



2013-2014

Doctoral Handbook



École Doctorale « Sciences Pratiques »

N°285

**École Normale Supérieure de Cachan
61, avenue du Président Wilson
94235 Cachan**

<http://www.edsp.ens-cachan.fr>

Contents

<i>I/ Introductory remarks</i>	1
<i>II/ The doctorate: stakeholders and structures</i>	2
What is a doctorate?	2
The thesis – a single stage in a personal development and career plan	2
Thesis supervision and monitoring	3
PhDs under joint international supervision	4
The doctoral school	7
The library	8
Research laboratories and institutes	9
Thesis supervisors	10
<i>III/ Key figures</i>	15
PhD students registered at ENS Cachan by academic year and thesis defences	15
First-time registrations in PhD programmes at ENS Cachan by academic year and by gender	15
Registrations in PhD programmes in 2012 at ENS Cachan by discipline and by gender	15
The cost of doing a PhD	16
<i>IV/How to become a PhD student</i>	18
Doctorates: specialties	18
The status of PhD students	18
The doctoral contract	19
The CIFRE contract	20
Individual right to training (DIF)	25
<i>V/ Registration and Re-registration</i>	27
Pre-requisites	27
Administrative registration	27
Academic registration in the doctoral school	27
Self-assessment	28
Meeting with the thesis delegate	28
Appointment at the Doctoral School	28
Registration fees	28
<i>VI/Doctoral training</i>	29
Individual training plan	24
The PhD: a complete and original experience	24
PhD training routes	24
Agenda	25
PhD training – simple route	26

PhD training—DISE and CIVISE routes	27
Cross-training modules	28
Training in the PhD subject area	30
<i>VII/The PhD thesis defence</i>	32
PhD thesis defence procedure	32
Schedule and additional information	32
Phase 1 – collection of the file	32
Phase 2 – proposal of rapporteurs	32
Phase 3 – return of rapporteurs' reports	33
Phase 4 – proposal of the panel	33
Phase 5 – preparation of the defence	35
Phase 6 – the defence	36
Phase 7 – finalisation of the defence	37
Registration of theses and degrees	38
Thesis registration	38
Consulting databases	38
Degree certificates	39
<i>VIII/After the PhD</i>	40
Prospects after the PhD	40
Dedicated networks for PhD recruitment	40
Preparing for your future during your PhD studies	40
<i>Rencontres pour l'emploi des docteurs: PhD Career Workshop</i>	40
The first day of the new academic year at EDSP	41
Qualification for the role of assistant professor	41

BIBLIOGRAPHY

In drafting this handbook, we took inspiration from the handbooks of the University of Technology of Troyes and the University of Burgundy Franche Comté.

- Order of 7 August 2006 on doctoral training, NOR: MENS0602083A;
- Decree no 2009-464 of 23 April 2009 on PhD students under doctoral contracts, NOR: ESRH0908292D;
- "Thesis Charter" template adjoining the order of 3 September 1998 (<http://www.education.gouv.fr/bo/1998/36/sup.htm>).
- Order of 6 January 2005 on the joint international supervision of theses, NOR: MENS0402905A

I/ INTRODUCTORY REMARKS

If you hold a Master's qualification and as long as your academic career to date indicates an aptitude for research, you may register for a PhD programme that involves preparing a thesis in a university laboratory, a major research body or an industrial research laboratory. This research will culminate in you defending a thesis in front of a panel and being conferred a doctorate by the École Normale Supérieure de Cachan (ENS Cachan).

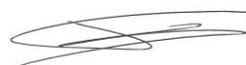
Students may only start work on a thesis once the thesis topic, doctoral supervisor (joint supervision possible), relevant research team (even if the thesis is completed outside ENS Cachan) and funding for the PhD student have been identified. The conditions for preparing a thesis are contained in a Thesis Charter, which sets out the procedures, duties and mutual obligations of all stakeholders involved in the preparation of a PhD student's thesis. This charter is signed by the PhD student, the thesis supervisor and the head of the student's research team, prior to the student's definitive registration in the programme.

The role of the doctoral school is to organise training of PhD students through research in line with the Thesis Charter. It oversees the monitoring of the entire thesis process, from development of the topic (selecting applicants, seeking funding), to university attendance (initial registration and re-registration), training for the PhD student, organisation of the thesis defence and ultimately the support of the new PhD graduate in the post-doctoral context. It makes young researchers aware of the need to develop career plans, provides support for integration into working life and is responsible for monitoring PhD graduate outcomes.

The aim of this handbook is to give you an overview of the organisation of our doctoral school and provide you with essential information for PhD study, whether the information sought is administrative, educational or relates to the organisation of research and support services for research activities at ENS Cachan. You are currently reading the first edition of the handbook. Please feel free to suggest ideas for its improvement so we can make this handbook the ultimate reference document for young researchers at ENS Cachan.

Isabelle Leray,

Head of the Doctoral School of Practical Sciences (EDSP)



II/ THE DOCTORATE: STAKEHOLDERS AND STRUCTURES

WHAT IS A DOCTORATE?

The doctorate is a professional research experience, which is officially recognised, following the thesis defence, by conferral of a PhD degree.

Students wishing to register for a doctorate must have been awarded a master's qualification (with dispensations for foreign students).

The main activity required by a doctorate is innovative research work supervised by a thesis supervisor within a research unit that belongs to a doctoral school and is accredited by the institution issuing the PhD degree. At the end of the process, the student writes a thesis, which essentially validates his/her scientific research work, the purpose of which has been to help develop and procure a body of knowledge. This professional experience can be put to good use in the public sector of higher education and research or indeed across the socio-economic spectrum. The PhD student, thesis supervisor, any joint supervisors, head of the relevant research unit and management of the doctoral school mutually commit to a set of procedures, rights, duties and mutual obligations by signing the Thesis Charter.

THE THESIS – A SINGLE STAGE IN A PERSONAL DEVELOPMENT AND CAREER PLAN

Working towards a thesis must be an integral part of a personal development and career plan that is clearly defined as to goals and requirements. Clarity is essential both in terms of the aims that need to be achieved and what needs to be implemented in order to achieve them. The thesis topic suggested by the thesis supervisor must underscore:

- the economic, industrial or social context that may underlie the thesis;
- the scientific context of the thesis;
- innovative aspects of the proposed line of enquiry and/or approach.

The thesis, as its title suggests, is the **PhD student's** point of view of the topic under examination. The student defends this thesis at an oral examination before a panel composed of experts in the subject area. This point of view must be firmly supported by a research approach and scientific findings obtained while working towards the thesis in the research laboratory.

The approach and findings must be debated and subject to scientific criticism as work on the thesis is ongoing (through seminars, symposia, conferences, articles) and not solely at the defence stage.

The originality of the thesis is an essential feature, which involves looking at the thesis in view of the national and international scientific context surrounding the topic. PhD students must therefore set out to familiarise themselves with this context (through seminars, conferences, articles) and clearly identify the innovative aspects of their work.

THESIS SUPERVISION AND MONITORING

Students register for PhD programmes at the **Doctoral School** of Practical Sciences with a view to being awarded a PhD degree by **ENS Cachan**. They are based at **research laboratories** where they carry out research work required for the preparation of their thesis. **Thesis supervisors** supervise the progress of this research work.

