige instruct, counsel, guide and facilitate the intellectual and/or career development of persons identified as ‘protégés’.” With time the definition and scope of mentoring has changed; it is also different from one university to another. However, the fundamental role of a mentor remains to foster the professional progress and development of the mentee.



### How do things currently work at EPFL?

In accordance with Article 2.4.5 of the [Directive concerning doctoral studies at EPFL](#), the PhD program committee:

*“Establishes a mentoring system offering guidance to doctoral students regarding the resolution of any difficulties met within the context of their training, in particular regarding the preparation of their thesis or cases of conflict.”*

Following the decision of the Doctoral Commission (Cdoct 132) in February 2021, a new mentoring system has been implemented from September 2021. The new mentoring rules can be found [here](#).

The role of a mentor is to support the PhD students throughout their work and educational progress and help them overcome any professional or personal challenges they may face during their studies. In most PhD programs, each PhD student is assigned a mentor by the program director upon registration. Each PhD program at EPFL has adapted its mentoring rules slightly to suit the specific needs and expectations of their own professional culture. In some programs, the PhD student is invited to choose a mentor within the first three months of the PhD. In these cases, the PhD program may propose a list of recommended mentors. However, the PhD student is responsible for making the initial contact. The mentor remains anonymous with respect to the thesis director to ensure confidentiality.

We strongly recommend that PhD students take advantage of this mentoring opportunity and reach out to their mentor over the course of their studies.

Based on this, we suggest the following advice for PhD students:

- a) Check the [EPFL rules](#) and the specific mentoring rules as they are stated in your [Doctoral Program Regulations](#).
- b) Meet your mentor according to your needs, but at least once a year
- c) Discuss the respective roles of mentor and mentee, and reflect on the limits of your personal arrangement. It is also good to keep a written summary about the agreement between you (as mentee) and your mentor on what your respective roles are considered to represent.

- d) Agree with your mentor how information will be handled between you, your mentor and your PhD advisor (confidential/non-confidential) and doctoral program director. This should be clearly agreed at the start of the PhD.

## 2.8. Thesis supervision

Within the first few weeks of their professional relationship, the PhD student and thesis director are encouraged to clearly define the framework of their working relationship.

Both need to have an in-depth exchange about their expectations, working style and priorities. They should discuss respective expectations outlining how each individual interacts and communicates, how often progress updates should be given, and how often and what kind of feedback will be provided. The two checklists included in attachment 1a and 1b of this guide can be a useful aid for this discussion.

### Thesis director

Three items have emerged as being crucial for the realization of creative research from the LERU Element of good practices in doctoral training (2014):

- Firstly, the research culture must be positive, i.e. researchers need to experience the appropriate balance of support and freedom.
- Secondly, there needs to be plenty of communication, both formal and informal, for ideas to flourish.

PhD thesis directors may adopt different approaches for supervising their students according to their field and personal style. The roles of the EPFL thesis director can be manifold:

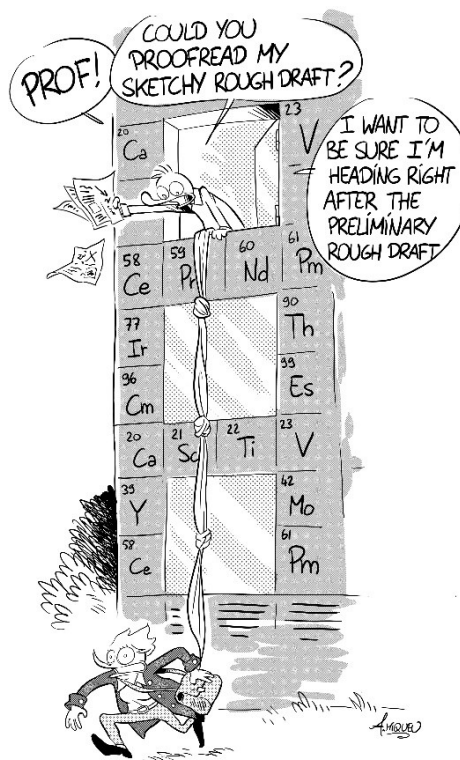
Expert	Entrepreneur	Manager	Mentor	Leader	Evaluator
Knowledge	Vision	Time with PhD's	Science	Guidance	Admission
Skills	Opportunities	Resources	Stimulate	Inspiring	Annual review
Methods	Creativity	Organization	Support	Strategy	Defense
Integrity	Innovation	Objectives	Career dev.	Decisions	Reference
	Funding	Plans	Talent dev.		
	Network		Wellbeing		

Source: Univ Ghent, modified.

It is the responsibility of the thesis director to not only lead and deliver instructions, but also to dedicate a significant part of their time to their PhD students for discussion, coaching and providing advice.

EPFL is committed to a leadership culture that encourages open dialogue. With respect to doctoral studies, particular leadership recommendations for thesis directors are as follows:

- Be aware of the responsibilities of the leadership role.
- Lead by objectives (i.e. concentrate on specific goals) and focus on development.
- Communicate openly and clearly.
- Actively support personal development.
- Enable adjustment of both timeline and objectives as necessary based on new findings.
- Promote team spirit: shared vision, get to know each other, good communication, commitment and freedom, honor progress and success.



**PhD student** are expected to:

- Be dedicated to the research project.
- Be prepared to work hard, which may sometimes include weekends or evenings. However, the regular work time in Switzerland is 41 hours per week.
- Strive to design and carry out research autonomously, increasing self-confidence and independence.
- Know, understand and comply with the rules, standards and principles of the scientific world and institutions.
- Respect deadlines and ensure punctual delivery of documents (annual reports, conference abstracts, etc.).
- Show respect for colleagues and the thesis director's time and efforts: for example, the PhD student needs to avoid handing in a paper draft that is poorly written or not spell-checked; or handing a conference abstract one hour before it is due.
- Ensure respectful treatment of other group members, in their identity and specificity.
- Offer a positive attitude, open and ready to help and contribute to group activities.

## Matching expectations

The PhD student and thesis director should discuss the PhD studies and research (the goals, tasks and related expectations) in detail before the decision to start PhD studies with a certain thesis director or to hire a certain PhD student is made. Topics to clarify include the content of the thesis, the scope of work, timing, possible partnerships/collaborations and the necessary equipment or resources. These requirements may change with time. As such, students and advisors are encouraged to re-evaluate and re-discuss expectations as necessary. The thesis director has a certain style, and the student needs to hear about this and make a well-informed choice concerning starting a PhD with that thesis director. A thesis director may be able to

somewhat modify their supervision style and methods to adapt to an individual student, but this is not always possible, nor sustainable for the full duration of the PhD studies.

## **2.9. Disseminating the research findings**

### **2.9.1. Scientific papers and proceedings**

#### **PhD student**

Over the course of the thesis, the PhD student is expected to write articles and proceedings, possibly file patents, and write reports for partners and collaborators based on their findings. These publications will be considered in the overall evaluation of the PhD thesis. PhD students' names should appear among the authors in the articles or book sections on their research, including after they have left.

There are thousands of scientific journals in existence, ranging from those of the world's highest quality and standard, to those which are fake or predatory journals. Scientific journals are often specific to the research area and it is important to discuss with the thesis director which journals are considered "good" or most reputable in the field. Each PhD director has their own approach and policy to publication. This also tends to be field-specific and is typically different for someone in engineering compared to someone in mathematics or physics, for example.

#### **Thesis director**

The thesis director should support the writing process, for example, by suggesting target journals, defining scope, giving input and helping draft outlines. The thesis director's role is not to write or re-write the paper, but to support the writing process, such that the student can improve their writing skills. It is also the responsibility of the thesis director to ensure that a student is aware of the available information regarding publication at EPFL.

Research integrity is essential for all research activities and for contributing to creating trust. Pages 48 – 49 of the [Compliance Guide](#), provide essential information in this regard. See more about this in the chapter "Research ethics".

## 2.9.2. Presenting at conferences and workshops

### PhD student

It is important to disseminate research from as early as possible, typically in year 2 or 3. This can be achieved by presenting the findings to colleagues, groups of professionals at conferences or at scientific meetings. It provides an opportunity to receive feedback from other experts in the field. The related discussion process is fundamental for research and allows PhD students to improve their skills.

PhD students often find conferences a source of motivation and creativity. Furthermore, it is important to become part of a wider scientific community and build up a network. Conferences and seminars provide an excellent opportunity for this.



### Thesis director

It is essential to make the necessary resources available for the PhD student to participate in seminars, conferences and summer schools. The returns on the financial and time investment usually consist of the development of valuable ideas and an increased motivation for the thesis work.