PhD programmes train students for **management roles** in the areas of research, development and innovation in public and private sectors. Thesis supervisors play a crucial role in this training, as they help PhD students work towards the independent management of scientific projects. With this in mind, PhD students must demonstrate their initiative and learn to work independently.

Working towards a thesis is training **through research**. Thesis directors help PhD students to apply strict working methods and implement a sound scientific approach in the development of the thesis topic.

Lastly, working towards a thesis is also training **in research**. PhD students, assisted by their thesis supervisors, must learn to establish an original scientific line of enquiry, and go on to devise and construct a relevant scientific approach in response to this. In this respect, the outlook chapter in the thesis manuscript is particularly revealing of the scientific maturity of the future PhD graduate.

The research laboratory is the place where the thesis is prepared; it is a workplace and forum for scientific exchange. Debate and exchange between researchers and PhD students, or indeed between PhD students, as well as involvement in seminars are all vital in acquiring a critical objective view of research work, in learning to explain and present research to an audience and, lastly, in staying motivated or becoming increasingly motivated over the course of the PhD programme.

The standard duration of a full-time PhD including the thesis defence is **three years**. Students are therefore required to register in the PhD programme three years in a row before being able to request authorisation for the thesis defence. A suspension may be granted, in certain cases, at the request of the PhD student (due to maternity, protracted illness, etc.) Extensions may be granted, exceptionally, by the **head of the institution**, at the request of the **head of the doctoral school**, subject to extra funding being obtained and the thesis supervisor and head of the host laboratory providing reasoned opinions. The dispensation request must therefore include the estimated thesis defence date.

PhD students must request to be registered in the PhD programme at the beginning of each academic year. The schedule of activities going forward must be discussed, in view of the progress of research work and the estimated thesis defence deadline, with the **thesis supervisor**, the **head of the research laboratory** and the **thesis delegate** for the discipline declared during initial registration in the PhD programme.

PhD students undertake to provide the doctoral school with a progress report of research outlining their scientific output through the thesis delegate for the relevant discipline at each registration in the PhD programme. This progress report will also be used in communications (EDSP website) and must therefore be directed at an audience of scientists not specialising in the thesis topic.

In the event of disagreement on the issue of registration, a mediation committee will be formed in the context of adversary proceedings to give its opinion on the PhD student's registration.

Furthermore, if a PhD student fails to comply with ethical standards for academic research or rules on safety in the laboratory, or if the student is in serious breach of the commitments undertaken under the Thesis Charter, his/her thesis may be terminated in the course of the year. The decision of whether or not to terminate the thesis is then taken by the mediation committee in the context of adversary proceedings.

PHDS UNDER JOINT INTERNATIONAL SUPERVISION

Jointly supervised PhDs are governed by an agreement signed between the president of ENS Cachan and his counterpart in the foreign university. The main terms for establishing a joint-supervision agreement can be found on the doctoral school's website under the heading "*procedure for establishing a joint-supervision agreement*":

<http://www.edsp.ens-cachan.fr/version-francaise/international/>

The agreement is established prior to the beginning of the PhD programme or during the first year of registration and specifies:

- the terms of registration;
- procedures for monitoring the thesis and doctoral training;
- social welfare for the PhD student;
- funding for the PhD student;
- the dates and duration of periods spent by the PhD student in the two countries;
- funding for mobility (of the PhD student, thesis supervisors and the panel);
- arrangements for the thesis defence (composition of the panel).

PhD degrees awarded under joint supervision are recognised in France and in the second country according to arrangements specified in the agreement. Following a single thesis-defence process, a student may be awarded a French PhD degree as well as the foreign equivalent. Authorisation for the thesis defence must be sought from the president of ENS Cachan and his counterpart in the second country (by Order of 6 January 2005).

Certain bodies offer financial support for the mobility of PhD students and researchers involved in preparing theses under joint supervision:

- European programmes: <http://cordis.europas.eu/fr/home.html>;
- Egide: <http://www.egide.asso.fr>;
- Campus France: <http://www.campusfrance.org>;

Assistance for establishing joint-supervision agreements is provided by the international relations department of ENS Cachan (SRI). ENS Cachan also funds a programme of grants for jointly supervised PhD students (see the SRI website: <http://www.ens-cachan.fr/international>)

THE DOCTORAL SCHOOL

The Doctoral School of Practical Sciences or EDSP (doctoral school no. 285) has approximately 300 PhD students on its books with 70 theses being defended each year. EDSP is a university-campus-based doctoral school, accredited by ENS Cachan, covering 8 different disciplines.

Around 15% of theses completed at EDSP are jointly supervised in association with foreign universities. All EDSP theses are financed through national or international public- or private-sector funding. The average length of PhD programmes is 3 years and 3 months.

CONTACTS

Head of the Doctoral School: Isabelle Leray, **Administrators:** Christine Rose and Sophie Garus

EDSP is located on the second floor (office 201) of the Laplace building on the Cachan Campus.

- Postal address: EDSP, ENS de Cachan, 61 avenue du Président Wilson, 94235 Cachan cedex, France
- Telephone: + 33 (0)1 47 40 75 77
- Fax: + 33 (0)1 47 40 75 78
- Email: secretariat@edsp.ens-cachan.fr
- Website: <http://www.edsp.ens-cachan.fr/>

The administrative office is open:

- 9.30am to 12pm and 2pm to 5pm, Monday to Thursday;
- closed Wednesday;
- 9.30am to 12pm and 2pm to 4pm, Friday.

ROLE AND OPERATIONS

EDSP is a place for training **by** and **in** research, based on ENS Cachan's research laboratories and teams. It provides PhD students with the means to prepare for a professional future in higher education and research or in socioeconomic sectors. EDSP, through the research areas of its laboratories, can offer a vast range of disciplines across four major sectors:

- mathematical science, physics, chemistry and their applications;
- life science and its applications;
- engineering science;
- human and social sciences.

EDSP is also a forum for exchange between disciplines, fostering a spirit of openness and encouraging professional development, with specific PhD career workshops (*Rencontres pour l'emploi des docteurs – RED*), public interest conferences and activities conducted in association with other graduate schools and research institutes, in particular under the banner of PRES UniverSud Paris.

The main task of EDSP is to make sure that work on theses is progressing well and ensure compliance with both the Thesis Charter and the good practices espoused by signatories of the charter. EDSP is also responsible for training PhD students and

monitoring progress on theses (in terms of duration, supervision, funding and the promotion of research) as well as helping PhD graduates to enter the workforce.

The following structures, in place in the doctoral school, are central to how it functions.

THE STEERING COMMITTEE

Composition: Doctoral school general management, four thesis delegate representatives and four PhD student representatives (members and alternates).

The steering committee meets periodically, based on the doctoral school's operational requirements, with a minimum of one meeting prior to each board meeting and to the general assembly. It ensures that the doctoral school is functioning efficiently, checks compliance with governing board decisions, reports any difficulties encountered on the ground and works out practical methods for implementing board decisions.

THE GOVERNING BOARD

Composition: ENS Cachan and doctoral school general management, one non-teaching staff member, eight representatives of the laboratories, seven figures from industry and from the scientific community and four PhD student representatives.

The governing board meets three times a year (following the meeting marking the new academic year, following the general assembly and following the panel meeting). It proposes the list of thesis supervisors and makes rulings on dispensations, puts in place training programmes, organises PhD career workshops (*Rencontres pour l'Emploi des Docteurs*), checks compliance with the Thesis Charter, outlines policy guidelines and sets out criteria for the award of doctoral contracts.