### 2.9.3. Writing and publishing the thesis

This is an important element of the PhD studies. Numerous references are available on the webpages, books, platforms and tools available. Some units at EPFL also provide courses or training:

- [EPFL library courses](#)
- [FAQ EDOC about end of the thesis](#)
- [Scientific writing EDCH](#)
- [Academic writing for doctoral students](#)
- [Language center courses](#)

Check also:

- <https://www.epfl.ch/campus/associations/list/polydoc/page-151233-en-html/page-151271-en-html/>
- <https://www.epfl.ch/campus/associations/list/polydoc/page-151233-en-html/page-151271-en-html/page-151246-en-html/>
- [https://www.epfl.ch/education/phd/wp-content/uploads/2019/05/EPFL-EDOC-Word-My\\_these.pdf](https://www.epfl.ch/education/phd/wp-content/uploads/2019/05/EPFL-EDOC-Word-My_these.pdf)

More online resources and manuals:

- <https://github.com/kljensen/mit-phd-thesis>
- [https://olivier.commowick.org/thesis\\_template.php](https://olivier.commowick.org/thesis_template.php)
- <https://mitpress.mit.edu/books/how-write-thesis>
- <https://www.monash.edu/rlo/graduate-research-writing/write-the-thesis>

#### Open Science

EPFL prioritizes open science for the dissemination of new knowledge and advancement of the wider scientific community. Discoveries made at EPFL should be shared with the entire scientific community and the general public. Furthermore, the intellectual contributions to those discoveries, as well as the corresponding intellectual property rights, should be recognised. EPFL offers advisory services concerning intellectual property rights and IP protection. More information about open science can be found [here](#).

Open Science Recommendations of the European Universities Association (EUA) can be found [here](#).

#### Thesis

EPFL uses an archiving and electronic distribution system for all theses. As a result, the PhD director and PhD student sign a thesis dissemination agreement after the defense, before the thesis is sent for printing. This agreement authorises EPFL to disseminate the thesis and make it available online (Art. 2 of the Directive concerning doctoral studies, available at EPFL [PhD regulations](#)).

Please note that any inclusion of text excerpts/citations in your thesis without giving the proper reference/sources is an act of plagiarism. Plagiarism is the infringement of copyright and/or intellectual property rights. EPFL uses special software to detect plagiarism in all submitted theses. See the [Compliance Guide](#), pages 38-39.

The EPFL Library offers a number of services to researchers and in particular to PhD students. Please check the [link](#).

Some further key points are as follows:

**Printing without delay:** Neither the author nor his/her thesis director has the right to delay the printing of the doctoral thesis (Art. 25, Directive concerning doctoral studies; Art. 19, Ordinance on the doctorate at EPFL).



**Patent and thesis publication:** The public release of the thesis may only be postponed for the time necessary for the prompt filing of a patent. As soon as the application for the patent has been filed (within the meaning of art. 49 of the Federal Act on Patents for Inventions), the thesis must be released (Art. 25, Directive concerning doctoral studies; Art. 19, Ordinance on the doctorate at EPFL).

The request to postpone the publication of the thesis to allow for the patent filing should be addressed by the PhD student and advisor to the doctoral school ([gestion.edoc@epfl.ch](mailto:gestion.edoc@epfl.ch)).

**Ex ante check for thesis publication:** Before embarking on a thesis, the candidate and their thesis director must ensure that nothing will impede its complete publication and distribution (Art. 25, Directive concerning doctoral studies; Art. 19, Ordinance on the doctorate at EPFL).

It is possible for the PhD student to submit their thesis as a collection of articles that they have published over the course of their studies. These must be compiled into a single document and must include descriptions outlining the specific contribution the student has made to each publication. If this is an option a PhD student would like to pursue, it is recommended that they discuss this with their thesis director to see if it is appropriate. More details are provided [here](#) at the line "Thesis made of combined articles – Cdoct 109 – November 2015".

## 2.10. Teaching requirement

PhD students are also required to complete a certain number of teaching hours over the course of their studies (the number will vary depending on the school/section). As part of this, they may be asked to work as a teaching assistant (TA) for certain undergraduate or master's courses. Teaching duties vary considerably depending on the specific class, professor and field. It can concern a theoretical, practical, new, or well-established class. The TA efforts and tasks will differ significantly depending on this. Generally, the work requires contact as well as preparation hours. To be able to plan your thesis research and TA work correctly, it is important to know in advance the amount of time required to prepare and deliver a certain course.

The classes that a PhD student teaches will generally be in the same section as the thesis director, and the teaching will be overseen by that section. PhD students should expect to spend on average one day a week teaching during the school semester (September – December and February – June). It is essential to make sure that the teaching workload is kept compatible with the PhD students' research project.

A teaching assistantship enhances the PhD student's knowledge on specific course subjects and also allows PhD students to acquire presentation and management skills. If possible, the content and class assigned to a PhD student should align with their broader interests and goals. However, this is not always possible. PhD students can also receive teaching hours for supervising Master's or semester projects.

The [Teaching Support Center](#) (CAPE) provides resources, classes, and advice for teachers at EPFL. CAPE regularly holds workshops and gives courses (for ECTS) for TAs ([see here](#)) to help them to develop their teaching skills. Workshop topics include:

- **Lecturing and presenting in engineering** – Informed by contemporary research on teaching engineering concepts, participants will design and give lessons for specific types of students. This course is designed for those who intend to make teaching science or engineering part of their career, in a formal or informal way.
- **Teaching assistants for exercises** – This interactive one-day workshop helps individuals to develop skills for managing classroom interactions and for designing exercises that maximize student learning.

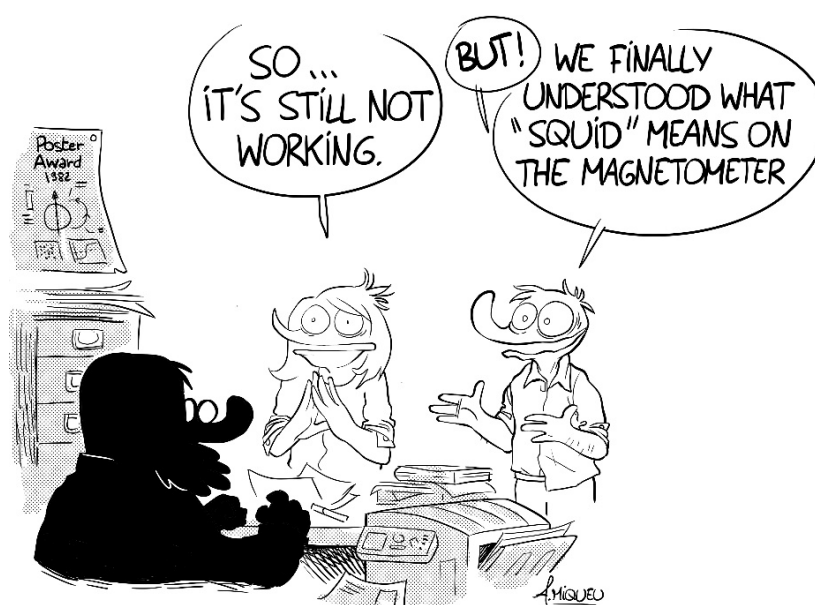
## 2.11. Progress updates

Over the course of their thesis, the **PhD students** will have to provide progress updates to their thesis director on a regular basis. In addition, they are required to submit an annual report every year post-candidacy. The student should discuss the time schedules for progress updates and feedback at an early stage with the thesis director. Progress updates can be organized as a regular meeting between the PhD student and advisor, or can be done in writing.

The **thesis director** should follow the progress of the PhD student's work and is expected to provide sound, constructive and fact-based feedback to the student. A thesis director should clearly mention if progress is sufficient or not and provide detailed feedback. The comments should be positive or provide constructive criticism in a fair manner, while giving perspective. Purely negative feedback does not encourage improvement. When a PhD student submits a progress update or another type of document to the thesis director for review, the response time should normally not exceed around ten days. The thesis director should, where possible, discuss new directions and options in light of the emerging findings.

### Meetings

The frequency of the meetings will depend on a number of factors, including the particular thesis project, the working culture within the laboratory, and the research field. PhD students generally meet with their PhD thesis director twice a month, but the frequency of meetings may vary throughout the PhD thesis. Over the course of the PhD thesis, the thesis director and PhD student should establish and revisit a plan regarding the frequency of their meetings. As a rule, not more than one month should elapse without a meeting of sufficient duration (e.g. around one hour).



Meetings should be well-prepared to allow for discussion and feedback on the main points. Both parties should have enough time to listen to each other and to develop new ideas. It is usually better to meet face-to-face. However, circumstances may call for some meetings to be held online.

## Annual report

According to the EPFL [Ordinance on the doctorate](#): "Each year, the candidate submits a report to the thesis director on the state of progress of their work. The thesis director gives the candidate their opinion in writing and submits a report to the program director within one month." In general, it is the doctoral program that coordinates this process.

The annual report template is currently under discussion, but the most recent template has the following layout:

The **first section** includes general information/questions.

The **second section** is about research progress; typically, topics include:

- Research progress during the past year, including scientific output: papers, patents or software.
- Research objectives and timeline for the next year.
- Educational and teaching activities.

The **third section** is about progress assessment, to be completed by the PhD student and the thesis director, including:

- The student's engagement in the project: satisfaction, motivation, commitment, initiative, independence.
- The thesis director's supervision: availability, coaching, support, resources, training and permission for students to attend conferences.
- The project's progress: quality of results, critical thinking, vision, timeline, organization, planning.
- The student's scientific and career development: training, acquired skills (writing, presenting), teaching load, conferences and networking, post-PhD planning.
- Laboratory organization: support from colleagues and own collegiality, open communication and atmosphere, balance in collaborative projects, resource availability.

The **fourth section** contains the overall appraisal and signatures.

## Lack of progress

In the annual report overall appraisal, most PhD students obtain the indication "meets the expectations".

However, if the indication is "needs improvement" or "unsatisfactory", then improvement is required.

In this situation, or at any point in time (between annual reports) at which the thesis director is unsatisfied with the PhD student's progress, the following procedure must be followed:

1. The thesis director informs and meets the doctoral program director in order to discuss the PhD student's situation.
2. The program director notifies the doctoral candidate in writing of the problems discerned, the measures required to improve the situation, and the deadline within which these must be taken.
3. A new assessment is made by the thesis director and the program director (possibly supported by a member of the doctoral program committee who is knowledgeable about the thesis subject).

As a result of this assessment, there is in most cases a mutual agreement between the PhD candidate, advisor, and program director, on either the continuation or abandonment of the

PhD studies.

Otherwise, if the evaluation of the PhD candidate's work by the thesis director and the program director is negative, the thesis director and doctoral program director propose to the doctoral school (EDOC) the exclusion of the PhD student from EPFL doctoral studies. Specific rules about contract termination are to be found under chapter 5 "PhD contracts, salaries, fees and benefits".

The EPFL Doctoral School then:

1. invites the PhD student to provide written comments on the situation (the PhD student can thus make use of their *right to be heard*);
2. decides about appropriate adjustments or the exclusion of the PhD student from doctoral studies.

When a PhD student abandons their PhD studies, or if a PhD student is excluded from PhD studies by the doctoral school, the 1-year EPFL PhD employment contract can be ended (or not renewed).

The relevant legal texts for the thesis cancellation (exclusion of doctoral studies) process are:

- **Article 10, Thesis supervision,** [Ordinance on the doctorate at EPFL](#) (LEX 2.4.0.1)
- **Article 12, Role of thesis director,** [Directive concerning doctoral studies](#) (LEX 2.4.1)
- **Article 4, Employment duration,** [Directive on terms of employment of EPFL assistants](#) (LEX 4.4.1)

## 3. Career perspective

This chapter focuses on career development aspects and concerns skills development for future careers and the development of a professional network.

### 3.1. Building a professional network

#### PhD student

PhD students have ample opportunities to build a professional network over the course of their thesis. This should not only be with the other researchers in the laboratory or doctoral program, but also with people from the local and global scientific community; in particular, students should aim to develop scientific relations with researchers from other labs, schools, research consortia and associations. Some networking activities are straightforwardly accessible, as they are organized by associations on the campus. Please check the [associations list](#). Some examples include:

- [PolyDoc](#) (PhD Student Association)
- [AGEPoly](#) (General Student's Association of EPFL)
- [Forum EPFL](#) (Meeting Companies-Future Graduates)
- [LauzHack](#) (Hackaton Organisation)
- [EPFelles](#) (EPFL female student association)
- [EPFL Wish foundation](#) (Women in science)

Industry contacts can provide students with an insight into success factors within a corporation, which can be substantially different from those in academia. Whether a PhD student is interested in an academic or non-academic career, it is important to understand the differences in company cultures and learn about the working rules and constraints of the corporate world. These learning opportunities and experiences outside academia will be valuable whether the PhD student decides to work for a university, a company, an NGO, or a government agency.

Another way the PhD student can build up their professional network is by attending workshops and seminars, taking part in summer school programs, or presenting a poster or a paper at a conference or other professional event. PhD students are encouraged to develop their own ideas for summer schools or workshops and to seek funding (see how to [organize a summer school](#)).

By being curious about research outside of the strict thesis topic, the PhD student will have the opportunity to develop cross-disciplinary skills. Last but not least, attending social and networking events can be an effective way to not only make professional contacts, but also to find friends and colleagues in different areas.

EPFL's [Engineering Industry Day](#) offers excellent networking opportunities, as does [Forum EPFL](#). If the PhD student is interested in [innovation and entrepreneurship](#), and would like to use the thesis research as the basis for a start-up, EPFL's many innovation and tech-transfer programs may offer specific opportunities. The [Innogrants](#) program is also very successful with PhD students.

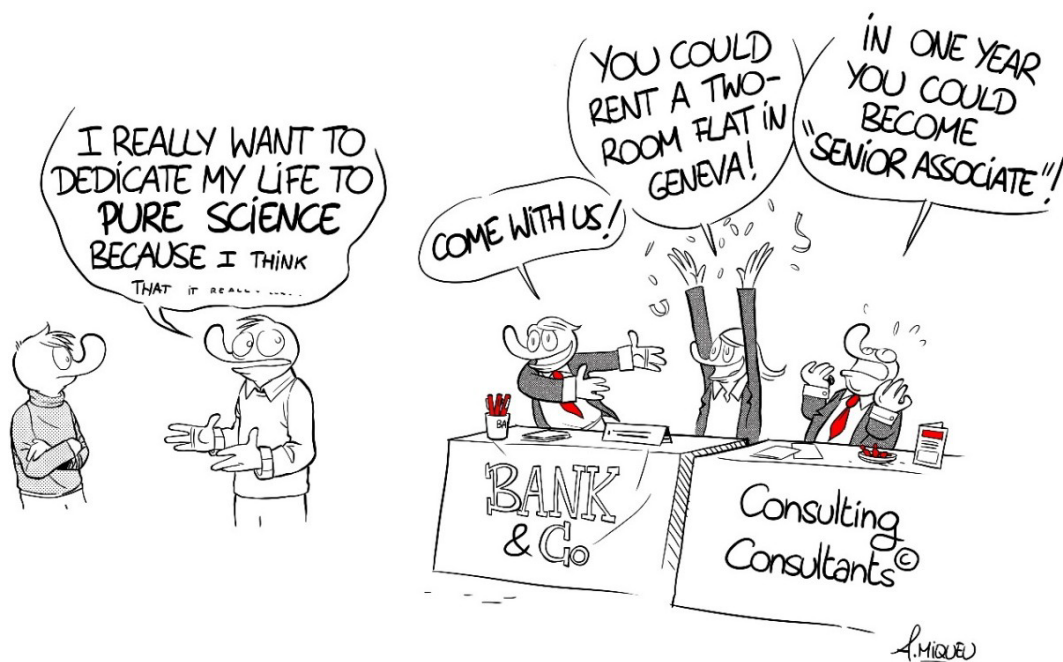
Additionally, students should be aware of the [EPFLinnovators](#) program, run by the Doctoral School and Research Office at EPFL. This fellowship program, co-funded by the EU, is designed to help (new) PhD students develop skills in innovation, business creation and tech transfer during their thesis. [EPFLglobalLeaders](#) is a similar program, but with training focused on leadership and sustainable development. The training courses (generally with ECTS) for programs are accessible to PhD students outside of the programs themselves. Students need to ask their thesis director for an agreement to follow these courses.

### Thesis director

PhD thesis directors are encouraged to support students who express more entrepreneurial mindsets, to incite them to look into the various frameworks listed above, and to allow them to develop their professional network.

## 3.2. Career development

PhD studies represent both a next step and a crossroads for a career. An individual may choose to develop their career towards fundamental research, innovation and technology transfer, industrial scale up applications, or a profession outside of their strict field of expertise. Studying at EPFL provides a unique opportunity to not only focus on the thesis work, but also to expand horizons and interest



### PhD Student

PhD students may find it useful to talk with other people in their research group or doctoral program for career advice. More senior colleagues can share their own experience and career tracks with the students, including their achievements, successes and disappointments. In particular, the PhD Thesis director and PhD student are advised to discuss career thoughts and perspectives in order to ensure that the thesis work and learning outcomes align with the PhD student's best abilities and interests.