THESIS DELEGATES

Thesis delegates are appointed by the management of the doctoral school to monitor progress on theses being completed in each discipline.

At initial registration, thesis delegates check prerequisites for registration in the PhD programme (a Master's degree or equivalent, funding for a 36-month period and funding amount, thesis topic and supervisor, consistency of the individual learning plan with the thesis topic and career plan of the future PhD graduate). They inform PhD students of their rights and duties and specify the main ethical rules with which all students must comply.

At subsequent registrations, PhD students draw up a progress report on their work with the help of their thesis delegate; they also discuss how their thesis is going, talk about how it is being promoted through publications or their involvement in conferences and update their individual learning plan. Thesis delegates give rulings on students' registration in PhD programmes. In the event of particular difficulties, disagreements or indeed breaches with the commitments set out in the Thesis Charter, the PhD student, thesis supervisor or head of the relevant laboratory is advised to make immediate contact with the thesis delegate, who acts as mediator, and subsequently the doctoral school, in order to identify a solution that does not adversely affect any of the parties involved. If it transpires that a satisfactory solution cannot be found, a mediation committee appointed

by the director of the doctoral school in consultation with the thesis delegate will consider the matter.

Prior to the thesis defence, thesis delegates check that the proposed panel and external examiners are relevant to and consistent with the topic. They also check compliance with deadlines and ensure that the thesis defence file is compiled as required.

LIST OF THESIS DELEGATES BY SPECIALTY

ELECTRONICS, ELECTRICAL ENGINEERING, AUTOMATIC CONTROL ENGINEERING

COSTA François, Professor, SATIE

COMPUTER SCIENCE

DELAUNE Stéphanie, CNRS Research Assistant, LSV

MATHEMATICS

DESVILLETES Laurent, Professor, CMLA

MECHANICS, MECHANICAL ENGINEERING, CIVIL ENGINEERING

RAGUENEAU Frédéric, Professor, LMT

HUBERT Olivier, Professor, LMT

ECONOMIC AND MANAGEMENT SCIENCES

TAUGOURDEAU Emmanuelle, Research Officer, CES – Cachan

SCIENCE OF EDUCATION, LANGUAGES

ALBE Virginie, Professor, STEF

SOCIAL SCIENCE, PHILOSOPHY, HISTORY, POLITICAL SCIENCE

DIDRY Claude, CNRS Research Professor, IDHE

PHYSICS

DELEPORTE Emmanuelle, Professor, LPQM

LIFE AND HEALTH SCIENCES

AUCLAIR Christian, Professor, LBPA

CHEMISTRY

AUDEBERT Pierre, Professor, PPSM

THE LIBRARY

In studying for a PhD, PhD students need to develop their scientific literacy and keep up to date with the latest scientific developments in their thesis subject area. Registration in a PhD programme gives them access to the main library at ENS Cachan and the Durkheim Library.

THE MAIN LIBRARY

The main library at ENS Cachan, located on the ground floor of the D'Alembert building, offers unrestricted access to multidisciplinary scientific collections.

Also available are more general books and journals, which provide an insight into the latest scientific, political, economic, administrative and cultural developments.

The catalogue of all documentary resources on campus in addition to **databases** and **online periodicals** may be accessed through the library website via the following link:

<http://www.bibli.ens-cachan.fr>

The following resources are available to PhD students at the main library:

- 50,000 publications (30% in foreign languages);
- 1,100 hard-copy periodical titles, including **450 ongoing subscriptions**;
- access to over **12,000** online journal **titles**;
- **databases and electronic resources**;
- 5 reading rooms with 150 seats for studying;
- a “current affairs” area where users can improve their minds or relax;
- a multimedia room with 15 PC workstations offering unrestricted access;
- 2 card-operated photocopiers.

Each year a PhD training module is arranged at the library so that students can improve in and/or advance their understanding of the following functions:

- consulting bibliographic databases and using online resources;
- managing bibliographic resources using dedicated applications such as zotero, etc.;
- submitting scientific work and descriptions to online records;
- editorial processes (publishing articles, etc.);
- creating bibliometric indices, which are used for assessing research, strengths and biases.

THE DURKHEIM LIBRARY

The Durkheim Library was established through a desire to create a shared facility by pooling the collections of the social science laboratories at ENS Cachan – IDHE, ISP and STEF. It specialises in social science and is open to students at master’s level and above, PhD students, post-doctoral students, researchers and ENS Cachan staff members.

<http://www.bibli.ens-cachan.fr/version-francaise/bibliotheque-durkheim>

It currently has the following in its collections:

- 4,000 specialised publications in sociology, political science, economy, law and the science of education;
- 100 hard-copy journals (around 40 of which are ongoing subscriptions);
- 500 theses from the three laboratories that came together to form the library - IDHE, ISP and STEF.

The Durkheim Library has around 15 study desks and a PC workstation offering unrestricted access, which can be used to look up the online catalogue (the same catalogue as the main library) and to access all online journals and databases acquired by ENS Cachan.

RESEARCH LABORATORIES AND INSTITUTES

Each PhD student belongs to a laboratory where s/he prepares his/her thesis. The laboratory is a forum for scientific activity and exchange, which is essential in studying for a PhD.

PhD students must develop their scientific literacy and keep up to date with scientific developments in their thesis subject area. To this end, it is expected that PhD students should get actively involved in the various forms of scientific exchange promoted by their laboratories (including seminars, group meetings, scientific workshops and the PhD student club, etc.)

ENS Cachan is an extremely active research centre bringing together over 500 researchers and PhD students, working in 14 laboratories and 3 interdisciplinary research institutes at Cachan and Ker Lann campuses.

The laboratories organise several seminar series, which the doctoral school recognises as disciplinary modules for doctoral training. Interdisciplinary research institutes also arrange seminar series or workshops that count towards interdisciplinary training.

What follows is the list of laboratories and institutes that accept PhD students registered at EDSP for ENS Cachan PhD programmes.

FUNDAMENTAL SCIENCE LABORATORIES

- Mathematics: Centre for Mathematical Studies and their Applications (CMLA);
- Computer science: Specifications and Verification Laboratory (LSV);
- Physics: Quantum and Molecular Photonics Laboratory (LPQM);
- Chemistry: Supramolecular and Macromolecular Photophysics and Photochemistry (PPSM);
- Biochemistry, bioengineering: Laboratory of Biology and Applied Pharmacology (LBPA).

ENGINEERING SCIENCE LABORATORIES

- Energy and information systems: Systems and Applications of Information Technologies and Energy (SATIE);
- Mechanics and technology: Laboratory of Mechanics and Technology (LMT-Cachan);
- Automated production: Automated Production Research Laboratory (LURPA).

HUMAN AND SOCIAL SCIENCES LABORATORIES

- Political sociology, the sociology of law and public action, and sociology in political history: the Institute for Social Science of Politics (ISP-Cachan);
- Economic sociology, sociology of professional relations and sociology in economic history: Institutions and Historical Dynamics of Economics (IDHE-Cachan);
- Scientific and technological teaching methods: Science Technology Education Training (STEF);
- Economy: Sorbonne Centre for Economics (CES - Cachan).

INTERDISCIPLINARY RESEARCH INSTITUTES

- D'Alembert Institute: Applications of Lasers and Molecules to Biotechnologies and Telecommunications.
- Farman Institute: Mathematical Modelling, Simulation and Virtual Testing of Complex Physical Systems.