Every year, EPFL holds a job fair called [Forum EPFL](#). This event is run by students and lasts for several days, giving companies and future graduates an opportunity to meet in a variety of ways. PhD students are also invited to attend and take part during Forum EPFL. They can upload their CV prior to the event so that it is made available for employers. In addition, EPFL Alumni runs a career mentoring program in association with Forum EPFL. We suggest contacting [EPFL Alumni](#), who can provide help and open up new opportunities based on their professional connections.



Students interested in technology transfer and intellectual property may check the [MINTT courses](#) or also attend the course "[introduction to intellectual property law](#)".

The EPFL Career Center holds a number of workshops and seminars that are specifically aimed at PhD students. It is also possible to schedule individual appointments to discuss career goals and development or to get help with your CV. For more information, please contact the [Career Center](#).

### Thesis director

The thesis director dedicates time to presenting and discussing the range of possible career opportunities for future doctoral graduates, including non-academic careers. They support and facilitate the acquisition of career specific competencies and experience during the PhD studies.<sup>7</sup>

## 3.3. EPFL Alumni

EPFL Alumni manages a worldwide network of over 35,000 alumni talents.

This network can be of great support and inspiration to PhD students during their studies and afterwards, once they graduate.

During their studies:

- they are welcome to participate in activities starting from their first year, including networking events, conferences and workshops, online, in Switzerland and abroad, as advertised on our website ([www.epflalumni.ch](http://www.epflalumni.ch)).
- they can join the LinkedIn private group in their 4<sup>th</sup> year.
- they can subscribe at any point in time to two mentoring programs:
  - “Young Talent Mentoring” <https://www.epflalumni.ch/fr/epfl-young-talents-mentoring-program/> which aims to connect students with an alumni mentor who can support them in their career related questions.
  - The “Startup Mentoring Program” <https://www.epflalumni.ch/fr/startups-mentoring-program/> for students creating their startup, enabling them to connect with alumni mentors who can help in the early stages.
- PhD student/alumni networking events are organised annually by Polydoc and EPFL Alumni in order to share their career path and inspire students.

Once they receive their diploma, PhD graduates will become official Alumni. They will be able to activate their account, granting them access to:

- A lifelong EPFL alumni email address and access to the EPFL Alumni directory
- Newsletters to stay connected with their school, invitations to events in their region, and a new magazine.

Furthermore, by subscribing to different membership levels, PhD graduates can benefit from services, rebates, exclusive access to resources such as the Online Library, career services and job opportunities, exclusive events and join local associations and clubs.

See <https://www.epflalumni.ch/benefits/>.

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<sup>7</sup> [LERU 2014:16](#) – Good Practice Elements in Doctoral Training.

## 4. Health – Equality – Diversity – Respect

While EPFL's student and work life is full of opportunities, it can also include challenging periods and overwhelming situations. In this chapter, we offer insight and contacts, with a key focus on respect in the broad sense.

### 4.1. Work-life balance and health

A good work-life balance is essential for a good health, both in the short- and long-term, and helps to improve wellbeing and productivity. It is well known that academics often struggle to take time for their personal life and leisure activities. Committed researchers can also find it difficult to limit their working hours; the work never stops, and they are often continually thinking about new ideas or approaches. However, it is important that we strive to find balance, and this is also something that should be considered and worked towards during your PhD studies. Polydoc, the EPFL PhD student's association provides [more information](#). See also the [individual support page](#), below.

The following link contains additional details about work-life balance, produced by the website [research retold](#).

**PhD student:** At EPFL, PhD students are entitled to 5 weeks (25 days) of holidays per calendar year. Holiday allowance will be assigned pro-rata for contracts that do not begin in January, with the remaining holiday entitlement assigned on Jan 1<sup>st</sup> of every year. PhD students are strongly advised to take all of their allocated holidays each year, in order to rest and recover before resuming their daily professional activities. If holidays accumulate, the PhD student is encouraged to adjust their plans in order to avoid any outstanding holiday balance at the end of their contract.

Before setting holidays dates (and take reservations!) especially consider:

- holidays cannot be taken during a period chosen by the student against the will of the thesis director (wrong practice)
- holidays must be discussed ahead of time with the thesis director and agreed upon (best practice)

In addition, depending on the laboratory habits and nature of the work, holidays might need to be agreed upon some weeks or months in advance.

**Thesis director:** Acting as a line manager, a thesis director is responsible for implementing a healthy work culture and encouraging a reasonable work-life balance. In particular, a thesis director should ensure that their employees take the majority (if not all) of their holidays in the current year and that research plans consider corresponding periods required for work-life balance. More information on holiday allowances and other leave is available [here](#).

Please check the section "Supervision" for more details on responsibilities, leadership and work culture.

## 4.2. Equality – Diversity – Respect

At EPFL, people from a wide range of cultural and academic backgrounds work and study together. Diversity is a strength. It requires an environment of mutual respect to allow the members of the EPFL community, individually and collectively, to achieve exceptional results.

### Equality and Diversity

EPFL does not tolerate any discrimination towards students and employees on grounds such as gender, sexual orientation, disability, colour of skin, social origin, religious affiliation, etc. EPFL encourages diversity and fosters a culture of inclusion. A key topic for EPFL is the active pursuit of advancements in gender balance in all areas of research, education and administration, as highlighted in [the ETH Domain's Gender Strategy](#) and the [Equal Opportunities Action Plan](#). At EPFL, this goal goes hand in hand with a wide understanding and an intersectional approach to diversity. This demands an enhanced awareness of existing inequalities, understanding mechanisms and impact of implicit biases as evidenced by research, as well as strong social skills and professional expertise from managers at all levels.

Promoting equality in scientific careers is an integral part of the policy of continued excellence implemented by EPFL. The [Equal Opportunities Office](#) implements a range of actions, such as mentoring and coaching programs, workshops and training opportunities with the aim of developing networks, the sharing of experiences and information, and raising awareness of equality issues. The Equal Opportunities Offices also offers counselling and advice in matters related to its mandate. For information, check the equality webpage. Include the EPFL WISH Foundation and its activities

### Respect

As a publicly funded institution, EPFL is endowed with a particular responsibility, both with regards to the principle of non-discrimination and in achieving progress for effective equality. By extension, this also holds true for all employees and in particular for those in management and decision-making positions.

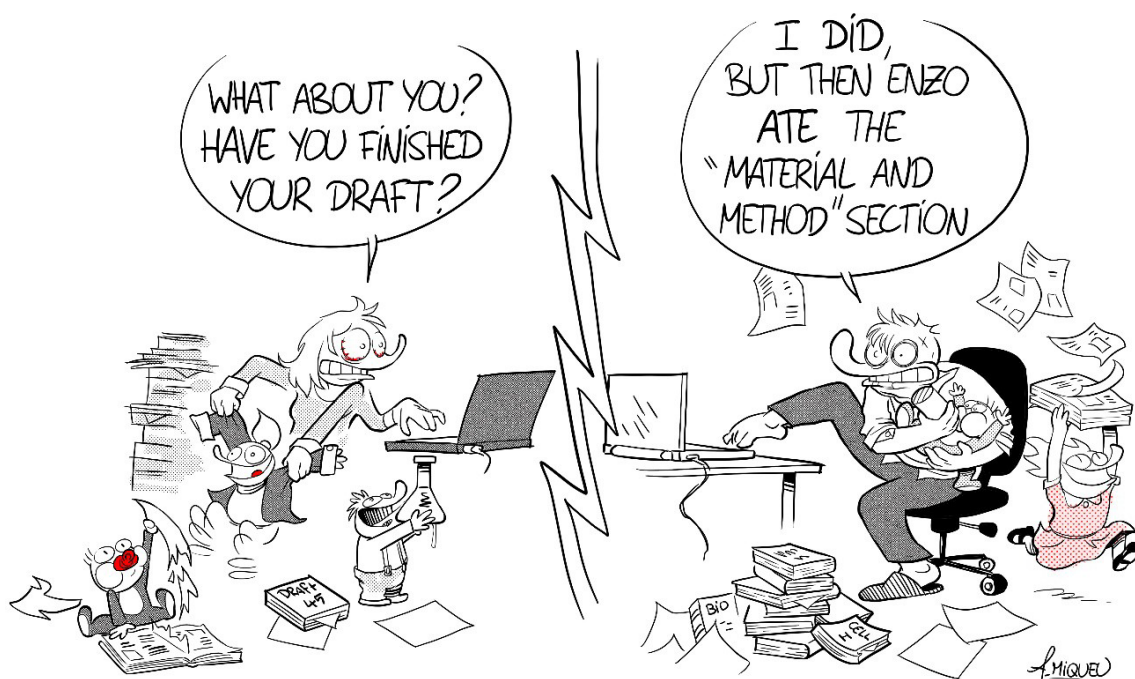
Everyone in the EPFL community must [respect](#) the personal integrity of their colleagues. Students and professors are expected to contribute, through their behavior and actions, to a motivating work atmosphere and a respectful team spirit.

Additional information is included below in the section “Harassment and bullying” and in the [EPFL Compliance Guide](#).

## 4.3. Parenthood

Juggling responsibilities as a PhD student and a parent can be a challenge! This is why EPFL is committed to providing working conditions that are compatible with parental responsibilities.

Current (and future) parents can find information and support for family work-life on the website below. This includes protection during pregnancy, maternity and paternity leave, family allowances, breastfeeding, childcare, parent networks, financial support for young scientist mothers travelling with a child, and flexibility arrangements for parents.



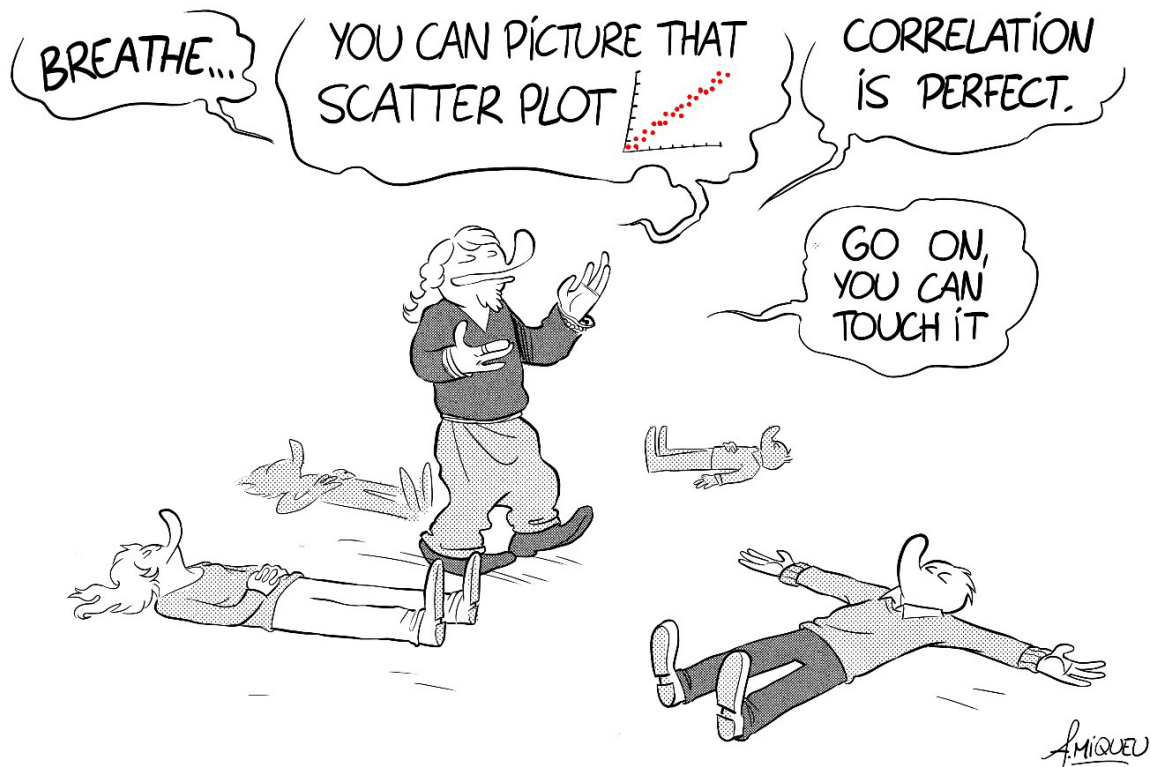
Find more about [family and work-life](#) here and about [studying with children here](#). Human Resources and the Equal Opportunities office also provide support and counselling.

### Thesis director

As a thesis supervisor, your leadership will be important in ensuring an environment that allows PhD students with parental responsibilities to strive and fulfil their academic potential. During maternity leave, the salary of your PhD student is paid via central funds. Deadlines and contracts of PhD students are adapted when requested from the Doctoral Program/School). HR and the Equal Opportunities Office can be contacted for further information

## 4.4. Counseling and wellbeing services

A PhD journey is not always straightforward. It can include phases with a significant amount of stress and the PhD student may find that at times their personal motivation varies. However, whilst some level of stress is acceptable, prolonged distress and anxiety due to stressful situations is not. If the PhD student has been feeling overworked or anxious for an extended period of time, they may want to, and are recommended to, talk about it.



The three main options are:

- a) **Speak to a member of your academic community:** thesis director, peers, colleagues, mentor, or your doctoral program (Director, PhD representative, or administrator). These people can try to understand your situation and provide guidance. For more information, see the webpage about [well-being](#) developed by PolyDoc and the Doctoral School.
- b) **EPFL provides consultation with social counselors.** The service includes a broad scope of individual support, coaching, counselling and wellbeing services (free of charge). To find out more, please go to [this page](#). To schedule an appointment, please visit [this page](#) or write to [consultation.sociale@epfl.ch](mailto:consultation.sociale@epfl.ch).
- c) **EPFL proposes a psychotherapeutic consultation for temporary medical support or in case of crisis.** This service is offered in English or French. The first consultation is free of charge. Additional consultations cost 200.- CHF per session. Certain health insurances may cover this cost (once the deductible amount that you have agreed with your insurance company has been covered). For more information and for making an appointment please go to [this page](#).

### Thesis director

It is important for the thesis director to be attentive to the PhD student's wellbeing, so that a possible need for counselling can be discussed and suggested. If the thesis director, or another colleague, think that a PhD student needs counselling then they must take responsibility and provide guidance. Please check the pages:

- <https://www.epfl.ch/education/studies/en/support-and-health/individual-support/>
- <https://www.epfl.ch/campus/security-safety/en/emergencies/>
- <https://www.epfl.ch/about/respect/>

## 4.5. Harassment and bullying

The PhD student or thesis director might not be sure of what exactly constitutes harassment and how to proceed if they or someone else is encountering harassment. They can learn more about harassment and EPFL's harassment policy [here](#).

If the PhD student feels they have been the victim of harassment or bullying, they are encouraged to contact the [EPFL Respect Unit](#). The sooner the person gets help, the better. More information about whom to contact and the procedure to follow is available [here](#). The process is described on [this page](#).

Talking about harassment and bullying to a professional is also important for your personal wellbeing. PhD students can seek consultation with a social worker (free of charge) or alternatively can receive psychological support during a psychotherapeutic consultation; more information [here](#).

The Respect Unit and the person in charge of receiving and handling complaints will be able to analyze the situation and case by case propose appropriate approach to find or facilitate a solution. For the PhD student, it might be proposed to search for a new PhD director.

The EPFL Direction has a zero-tolerance policy for situations of harassment, regardless of the status or position of the person accused of committing the acts. People responsible for psychological or sexual harassment will face consequences. These will depend on the severity of the situation and may range from censure to dismissal or exclusion. If you have been a witness to harassment or bullying, please visit [this page](#).



## 5. HR Related questions

EPFL is a public institution, ruled by federal personal law. The general legal framework for all categories of employees can be found via the following resources, in English:

- The pdf document, [here](#).
- The ETH board Human Resources website, [here](#).

### 5.1. Contracts for PhD

The majority of PhD students at EPFL are hired as employees on an “assistant-doctorant” contract. This means that they have a dual status of both employee and student. This status does not depend on the provenance of the funding (European Commission, SNSF, etc.). The job description of an “assistant-doctorant” includes both: (i) performing research related to the thesis; and (ii) participating in teaching, innovation, and educational activities.

Human Resources (HR) at EPFL are in charge of contract management. On behalf of the thesis director, the group/laboratory administrator is the contact person who maintains the link with HR for the group. PhD students can also contact HR directly at any time if they have questions or experience any problems.

#### 5.1.1. First year

A PhD student is initially enrolled on a 1-year contract, which includes a 3-month probationary period.

During these 3 months, both parties (the PhD candidate and the EPFL laboratory) can terminate the employment contract with one week of notice.

At the end of the year, the student has the candidacy exam. In case of failure of the exam, the PhD student has the possibility of repeating the exam once within 15 months after enrollment; in this case the contract must be renewed (again, a 1-year contract). If the 2<sup>nd</sup> attempt of the candidacy exam is not successful, the contract will be terminated after the exam.

As described in section 2.3 (PhD year one: from admission to the candidacy exam), if at the end of the first year the thesis director is not willing to continue the PhD supervision - independently of the candidacy exam's results – the PhD student is not admitted for thesis preparation and the contract will not be renewed.