THESIS SUPERVISORS

WHO MAY SUPERVISE A THESIS?

Thesis supervisors and, more generally, individuals authorised to supervise theses belonging to the Doctoral School of Practical Sciences must undertake to only be a member of that one doctoral school – EDSP – and to comply with the Thesis Charter of the school.

All individuals who have an accreditation to supervise research and are members of research units under the auspices of ENS Cachan are automatically eligible to appear on EDSP's list of accredited research supervisors.

In order to feature on the list, individuals must go through the process of becoming a member of EDSP by drafting a letter of commitment (which is sufficient in most circumstances) or by submitting a request for dispensation in specific cases.

According to an EDSP governing board decision, thesis supervisors may only supervise a maximum of five PhD students at one time.

Dispensation may be granted by the EDSP governing board. In order for this to happen, the thesis supervisor must submit an application requesting dispensation, which specifies the grounds for the request and provides the governing board with sufficient material to assess whether the supervision of over five theses is possible without any of the parties (PhD students, thesis supervisor and any joint supervisors) being adversely affected either with regard to the preparation of theses or career prospects.

AN OVERVIEW OF EDSP THESIS SUPERVISORS

In 2013, there are 135 lecturer-researchers and researchers belonging to EDSP.

The average rate of supervision is 2.3 theses per supervisor. In calculating this figure, each thesis supervised or jointly supervised was counted as one, including, for theses under joint international supervision, years where PhD students were based abroad. The EDSP governing board granted **seven dispensations** in 2013 for supervisors to supervise over five theses at once.

Outside these cases, there are:

- 62 supervisors supervising a single thesis;
- 30 supervising two theses;
- 19 supervising three theses;
- 12 supervising four theses;
- And 9 supervising five theses.

What follows is the list of individuals accredited to supervise research (or similar) belonging to EDSP, categorised by specialty and laboratory.

CHEMISTRY: PPSM LABORATORY

- Audebert Pierre, Professor (ENS Cachan);
- Leray Isabelle, Research Professor (CNRS);
- Meallet-Renault Rachel, Assistant Professor (ENS Cachan);
- Miomandre Fabien, Assistant Professor (ENS Cachan);
- Nakatani Keitaro, Professor (ENS Cachan);
- Pansu Robert, Research Professor (CNRS);
- Xie Joanne, Professor (ENS Cachan).

ELECTRONICS, ELECTRICAL ENGINEERING, AUTOMATIC CONTROL ENGINEERING: LURPA LABORATORY

- Faure Jean-Marc, Professor (SUPMECA);
- Lesage Jean-Jacques, Professor (ENS Cachan).

ELECTRONICS, ELECTRICAL ENGINEERING, AUTOMATIC CONTROL ENGINEERING: SATIE LABORATORY

- Abou-Kandil Hisham, Professor (ENS Cachan);
- Ben Ahmed Hamid, Assistant Professor (ENS Cachan);
- Bourles Henri, Professor and Department Chair (CNAM);
- Costa François, Professor (Paris 12);
- Forster Philippe, Professor (Paris 10);
- Gabsi Mohamed, Professor (ENS Cachan);
- Geller Benoît, Assistant Professor (ENSTA-Paristech);
- Ginolhac Guillaume, Assistant Professor (IUT Ville d'Avray, Paris 10)
- Larzabal Pascal, Professor (ENS Cachan);
- Lefebvre Stéphane, Professor (CNAM);
- Le Pioufle Bruno, Professor (ENS Cachan);
- Lo Bue Martino, Research Officer (CNRS) - **dispensation**;
- Marinescu Bogdan, Associate Professor (ENS Cachan);
- Mazaleyrat Frédéric, Professor (ENS Cachan);
- Multon Bernard, Professor (ENS Cachan);
- Placko Dominique, Professor (ENS Cachan);
- Vasic Dejan, Assistant Professor (Univ. Cergy-Pontoise);
- Werts Martinus, Research Officer (CNRS).

ELECTRONICS, ELECTRICAL ENGINEERING, AUTOMATIC CONTROL ENGINEERING: IFFSTAR

- Khatir Zoubir, Research Professor (INRETS Versailles-Satory).

COMPUTER SCIENCE: LSV LABORATORY

- Abiteboul Serge, Research Professor (INRIA);
- Bidoit Michel, Research Professor (CNRS);
- Bouyer-Decitre Patricia, Research Professor (CNRS);
- Comon-Lundh Hubert, Professor (ENS Cachan);
- Delaune Stéphanie, Research Officer (CNRS);
- Demri Stéphane, Research Professor (CNRS);
- Doyen Laurent, Research Officer (CNRS);
- Finkel Alain, Professor (ENS Cachan);

- Fribourg Laurent, Research Professor (CNRS);
- Gastin Paul, Professor (ENS Cachan);
- Goubault-Larrecq Jean, Professor (ENS Cachan);
- Haar Stefan, Research Professor (INRIA);
- Haddad Serge, Professor (ENS Cachan);
- Kremer Steve, Research Officer (INRIA);
- Markey Nicolas, Research Officer (CNRS);
- Lozes Etienne, Assistant Professor (ENS Cachan) ;
- Schnoebelen Philippe, Research Professor (CNRS);
- Schwoon Stefan, Assistant Professor (ENS Cachan) – **dispensation**;
- Segoufin Luc, Research Professor (INRIA);
- Steel Graham, Research Officer (INRIA).

MATHEMATICAL STUDIES AND THEIR INTERACTIONS: CMLA LABORATORY

- Bouche Daniel, Research Professor (CEA) ;
- Buades Capo Antonio, Research Officer (CNRS) - **dispensation**;
- Desolneux Agnès, Research Professor (CNRS) ;
- Desvillettes Laurent, Professor (ENS Cachan, IUF);
- De Vuyst Florian, Professor (ENS Cachan);
- Dias Frédéric, Professor (ENS Cachan);
- Ghidaglia Jean-Michel, Professor (ENS Cachan);
- Morel Jean-Michel, Professor (ENS Cachan);
- Nikolova Mila, Research Professor (CNRS);
- Pascal Frédéric, Professor (ENS Cachan);
- Trouvé Alain, Professor (ENS Cachan);
- Vayatis Nicolas, Professor (ENS Cachan).

MATHEMATICAL STUDIES AND THEIR INTERACTIONS: LIENS LABORATORY

- Bach Francis, Research Professor (INRIA);
- Ponce Jean, Research Professor (INRIA).

LIFE AND HEALTH SCIENCES: LBPA LABORATORY

- Buckle Malcolm, Research Professor (CNRS) ;
- Deprez Eric, Research Officer (CNRS);
- Delelis Olivier, Research Officer (CNRS) ;
- Fossé Philippe, Research Officer (CNRS);
- Hartmann Brigitte, Research Professor (CNRS);
- Le Bret Marc, Research Professor (CNRS);
- Mauffret Olivier, Research Professor (CNRS);
- Rene Brigitte, Research Officer (CNRS);
- Perahia David, Research Professor (CNRS);
- Rimsky Sylvie, Research Professor (ENS Cachan);
- Tauc Patrick, Research Professor (CNRS) ;
- Tchertanov Luba, Research Professor (CNRS);
- Xi Xu-Guang, Research Professor (CNRS).