#### 5.1.2. Post-candidacy exam

Following successful completion of the candidacy exam, the PhD student's employment contract is renewed on an annual basis. Only a lack of progress by the PhD student, established by the doctoral program and validated by the Doctoral School, can result in a non-renewal. The annual evaluations (annual reports) are an important element for establishing a lack of progress of the PhD candidate.

In case of non-renewal, the contract is terminated at the end of the month following the month in which written notice of termination was given.

#### 5.1.3. More about contracts

Additional details regarding employment contracts and the procedure for establishing and renewing contracts are available in:

- The [Ordinance and the Directive](#) on the doctorate at EPFL (Lex 2.4.0.1 and Lex 2.4.1).
- The [Directive on Terms of Employment of EPFL Assistants](#) of 1<sup>st</sup> October 2005, status as at 1<sup>st</sup> January 2017 (LEX 4.4.1).
- The [HR contract management process](#) (mainly for thesis directors and laboratory administrators).

## 5.2. PhD thesis duration

A PhD thesis at EPFL generally lasts for four years, full time. This may be extended for valid reasons, such as a delay in acquiring or analyzing the research data, maternity leave, or other justified absences. The extension request needs to be approved by the thesis director(s), the Doctoral Program Director, and the Doctoral School. All PhD students must be paid until their oral thesis examination (private defense). Depending on the project development and its continuation, the contract can, with the agreement of the thesis director, continue to run until the public defense.

## 5.3. About salary

EPFL has an official PhD salary scale in accordance with the EPF salary system. The salary scale is the same for all PhD students under contract with EPFL and all PhD students receive the same salary in the corresponding study year. If a PhD student receives a grant<sup>8</sup> smaller than the EPFL standard salary, it must be supplemented by funding provided by the laboratory so that the student receives the same EPFL gross salary. PhD students who have external contracts may have a somewhat different salary. More details about PhD contracts and salaries are available on [this page](#).

## 5.4. Fees

During the PhD admission and studies, students need to pay the following administrative fees (2020 figures):

- Registration fee: Students with a Master's degree from a foreign university: CHF 150; students with a Master's degree from a Swiss university: CHF 50. For students with a Master's degree from an EPF, EPFL does not charge any fee.
- Doctoral tax, to be paid once, prior to your oral thesis examination: CHF 1'500.

## 5.5. Benefits

PhD students have access to a number of employee benefits. They are included in the Swiss social insurance system. This includes the following benefits:

- Professional accident insurance (paid in full by EPFL); Non-professional accident insurance (one third of premium paid by EPFL for all employees working > 8 hours per week).
- EPFL supplemented family allowances (for employees working > 50 % of contract hours).
- [Pension scheme I](#) named AVS/AHV or OASI: Old-age and survivor's insurance.

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<sup>8</sup> Grant, for example: Swiss Government Excellence Scholarship, China Scholarship Council, European Grant, or any other grant.

- [Pension scheme II](#) (Publica – pension plans with 64 % employer/36 % employee contributions).
- More information about benefits available to PhD students is provided in **attachment 3**, "Benefits overview", at the end of this document, or on this [webpage](#). For information on general employment conditions, please see [this page](#).

## 5.6. Post-graduation stay in Switzerland and unemployment benefits

Once graduated, foreign nationals can obtain a residency permit for six months in order to look for a job in Switzerland that is consistent with their qualification.

Conditions:

- Providing a certifying letter from the EPFL confirming the end of study (official diploma isn't necessary)
- Having the necessary financial means
- Having suitable housing

More information can be found on EPFL's [Immigration formalities](#) webpage.

While you're looking for a job you may be eligible for unemployment benefits. To apply, you must have Swiss residency and work permits, and you need to have been employed for at least 12 months within the past two years, earning at least CHF 500 per month. You need to register with the regional unemployment office (ORP) where a case manager will provide support. It's best to do this as soon as you know that you'll be out of work – even if you'll still be working as part of the notice period employers are obliged to observe.

For more information you can contact the **Regional Employment Office (ORP)** corresponding to your commune of residence or visit the [official website of the state of Vaud](#).

This rule applies only to students who have completed their thesis. PhD students who stopped their thesis during the course of their studies are unfortunately not allowed to stay as their permit is linked to their student status.

## 5.7. Glossary HR

For more information about HR semantic in French, this [webpage](#) is useful.

## 6. Attachments

### Attachment 1a

Establishing a good relationship from the beginning. Follow-up [document for PhD students and supervisors](#). Adapted by Anne Lee.

#### Establishing a Good Relationship from the Beginning

*Supervisor and student can complete separately and then discuss.*

		1	2	3	4	5	
<b>DESIGN</b>							
1	It is the supervisors' responsibility to select the research topic						It is the student's responsibility to choose the research topic
2	The supervisor decides the appropriate theoretical framework						The student decides which theoretical framework or methodology they should use
<b>OWNERSHIP OF KNOWLEDGE</b>							
3	Supervisors need to have detailed knowledge of the research topic						Supervisors need a general knowledge of the research topic
4	The supervisor is the specialist						The student is the specialist
5	The supervisor is an authority figure						The supervisor is a colleague, acting as a sounding board
6	Supervisors should go with students to academic conferences						Students should attend academic conferences independently
7	The supervisor is responsible for ethics and the standard of the final thesis						The student is responsible for ethics and the standard of the final thesis
<b>TIMING</b>							
8	The supervisor should have a timetable in mind and ensure the student keeps to it						The student should create their own timetable for their research and monitor their own progress
9	Supervisors should arrange the appropriate number of meetings						Students should ask for meetings when they need them
10	The supervisor should initiate a discussion about the timing for submitting the final thesis						The student should initiate a discussion about the timing for submitting the final thesis
11	Students should always adhere to agreed deadlines						Agreed deadlines are guidelines rather than absolute targets
<b>WRITING AND FEEDBACK</b>							
12	Supervisors should correct style, grammar and spelling as well as content						Supervisors should only correct content, not grammar and spelling
13	Supervisors should encourage students to publish in academic journals before their thesis is submitted						Writing academic articles before submission takes too much time
14	Supervisors should make explicit how often they are willing to give written and/or oral feedback						Supervisors should give as much feedback as the student needs
15	The supervisor should assist in the writing of the thesis if the student has difficulties						The supervisor advises only, and leaves all decisions concerning content, format and style to the student
16	The supervisor should insist on reviewing drafts of every section of the thesis						It is up to the student to ask the supervisor to review drafts of the thesis
17	Students need fully honest feedback, even when it is very critical						Supervisors need to judge how much feedback to give

Adapted by Anne Lee ([www.drannelee.wordpress.com](http://www.drannelee.wordpress.com)) from various versions. See Kiley, M. & Cadman, K. (1997) Supervision Expectations adapted from work by Brown, G. & Atkins, M. (1988). Effective teaching in higher education. Methuen, London. 146-147



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## Attachment 1b

EPFL Doctoral School, The supervisory relationship: a tool for discussion.

See the document "The supervisory relationship: a tool for discussion" under this [weblink](#).

This document is intended to provide points for discussion during the initial meeting between thesis director and doctoral candidate. It is neither obligatory nor is it intended as a formal agreement. It should be taken as applicable within the norms and constraints of the discipline concerned.

The doctorate is a professional experience which develops high-level scientific skills as well as generic skills which are of value in employment in every socio-economic sector. It entails (1) the development and performance of an original and innovative research project, and (2) an individual program of higher education in support of a research project and the development of the doctoral candidate's professional abilities.

### *The doctoral candidate:*

1. **Takes responsibility** for his/her thesis. What are the expectations for, and limits to, the doctoral candidate's independence? What can he/she expect from the thesis director in terms of advice, guidance and overall supervision of the candidate's research, coursework and teaching activities?
2. Has the **primary objective** to submit a good thesis **on time**.
3. **Displays initiative** – the doctoral student drives the process and strives to understand the research area.
4. **Develops critical thinking** in order to assess his/her own work and results, as well as those of existing literature, in a critical and honest manner.
5. **Works constructively, productively and proactively** with the thesis director and colleagues to support good working relationships. The candidate endeavors to **help younger colleagues** by engaging them in discussions, demonstrations, or interacting with them socially.
6. Participates in **external forums** such as conferences, scientific journals, seminars and workshops. To what degree can the doctoral candidate expect to present their original research or publish a paper during the course of their degree? What are the disciplinary and other constraints on this process? What are the benefits to the candidate in engaging in this process? Will refereed and accepted papers be reviewed by examiners to assess the technical merits of the candidate's work?
7. **Keeps up with the literature** – by reviewing publications and conference proceedings.
8. Where applicable, keeps a **lab notebook** by maintaining a daily log book of his/her research activities. The lab notebook is intended for the candidate to track and report the progress of his/her research and to document possible inventions. To what extent are lab notebooks used in the research group? Where they are used, what are the expectations within the research group?
9. Informs him/herself of the EPFL **ethical guidelines** and the **scientific code of conduct** and follows them in all his/her activities while a doctoral candidate and in his/her future career.
10. **Is aware of safety** by taking the appropriate training courses and following the safety procedures for his/her research unit and for EPFL at all times.
11. Engages with dedication and enthusiasm in the **teaching activities** he/she is asked to perform, under the supervision of the thesis director or that of another professor or lecturer.
12. Manages his/her own career progression, including the setting of realistic career goals, the identification of own academic and transferable skills, and how best to improve them.

### *The thesis director:*

1. **Supports** the doctoral candidate, both intellectually and personally. To what extent will he/she guide, advise and oversee the research, coursework and teaching activities towards successful completion of the doctorate? What expectations and constraints does he/she have with regard to the encouragement of a constructive and productive working environment?
2. Supports the candidate's efforts to **outline** a viable project and initial work-plan for research and coursework over a four-year period, and ensures that the candidate has a clear idea of the common aims and objectives.
3. **Helps and guides the candidate** in accordance with his/her progress. To what extent will the candidate's working independence be encouraged? With what frequency and intensity can supervision be expected? How will this support modulate according to the candidate's confidence in his/her own abilities and research skills, and to enable independence and autonomy?
4. **Reviews the candidate's progress** at regular periods, including discussing with the candidate the requirements for definitive admission and for submission of the thesis.
5. **Is available** to meet with the candidate on a regular basis to discuss his/her work. What are the expectations and constraints with regard to discussions of research problems at relatively short notice? Who might be an appropriate substitute when the thesis director is not available?
6. Provides an **environment that encourages the candidate to develop his/her skills** – in scientific and engineering analysis, technical writing, oral presentation, teaching, problem definition, and critical literature reviews.
7. Where applicable, fosters the doctoral candidate's participation in **external forums** such as attendance or presentations at conferences, seminars and workshops, and publications in scientific journals. To what extent will the thesis director help the candidate prepare for such activities? What are the thesis director's expectations of the candidate in respect of the latter's participation in such forums?
8. Discusses with the candidate whether there is a need for a **thesis co-director**. In ordinary circumstances, the thesis co-director will work in collaboration with the thesis director to assure the candidate's day-to-day supervision and will be significantly involved in the preparation of the thesis. The thesis director will nevertheless retain overall responsibility for the candidate's supervision and the relevant administrative processes.
9. Ensures that the doctoral candidate has **adequate funding** for his/her research activities and that it meets EPFL standards.
10. **Reads the thesis** thoroughly, and makes constructive comments on both style and intellectual content.
11. Encourages the doctoral candidate to plan for his/her **future career** in academia or the private and public sectors, and supports the candidate in this endeavor within the scope of his/her abilities.



## Attachment 1c

### Research Plan – Suggested outline / EPFL / MB 27.10.2020

The research plan outlining the PhD research project, including goals, approach and method, type of work and a draft time frame. The research plan should contain the following points:

- 1 Introduction
- 2 PhD thesis
- 3 Goals
- 4 Methodology
- 5 Work performed
- 6 Research time plan
- 7 Publication and conference presentation expected
- 8 Infrastructure or software
- 9 Reference and literature
- 10 Appendix

The chapters listed below give a guideline but are non-binding. Their buildup and subchapters depend on the content of the research.

Give background and motivation for your work. Explain basic knowledge needed. Show its scientific or economic need.

- 1 PhD thesis  
Explain the main question you want to answer. Connect it with current state of research and show its importance in this context.
- 2 Goals  
Show what you want to achieve. Explain your contribution to the subject.
- 3 Methodology  
Specify methodology and techniques which will be used for your research: field work, laboratory work, modelling technique, interdisciplinary collaboration, etc.
- 4 Work performed  
Summarize the work done since the start of the PhD. Show interim results and questions.
- 5 Research time plan  
Give a detailed time plan. Show what work has to be done and when it will be completed. Include other responsibilities or obligations.
- 6 Publication and conference presentation expected  
Give an overview of subjects or steps of your work you intend to publish. Suggest some meetings or conferences you plan to attend in order to present your research.
- 7 Infrastructure or software  
Make a list of facilities or infrastructure, including software, you will need to complete your research. Explain how it is or will be made available.
- 8 Reference and literature  
List papers and other publications you have already cited in this Research Plan or which you have collected for further reading.
- 9 Appendix  
Add pictures, tables or other elements which are in direct connection with any of the previous chapters.

## Attachment 2

### Publication rules

This is an excerpt from the [EPFL Directive concerning research integrity and good scientific practice](#) (1<sup>st</sup> May 2009, status as at 9<sup>th</sup> September 2020, [LEX 3.3.2])

#### Article 11, Information for authors

1. In order to be considered as an author, a researcher must fulfil the following criteria:
  - have made an essential contribution to the planning, carrying out, evaluation and verification of the research work;
  - have participated in the writing of the manuscript;
  - and have approved the final version of the manuscript.
2. Other persons who have contributed to the study, but only partially fulfil the criteria in paragraph 1, must be acknowledged ("Acknowledgements"), but are not designated as authors.
3. A mere hierarchical, administrative or financial function in a research group and/or organisational support does not entitle anyone to acquire the title of author. Honorary authorship does not exist.
4. The question of the list and order of authors in a publication must be discussed and decided upon between all contributors as soon as possible.

## Attachment 3

### Benefits overview – [PhD-June 2020, essentials]

#### Working frame and social security

- Professional accident insurance.
- Non-professional accident insurance.
- EPFL supplemented family allowances (for employees working > 50 % of contract hours).
- EPFL pension fund is [Publica](#): with 64 % employer and 36 % employee contribution for saving and risk.
- Daycare facilities on main campus.
- Financial support for young mothers, check this [webpage](#).
- 5 weeks of annual leave (25 days).
- Scaled EPF salary system.

#### Mobility

- Free CFF Half Fare travelcard or a 15 % reduction on the price of an annual GA travelcard: [webpage](#).
- 15 % reduction on the purchase of a monthly or annual travelcard in the Cantons of Vaud, Neuchâtel and Valais (provided that the fare zone of the place of work is included).
- [Bike Center](#) on main campus to help with bike repair and purchase/resale.
- [PubliBike](#) available on campus.
- Reduced prices for annual subscriptions to [Mobility Car Sharing](#). Vehicles are also available on the campus.

#### Training

- [Staff Training Service \(SFP\)](#) catalogue containing both classroom-based and distance-learning courses.
- [French courses](#) for both EPFL staff and partners at the main campus. Additional language courses are also available.
- ...and numerous training opportunities!

#### Sports and culture

- Reduced rate for membership at the EPFL/UNIL Sports Centre.
- Access to a wide range of on- and off-campus cultural activities.

#### Various discounts and advantages

- Computer hardware and private laptop support and discount on equipment purchase: [Poseidon](#).

## 7. Bibliography and references

### 7.1. Legal documents / bases légales

- [Charter of Fundamental Rights of the European Union](#) of 3<sup>rd</sup> December 2000; see [French version](#).
- [Federal Constitution of the Swiss Confederation](#) of 18<sup>th</sup> April 1999 (status as at 1<sup>st</sup> January 2020) [101]; see [French version](#).
- [Convention de sauvegarde des droits de l'homme et des libertés fondamentales](#), entry into force in Switzerland 28<sup>th</sup> November 1974 [0.101]; document in French only.
- [Freedom of Information Act](#) (FOIA); document in English only.
- [Federal Act on Data Protection](#) of 19<sup>th</sup> June 1992 (status as at 1<sup>st</sup> March 2019) [235.1]; see [French version](#).
- [Federal Act on Freedom of Information in the Administration](#) (Freedom of Information Act, FoIA) of 17<sup>th</sup> December 2004, status as at 19<sup>th</sup> August 2014, [152.3]; see [French version](#).
- [Loi sur le personnel de la Confédération](#) of 24<sup>th</sup> March 2000 (status as at 1<sup>st</sup> January 2018) [172.220.1]; document in French only.
- [Personnel Law](#) of the ETH board (EPFL, ETHZ, PSI, EAWAG, EMPA, WSL); see [French version](#).
- [Ordinance on the doctorate conferred by the Ecole polytechnique fédérale de Lausanne](#) (Ordinance on the doctorate at EPFL) of 26<sup>th</sup> January 1998 (status as at 1<sup>st</sup> September 2019) [414.133.2]; see [French version](#).
- [Directive concerning doctoral studies at the Ecole Polytechnique fédérale de Lausanne](#) of 21<sup>st</sup> November 2005 (status as at 1<sup>st</sup> April 2020) [LEX 2.4.1]; see [French version](#).
- The [PhD program rules](#).
- [Doctoral School Course Books](#), organised by PhD program.