PHYSICS: DIAMOND SENSORS LABORATORY

- Arnault Jean-Charles, Doctor (CEA LIST).

PHYSICS: TRT LABORATORY

- Debuisschert Thierry, Research Engineer with accreditation to supervise research (Thalès Group).

PHYSICS: LAC LABORATORY

- Deleporte Emmanuelle, Professor (ENS Cachan);
- Lauret Jean-Sébastien, Assistant Professor (ENS Cachan)
- Roch Jean-François, Professor (ENS Cachan, IUF);
- Treussart François, Professor (ENS Cachan);

PHYSICS: LPQM LABORATORY

- Journet Bernard, Assistant Professor (ENS Cachan) – dispensation;
- Lai Ngoc Diep, Assistant Professor (ENS Cachan);
- Lebental Melanie, Assistant Professor (ENS Cachan) – dispensation ;
- Ledoux-Rak Isabelle, Professor (ENS Cachan);
- Palpant Bruno, Professor (Ecole Centrale);
- Zyss Joseph, Professor (ENS Cachan).

MECHANICS, MECHANICAL ENGINEERING, CIVIL ENGINEERING: LMT LABORATORY

- Allix Olivier, Professor (ENS Cachan);
- Benallal Ahmed, Research Professor (CNRS);
- Benboudjema Farid, Assistant Professor (ENS Cachan);
- Boucard Pierre-Alain, Professor (Paris 11);
- Champany Laurent, Professor (ENSAM)
- Chaouche Mohend, Research Professor (CNRS);
- Delaplace Arnaud, Research Officer (CNRS);
- Desmorat Rodrigue, Professor (ENS Cachan);
- Florentin Eric, Lecturer (ENS Cachan);
- Gatingt Fabrice, Professor (ENS Cachan);
- Gosselet Pierre, Research Officer (CNRS) – dispensation;
- Hild François, Research Professor (CNRS);
- Hubert_Olivier, Professor (ENS Cachan);
- Ibrahimbegovic Adnan, Professor (ENS Cachan);
- Ladeveze Pierre, Professor (ENS Cachan);
- Lamon Jacques, Research Professor (CNRS);
- Pommier Sylvie, Professor (ENS Cachan);
- Poncelet Pierre, Associate Professor (ENS Cachan) - **dispensation** ;
- Ragueneau Frédéric, Professor (ENS Cachan);
- Rey Christian, Professor (ENS Cachan);
- Roux Stéphane, Research Professor (CNRS);
- Schmitt Nicolas, Professor (Paris 12).

MECHANICS, MECHANICAL ENGINEERING, CIVIL ENGINEERING: LURPA LABORATORY

- Anselmetti Bernard, Professor (Paris 11);
- Lartigue Claire, Professor (Paris 11);
- Mathieu Luc, Professor (Paris 11);
- Tournier Christophe, Professor (ENS Cachan).

MECHANICS, MECHANICAL ENGINEERING, CIVIL ENGINEERING: LECBA LABORATORY

- Bary Benoît, Associate Professor (CEA DEN).

MECHANICS, MECHANICAL ENGINEERING, CIVIL ENGINEERING: LM2S LABORATORY

- Millard Alain, Research Engineer with accreditation to supervise research (CEA DEN).

ECONOMIC, MANAGEMENT AND LEGAL SCIENCES: CES CACHAN LAB.

- De Palma André, Professor (ENS Cachan) ;
- Drouhin Nicolas, Assistant Professor (ENS Cachan);
- Kempf Hubert, Professor (ENS Cachan, IUF);
- Pannequin François, Assistant Professor (ENS Cachan);
- Taugourdeau Emmanuelle, Research Officer (CNRS).

SCIENCE OF EDUCATION, LANGUAGES: STEF LABORATORY

- Albe Virginie, Professor (ENS Cachan);
- Bruillard Eric, Professor (ENS Cachan);
- Coquide Maryline, Professor (INRP);
- Fontaine Philippe, Professor (ENS Cachan) ;

SOCIOLOGY, HISTORY, PHILOSOPHY: IDHE LABORATORY

- Bessy Christian, Research Officer (CNRS);
- Didry Claude, Research Professor (CNRS);
- Zalio Pierre-Paul, Professor (ENS Cachan, IUF).

SOCIOLOGY, HISTORY, PHILOSOPHY: ISP LABORATORY

- Attal Frédéric, Assistant Professor (ENS Cachan) – dispensation;
- Bastard Benoît, Research Professor (CNRS);
- Commaille Jacques, Emeritus Professor (ENS Cachan);
- De Galembert Claire, Research Officer (CNRS) – dispensation ;
- Dumoulin Laurence, Research Officer (CNRS) ;
- Duran Patrice, Professor (ENS Cachan);
- Laborier Pascale, Professor (Paris 10) ;
- Wiewiorka Olivier, Professor (ENS Cachan, IUF).

III/ KEY FIGURES

PHD STUDENTS REGISTERED AT ENS CACHAN BY ACADEMIC YEAR AND THESIS DEFENCES

Year	Number of students registering	Number of thesis defences
2007 - 2008	249	50
2008 - 2009	283	72
2009 - 2010	292	54
2010 - 2011	300	72
2011 - 2012	326	90
2012 - 2013	310	---

FIRST-TIME REGISTRATIONS IN PHD PROGRAMMES AT ENS CACHAN BY ACADEMIC YEAR AND BY GENDER

Academic year	Men	Men	Women	Women	Total
2007 - 2008	55	74%	19	25%	94
2008 - 2009	67	70%	30	30%	97
2009 - 2010	59	71%	24	29%	83
2010 - 2011	55	64%	31	36%	86
2011 - 2012	48	69%	22	31%	70
2012 - 2013	48	63%	28	37%	76

REGISTRATIONS IN PHD PROGRAMMES IN 2012-2013 AT ENS CACHAN BY DISCIPLINE AND BY GENDER

Scientific thesis subject area	Number of registrations	
	Men	Women
Mathematical studies and their interactions	22	8
Physics	16	12
Chemistry	4	11
Biology, medicine, healthcare	3	7
Human and social sciences	27	28
Information and communication sciences and technologies	34	11
Engineering sciences	100	27
Total	206	104

THE COST OF DOING A PHD

Studying for a PhD is essentially a professional experience. PhD students are young researchers who, like any other researchers, help develop the institution's body of knowledge and contribute to its scientific output. What should and should not be taken into account in terms of the cost of doctoral studies may therefore be widely debated. The figures provided below are just an indicator and aim to help potential students gauge the financial investment required for a course of PhD study. Costs associated with doing a PhD can broadly be divided into five categories:

- financial support for the PhD student;
- the cost to a laboratory of taking on a PhD student;
- thesis supervision;
- doctoral training;
- costs associated with the scientific project;

The last category varies to great extent from one discipline to another, which is why no estimate has been provided here.

FINANCIAL SUPPORT FOR THE PHD STUDENT

For doctoral contracts funded by the French Ministry for Higher Education and Research, the cost of supporting a PhD student (gross billed amount) is around EUR 100,000 over three years.

For CIFRE contracts (agreements for industrial training through research), the cost is generally a little higher, being jointly funded by the company on one hand and the government on the other.

For grants, funding is EUR 30,000 on average, which is financed by the government in the PhD student's country of origin or by the French Ministry of Foreign Affairs. The grant should be above EUR 1000 PER MONTH during the whole duration of the preparation of the thesis.

THE COST TO THE LABORATORY OF TAKING ON A STUDENT

All researchers or lecturer-researchers working at ENS Cachan must be assigned a workstation and have access to ongoing subscriptions to scientific journals, to a telephone and the Internet, etc. Research activity involves a requirement for support in terms of the working hours put in by research support services (laboratories, doctoral school, international relations department, human resources department, the promotion of research, payroll, the management of the institution, etc.) All costs involved are taken into account through an environment factor of 0.8. The cost to the laboratory of taking on a PhD student can thus be estimated at EUR 80,000 over 3 years.

THESIS SUPERVISION

We can very broadly calculate that lecturer-researchers devote around half their research time to their 2.6 PhD students (institutional average). Taking account of the approximate average gross annual billed cost for a lecturer-researcher with a supervision accreditation at ENS Cachan, the cost of supervising research work can therefore be estimated at EUR 50,000 over 3 years.

DOCTORAL TRAINING

Each PhD student must take at least 2 doctoral training modules a year. Taking account of the amount lecturers are paid per hour and the fact that there is generally a limited number of students per group, the average cost is estimated at EUR 3,000 euros over 3 years.

DEPARTMENT FOR THE PROMOTION OF RESEARCH, INDUSTRIAL CONTRACTS AND EUROPEAN PROJECTS AT ENS CACHAN

ENS Cachan's department for the promotion of research (managed by Christian HAMON) provides assistance for setting up scientific projects (European projects, National Research Agency – ANR – projects, Single Interministerial Fund – FUI – projects, industrial contracts, etc.) The department helps researchers put together funding plans for their scientific projects and submit their proposals to funding bodies. The department subsequently deals with the issue of drawing up contracts between the parties, which is required for projects involving various stakeholders to run smoothly from an administrative, legal and financial point of view.

In addition, the service advises and supports potential inventors in protecting the findings of their research work.

A PhD training course in setting up projects is organised each year by the doctoral school, directed at PhD students aiming for careers as researchers or lecturer-researchers.

IV/ HOW TO BECOME A PHD STUDENT

DOCTORATES: SPECIALTIES

DEGREE TITLE

Doctorate - ENS Cachan Doctoral School of Practical Sciences Doctorate, Specialty (to be selected from the list below)

DOCTORATES IN THE AREAS OF SCIENCE, TECHNOLOGY AND HEALTHCARE

- Computer science specialty;
- Electronics, electrical engineering, automatic control engineering specialty;
- Mechanics, mechanic engineering, civil engineering specialty;
- Physical and chemical sciences specialty;
- Mathematics specialty;
- Life and health sciences specialty.

DOCTORATES IN THE AREAS OF HUMAN AND SOCIAL SCIENCES

- Economic, management and legal sciences specialty;
- Science of education, languages specialty;
- Social science, history, philosophy and art specialty.

THE STATUS OF PHD STUDENTS

There are 4 main categories of status for PhD students:

- student employed under public law to prepare a thesis (doctoral contract);
- student employed under private law to prepare a thesis (under a CIFRE contract or contract from a public institution with industrial and commercial interests, for example);
- student in receipt of a grant for the preparation of a thesis (a foreign government or embassy grant, etc.);
- student employed under public or private law to conduct an activity other than preparing a thesis, who is preparing a thesis alongside his/her usual activities;
- particular cases – retirees, for example.

All PhD students registered at ENS Cachan and monitored by EDSP must **prove they have funding** lasting 36 months for the preparation of their thesis or they must provide proof of their own resources if they are engaged in gainful employment outside the PhD programme. The amount of their income must exceed the full-time statutory minimum wage (known as the SMIC) for an employed PhD student and be above EUR 1000 for a PhD student in receipt of a grant.

The sources of funding of signed doctoral contracts may vary between PhD students registered at ENS Cachan and PhD students (the National Research Agency - ANR, European projects, doctoral contracts for ENS students, EDSP doctoral contracts and CNRS – the National Centre for Scientific Research – doctoral contracts, etc.) A PhD student registered in a PhD programme at ENS Cachan can also be employed by a company (under a CIFRE contract for example) or by a public institution with industrial and commercial interests (or EPIC).

THE DOCTORAL CONTRACT

THE DOCTORAL CONTRACT MAY SPECIFY THE FOLLOWING FOR PHD STUDENTS:

- research activities alone
- or
- research activities and additional duties, including higher education duties, duties relating to the dissemination of scientific and technological information, consultancy services provided to a company, regional authority, government department, public institution, association or foundation or indeed the promotion of findings from scientific and technical research.

These additional duties are to be completed on a yearly basis. They are accompanied by 7 days' applied training a year.

Please be aware

- studying under a doctoral contract (with or without additional duties) and concurrently drawing a salary for a related activity is not authorised where that activity can be grouped under one of the four categories of additional duties specified in the doctoral contract;
- trainee professors (ENS accredited) who carry out teaching duties while studying for a PhD can put those teaching hours towards the validation of their accreditation.

RIGHTS AND DUTIES ASSOCIATED WITH THE DOCTORAL CONTRACT

If, for the length of the PhD, you sign an employment contract with ENS Cachan, unless there is an exception, it will be a doctoral contract, whether funding is from ministerial sources (doctoral contracts specifically for ENS students issued by the Ministry for Higher Education and Research, EDSP-quota doctoral contracts issued by the Ministry for Higher Education and Research, etc.) or from another source (National Research Agency – ANR – contract, European contract, industrial chair, laboratories' own resources, etc.)

Please be aware that signing a doctoral contract means you become an employee of ENS Cachan. You will therefore be subject to the rights and duties of a non-established public employee. This involves, among other things:

- completing 1,607 hours of work a year;
- signing up to CPAM (the state health insurance board);
- being required to request a travel order in the event of professional travel outside the usual workplace (a conference, for example, or a meeting at a distance of over 20km from Cachan);
- declaring periods of sick leave or maternity leave to the human resources department;
- submitting a notice to terminate the contract (in the event of leaving the programme early);
- a ban on working at night at ENS Cachan premises (except in particular circumstances, in which case a request must be submitted to ENS Cachan);
- requesting authorisation for the simultaneous pursuit of any activity authorised under decree n°2007_ 658 of 2 May 2007, which may not be categorised as one of the additional duties outlined in the doctoral contract.

WHO MAY RECRUIT?

All public administrative institutions for higher education or research may recruit PhD students under a doctoral contract, including:

- public administrative institutions for higher education;
- public administrative institutions with a statutory remit of higher education or research;
- public scientific, cultural and professional institutions;
- public scientific and technological research institutions.

The main public scientific and technological research institutions include Cemagref, CNRS, INED, INRA, IRD, INRETS, INSERM, INRIA and LCPC.

Please be aware: certain institutions cannot recruit PhD students under doctoral contracts. Public institutions with industrial and commercial interests may not employ PhD students under doctoral contracts and neither can foundations or businesses.

The main public institutions with industrial and commercial interests include ADEME, ADIT, AFD, ANDRA, INA, INC, INERIS, RFF, VNF, SNCF, Ports autonomes, CNES, CEA, IFREMER, BRGM, ONF, ONERA, OPH, CIRAD, CSTB, IFP, UGAP, LNE and OSEO.

WHAT WILL YOU BE PAID?

Gross monthly remuneration under a doctoral contract must satisfy **minimum** gross monthly requirements of:

- **€1,684.93*** gross if you only work in research.
- **€2,024.70*** gross if you carry out additional activities – teaching for example.