### 7.2. Literature

Stanford University's "[Stanford Doctoral Handbook](#)"

AVETH Board's "[Survival Guide](#)"

The University of Zurich's "[Best Practice for Doctoral Education](#)"

The Technical University of Denmark's "[PhD guide](#)"

### 7.3. Good practices from Universities networks

The European University Association (EUA)'s 2005 position paper, updated in 2010: "Doctoral Programmes for the European Knowledge Society"

- <https://eua.eu/issues/13:doctoral-education.html>
- <https://eua-cde.org/>

The European University Association (EUA)'s report: "Taking Salzburg Forward: Implementation and New Challenges"

- <https://eua-cde.org/reports-publications/51:doctoral-education-taking-salzburg-forward-implementation-and-new-challenges.html>
- <https://eua.eu/issues/13:doctoral-education.html>
- <https://eua.eu/resources/publications/615:salzburg-ii-%E2%80%93-recommendations.html>

League of European Research Universities (LERU)'s Advice Paper No. 15: "Good Practice Elements in Doctoral Training," January 2014

- <https://www.leru.org/files/Good-Practice-Elements-in-Doctoral-Training-Full-paper.pdf>
- <https://www.leru.org/publications/good-practice-elements-in-doctoral-training>

League of European Research Universities (LERU)'s "Doctoral degrees beyond 2010: Training talented researchers for society," March 2010

- <https://www.leru.org/files/Doctoral-Degrees-beyond-2010-Training-Talented-Researchers-for-Society-Full-paper.pdf>

## **7.4. References by topics**

### **7.4.1. Mentoring**

- How to Mentor Graduate Students: A Guide for Faculty  
<https://rackham.umich.edu/wp-content/uploads/2020/01/Fmentor.pdf>
- Graduate Student Mentoring Guide: A Guide for Students  
<https://rackham.umich.edu/wp-content/uploads/2019/07/mentoring.pdf>

### **7.4.2. Supervision**

- Establishing a Good Relationship from the Beginning, by Anne Lee  
<https://drannelee.wordpress.com/research-supervision/>

### **7.4.3. Work-life balance**

- Maintaining a work-personal life balance for academics  
<https://www.researchretold.com/maintaining-a-work-personal-life-balance-for-academics/>
- EPFL, Holidays and leaves  
<https://www.epfl.ch/campus/services/human-resources/en/employee-toolkit/holidays-and-leaves/>

### **7.4.4. Conflict resolution**

- 6 Steps to Conflict Resolution in the Workplace

<https://hrdailyadvisor.blr.com/2013/06/24/6-steps-to-conflict-resolution-in-the-workplace/>

- Dealing with the emotional aspect of conflict  
[https://www.health.harvard.edu/newsletter\\_article/Dealing\\_with\\_the\\_emotional\\_aspect\\_of\\_conflict](https://www.health.harvard.edu/newsletter_article/Dealing_with_the_emotional_aspect_of_conflict)
- The Smart Way to Respond to Negative Emotions at Work  
<https://sloanreview.mit.edu/article/the-smart-way-to-respond-to-negative-emotions-at-work/>
- The Five Steps to Conflict Resolution  
<https://www.amanet.org/articles/the-five-steps-to-conflict-resolution/>

#### **7.4.5. Authorship**

- Swiss Academies of Arts and Sciences: Guidelines and Recommendations  
<http://www.akademien-schweiz.ch/en/index/Publikationen/Archiv/Richtlinien-Empfehlungen.html>
- Swiss Academies of Arts and Sciences: Authorship in scientific publications  
[http://www.akademien-schweiz.ch/en/dms/E/Publications/Guidelines-and-Recommendations/integrity/Academies\\_Authorship.pdf](http://www.akademien-schweiz.ch/en/dms/E/Publications/Guidelines-and-Recommendations/integrity/Academies_Authorship.pdf)

#### **7.4.6. Open science**

- EPFL standards:  
<https://www.epfl.ch/research/open-science/>  
<https://www.epfl.ch/research/open-science/in-practice/open-access/>
- EUA recommendations:  
<https://eua-cde.org/the-doctoral-debate/145-empowering-doctoral-candidates-in-shaping-institutional-open-science-policy.html>

#### **7.4.7. Courses for Faculty**

- “Guest Expert Webinars & Multi-Week Courses”  
<https://www.facultydiversity.org/courses>
- “Free Reports”  
<https://www.facultyfocus.com/free-reports/>
- “About Faculty Focus”  
<https://www.facultyfocus.com/about/>
- “Preparing Future Faculty” program  
<https://cgsnet.org/preparing-future-faculty>



### 7.4.8. Careers and Future of doctoral studies

- Understanding PhD career pathways for program improvement, especially "How well did a STEM PhD train degree recipients for the career " Council of graduate schools, by Cathy Wendler, Brent Bridgeman, Ross Markle, Fred Cline, Nathan Bell, Patricia McAllister, and Julia Kent (2012).  
<https://cgsnet.org/understanding-career-pathways>
- "Pathways through graduate school and into careers" Council of Graduate Schools and Educational Testing Service (2012). Report from the Commission on Pathways: Princeton, NJ: Educational Testing Service.  
<http://pathwaysreport.org/>  
[http://pathwaysreport.org/rsc/pdf/19089\\_PathwaysRept\\_Links.pdf](http://pathwaysreport.org/rsc/pdf/19089_PathwaysRept_Links.pdf)
- "Ten breakthrough actions vital to our nation's prosperity and security", National Research Council (2012). Research Universities and the Future of America: Washington, DC: The National Academies Press.  
<https://doi.org/10.17226/13396>
- "Graduate STEM Education for the 21<sup>st</sup> Century" National Academies of Sciences, Engineering, and Medicine (2018). Washington, DC: The National Academies Press.  
<https://doi.org/10.17226/25038>

### 7.4.9. Well-being and mental health and doctoral studies

- "Graduate Student Mental Health and Well-being"  
<https://cgsnet.org/graduate-student-mental-health-and-well-being>
- "Being a PhD student shouldn't be bad for your health"  
<https://www.nature.com/articles/d41586-019-01492-0>
- "Understanding Negative and Toxic Leadership and How to Overcome It"  
<https://www.magnapubs.com/product/online-seminars/archived/understanding-negative-and-toxic-leadership-and-how-to-overcome-it/>

### 7.4.10. Human resources

- Human Resources Strategy for Researchers (HRS4R)  
<https://euraxess.ec.europa.eu/jobs/hrs4r>
- The European Charter & Code for Researchers  
<https://euraxess.ec.europa.eu/jobs/charter>

## 8. Translations

English	French
Dean	<i>Doyen</i>
Doctoral degree	<i>Doctorat</i>
Employment specifications	<i>Cahier des charges</i>
Enrolment	<i>Immatriculation</i>
Member of the thesis jury	<i>Rapporteur de thèse</i>
Oral thesis examination (closed committee)	<i>Examen oral</i>
PhD graduate	<i>Docteur ès Science</i>
PhD student or PhD candidate	<i>Doctorant</i>
Public thesis defense	<i>Soutenance publique de thèse</i>
Research assistant	<i>Assistant</i>
Research plan	<i>Plan de recherche</i>
School	<i>Faculté</i>
School of Life Sciences	<i>Faculté des sciences de la vie</i>
Student	<i>Étudiant</i>
Thesis director	<i>Directeur de thèse</i>
Unemployment insurance	<i>Assurance chômage</i>
Vice President for Education	<i>Vice-président pour l'Education</i>
Doctoral School	<i>Ecole doctorale</i>
Transcript of records	<i>Bulletin des notes</i>

## 9. Abbreviations

Abbreviation	Full text
MER	<i>Maître d'enseignement et de recherche</i>
BSc	Bachelor of Science
MSc	Master of Science
EDOC GE	The team who manages the doctoral school
CdH	College of Humanities
CdM	College of Management of Technology
ENAC	School of Architecture, Civil and Environmental Eng.
SB	School of Basic Sciences
STI	School of Engineering Sciences and Techniques
SV	School of Life Sciences
IC	School of Computer and Communication Sciences

## 10. Glossary – Keywords

EPFL also provides online glossaries (in French, English translation under discussion):

<a href="#">Research</a>	<a href="#">Innovation and technology transfer</a>	<a href="#">Education</a>	<a href="#">HR (Personnel)</a>
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