**Figures for July 2010*

These amounts are indexed to fluctuations in the civil service index point.

REFERENCE MATERIAL

- **Decree of 23 April 2009** on PhD students under doctoral contracts;
- **Order of 23 April 2009** setting the remuneration of PhD students under doctoral contracts;
- **Circular of 24 June 2009** concerning the application of the provisions of the decree of 23 April 2009.

THE CIFRE CONTRACT

The CIFRE scheme (agreements for industrial training through research) was established to contribute to the process of innovation in French businesses, help increase their competitiveness, and encourage exchanges between public research laboratories and socio-economic sectors.

ROLE AND STATUS

The status of PhD students doing a thesis under a CIFRE agreement is that of employees of the business partner involved in the agreement. They are also registered for a thesis in a doctoral school and attached to a research laboratory in that institution.

The PhD student is employed full-time to carry out research in his/her thesis subject area. An article in the agreement addresses the amount of time spent on the business premises and in the research laboratory. Ideally, there should be an even split between the two.

PRE-REQUISITES

To be eligible for a CIFRE contract the candidate should:

- have a Master's qualification (a Master's degree from a school of engineering or commerce);
- not have been registered for a PhD for more than a year;
- not have been working in a company for more than a year;
- no conditions of nationality apply;
- no conditions of specialty apply.

INDIVIDUAL RIGHT TO training (DIF)

All employees, whether on permanent or fixed-term contracts, are entitled to an Individual Right to Training (DIF, *Droit Individuel à la Formation*) of **20 hours** annually, available to those on fixed-term contracts on a *pro rata temporis* basis from 4 months of service. This comes to 60 hours over the course of the PhD programme. Some industry-wide or company agreements specify more than 20 hours a year. The employee may accrue his/her right to training from one year to the next (up to a maximum of 120 hours). Each year, the employer must inform the employee in writing of his/her DIF entitlement.

The interdisciplinary PhD training required by EDSP is also **60 hours** over the course of a thesis (4 interdisciplinary modules of approximately 15 hours each). Training programmes undertaken in the context of PhD training (EDSP) are generally eligible for DIF, and training provided by the company may be recognised by EDSP (subject to proof). Training hours are thus not added together.

In addition to this general training, students must take a minimum of two scientific modules in the relevant discipline (seminar series, Master modules, thematic schools, etc.), and attend a PhD-graduate career information day.

V/ REGISTRATION AND RE-REGISTRATION

PRE-REQUISITES

A national Master's degree (or Master of Advanced Studies – DEA, *Diplôme d'Études Approfondies*) is required for registration in a PhD programme (Order of 7 August 2006 on doctoral training).

Dispensation from this requirement may be granted. An *ad hoc* committee (based in the host laboratory) must issue a certificate of equivalence to validate registration in the event of dispensation.

Details of registration procedures and the documentation required can be found on the Doctoral School's website below:

[HTTP://WWW.EDSP.ENS-CACHAN.FR/](http://www.edsp.ens-cachan.fr/)

Registration must be done at the beginning of the academic year **and repeated annually** (even under joint supervision).

ADMINISTRATIVE REGISTRATION

The first step in administrative registration is application to an accredited PhD programme through the **ENS Cachan central services web portal**.

This procedure allows you to enter all the information required by ENS Cachan central services. Among other things, administrative registration is required for:

- obtaining an ENS Cachan student number;
- entry in the ENS Cachan LDAP directory;
- access to the ENS Cachan intranet site;
- obtaining a student card;
- library access;
- applying for a university restaurant card.

Once administrative registration is complete (both application and pre-registration), you may proceed to academic registration.

ACADEMIC REGISTRATION IN THE DOCTORAL SCHOOL

This second step of registration allows you to set up an EDSP account, put together your scientific file for thesis monitoring, and register in the Doctoral School's database.

On completion of the second step, you should use the Doctoral School's online application – [HTTP://W3.EDSP.ENS-CACHAN.FR](http://w3.edsp.ens-cachan.fr) – to print your registration file and your individual training plan. These should be signed by the people involved in monitoring progress on your thesis (you, your thesis supervisor, your thesis delegate and the head of the laboratory).

SELF-ASSESSMENT

For re-registration, students must complete the annual online survey **on the progress of their thesis**. This feedback is required for the **statistical analysis** of problems

encountered by PhD students and/or their thesis supervisors, so that the Thesis Charter can be updated. The feedback also helps us to identify serious individual problems. PhD students are also asked to give feedback on each PhD course module completed. This survey allows us to develop the range of PhD course modules on offer from one year to the next year so that we can best meet the needs of PhD students.

MEETING WITH THE THESIS DELEGATE

You are required to arrange an annual meeting with your discipline's thesis delegate, in order to discuss the progress of your research, your research schedule up to thesis defence, and the promotion of your research (publications, conferences, etc.).

The thesis delegate will also advise you on drawing up an individual training plan that takes into account your formal education, your post-doctoral career plan and your thesis topic.

APPOINTMENT AT THE DOCTORAL SCHOOL

Registration at the doctoral school is done by appointment. A schedule is published on the doctoral school's website. If your name does not appear on this schedule (initial registration) or if the scheduled date does not suit, you should contact the doctoral school's administrative office **at least 2 days** prior to the appointment date to arrange an alternative date.

REGISTRATION FEES

Since the start of the 2009-2010 academic year, all PhD candidates without exception have paid annual registration fees. University fees are set each year by an order of ministers responsible for higher education and the budget. PhD registration fees are paid at the EDSP administrative office.

VI/ DOCTORAL TRAINING

INDIVIDUAL TRAINING PLAN

PhD students registered with the EDSP must prepare an individual training plan at the outset of the PhD programme. The purpose of this training plan is threefold:

- for the student to become immediately proficient in carrying out research and related tasks entrusted to him/her during the course of the programme;
- for the student to become scientifically literate in the thesis subject area;
- for the student to acquire skills in line with his/her post-doctoral career plans.

This plan is drawn up at initial registration for a PhD and can be updated at each subsequent registration. This is your responsibility. You will thus be pre-registered for annual training modules once you register for a PhD.

THE PHD: A COMPLETE AND ORIGINAL EXPERIENCE

A PhD is in itself a complete and original education experience. The personal and scientific education of a PhD student relies on the following elements:

- an individual training plan;
- a research project which enables:
 - training through and in research;
 - learning how to manage a scientific project;
 - teamwork in a research laboratory;
- placement in a research unit and involvement in any group activities;
- the development of scientific literacy through:
 - involvement in laboratory or institute seminars;
 - involvement in thematic schools;
 - involvement in conferences;
 - bibliographic research;
- training in communication and scientific exchange with a variety of audiences:
 - writing annual progress reports;
 - presenting research at seminars;
 - presenting research at conferences;
 - pre-defence and defence of the thesis;
 - writing the thesis dissertation.

PHD TRAINING ROUTES

Depending on the activities of the PhD student over the course of his/her PhD, three routes are available.

- Simple route: this route is designed for PhD students who, during the course of their PhD, work solely on their theses.
- DISE route: this route is designed for PhD students who, while working on their thesis, perform an additional role in teaching and/or disseminating scientific and technological information.

- CIVISE route: this route is designed for PhD students who, while working on their thesis, perform an additional role in providing expertise or promoting findings from scientific and technological research.

If the student's route changes during the course of his/her PhD studies, or if s/he carries out part of his/her thesis work at ENS Cachan and another part abroad (in the case of joint supervision for example), his/her training commitments are set out annually according to his/her activities during each year of the PhD.

INDIVIDUAL TRAINING PLAN

The individual training plan, i.e. the list of modules the PhD student will take over the course of the PhD, are to be drawn up by the student in consultation with

- his/her PhD supervisor;
- the thesis delegate for his/her discipline;
- the head of the department in which s/he performs an additional role, where applicable.

The PhD student's training plan must be consistent with

- his/her research tasks;
- his/her additional duties, where applicable;
- with his/her post-doctoral career plans.

The individual training plan must be drawn up at initial registration for the PhD programme, and may be updated annually at each subsequent registration. This plan must be signed and dated, and serves as a pre-registration for the training modules for that academic year.

ADDITIONAL ROLES

Additional roles that may be entrusted to PhD students on **doctoral contracts** are determined annually by the head of the university. When applying for an additional role, the PhD student must draw up an **annual training plan** for that role. Obviously, this plan must be consistent with the individual training plan.

After the first year, the committee responsible for allocating additional roles gives an opinion as to whether the student should continue in the role for the remainder of his/her course of study. This opinion is based on an assessment of the PhD student's performance in his/her role.

AGENDA

The training agenda is published on the Doctoral School's website, in the Thesis, Doctoral training, and Schedule section.

You may also subscribe to the EDSP news **RSS feed** to receive dates for the modules by email or text message.

PHD TRAINING – SIMPLE ROUTE

PHD STUDENTS TAKING THIS ROUTE

Students who do not undertake any additional duties outside their research role during the course of their thesis.

THE RELEVANT PHD CURRICULUM

The standard curriculum for PhD students at EDSP, while working on their thesis, consists of the following four components:

- participation in a PhD career information day;
- involvement in coordinating EDSP or laboratory events;
- **Participation in two training modules in each year** of study, including:
 - general training outside the main thesis subject area (a minimum of **four** modules over three years);
 - additional scientific training in the thesis subject area (a minimum of **two** modules over three years).

NB: *the number of doctoral training days is adjusted to correspond to the Individual Right to Training outlined in the French labour code. Be aware that if you are subject to a CIFRE contract, some sectors of industry specify over 20 hours of training per year.*

ADDITIONAL SCIENTIFIC TRAINING

The student completes additional training in his/her PhD subject area.

This training, which complements the student's Master's training, comprises a minimum of two modules, each representing approximately 30 hours of classes and individual study. These modules are equivalent to Master's level classes, and may be taken as part of Master's programmes at ENS Cachan or other institutions with the permission of the doctoral school. Training provided by thematic schools relating to the PhD student's research subject may also be recognised. Seminar series in laboratories or institutes are also recognised.

PhD students who are gainfully employed while completing their PhD (lecturers, assistant lecturers, engineers, high-school teachers) may be exempt from this requirement.

ATTENDANCE AT THE PHD CAREER WORKSHOP

Attendance at the PhD career workshop *Rencontres pour l'emploi des docteurs* (RED), which is held every second year in November, prepares PhD students for their future entry into the workplace. Attendance at other PhD career information days is also recognised.

A GENERAL, MULTIDISCIPLINARY EDUCATION

During their studies, PhD students benefit from general training beyond the confines of their PhD subject area, providing them with insight into inter-disciplinary topics and enhancing their career prospects after graduation.

This training involves taking at least four general modules, selected from the range of courses offered by EDSP or other doctoral schools.

Involvement in EDSP or laboratory events can refer to a wide range of activities, such as organising the PhD career workshop, helping to organise PhD student day-long events, attending general assemblies or meetings marking the new academic year, representing PhD students at governing board meetings and helping to structure certain modules, etc.

PHD TRAINING—DISE AND CIVISE ROUTES

PHD STUDENTS TAKING THESE ROUTES

PhD students who intend to pursue a career in higher education and research following graduation, and PhD students on doctoral contracts, who carry out the following duties on an annual basis in addition to their main research role:

- service as a member of a teaching staff, not exceeding 64 contact hours;
- or a role in disseminating scientific and technological information, for a length of time not exceeding 32 days;
- a role providing expertise to a company, local authority, government department, public institution, association or foundation, for a length of time not exceeding 32 days;
- or a role promoting and developing findings from scientific and technological research, for a length of time not exceeding 32 days;
- or a combination of the above roles.

THE RELEVANT PHD CURRICULUM

For PhD students on doctoral contracts who carry out additional duties, training requirements are as follows:

- participation in a PhD career information day;
- involvement in EDSP or laboratory events;
- **participation in three** training modules in each year of study (i.e. 23 days' training over the course of the PhD, or 9 modules of at least 15 hours), including:
 - training relating to the PhD student's additional role (a minimum of 7 modules over three years);
 - additional scientific training in the thesis subject area (a maximum of 2 training modules).

NB: *the number of hours of doctoral training is set by the government decree on the application of doctoral contracts and not by an EDSP ruling.*

AIMS OF THESE ROUTES

Training is structured over the course of the PhD, i.e. over three years.

- The aim of the **first year** is to ensure that PhD students become immediately **proficient in carrying out** the additional duties contractually assigned to them.
- The aim of the **second year** is to provide PhD students with or help them build on methods for **devising, designing, and developing** new educational activities, activities for the dissemination scientific information, research projects or scientific and technological innovation projects.
- The goal of the **third year** is to provide PhD students with or help them build on methods for **educational teamwork** or **networking**, and more generally help them

understand how professional **groups** operate (groups of students or researchers, etc.), and prepare them for **work place entry**.

CROSS-TRAINING MODULES

Below, you will find the list of cross-training modules offered by EDSP. The modules are divided into three levels (for the first, second and third years of the PhD) and two categories (DISE and CIVISE). It is advisable to keep these divisions in mind when drawing up your individual training plan; however, they are **only guidelines**. You are required to draw up an individual training plan that is in keeping with your formal education, the training you need to complete your thesis or carry out the additional duties assigned to you, and your post-doctoral career plans.

The outline of each course and its objectives, duration and content may be viewed on the Doctoral School's website. You may also read feedback from PhD students who have already taken these courses at the following link:

[HTTP://WWW.EDSP.ENS-CACHAN.FR/VERSION-FRANCAISE/THESES/LA-FORMATION-DOCTORALE/LISTE-DES-MODULES-TRANSVERSAUX/](http://www.edsp.ens-cachan.fr/version-francaise/theses/la-formation-doctorale/liste-des-modules-transversaux/)

PhD students with additional teaching duties may choose **DISE**-type modules or those offered by the Paris-Montagne association on scientific mediation. Students with a role in the promotion of research may choose **CIVISE**-type modules, or you may register for modules offered by the École Centrale Paris, with whom we have a partnership. You may also register for joint CSIS Doctoral School modules (the Colleges of Engineering and Systems Science, including Centrale Paris, Supélec, ENS Cachan, Université Paris-Sud II and Université de Versailles-Saint-Quentin-en-Yvelines).

You may take training offered by a variety of organisations. However, you must first confirm with EDSP management that such modules can be recognised and potentially financed. For example, there is an agreement in place with the Collège de France.

In addition to this training, you must undertake advanced scientific training in your thesis subject area and take part in a PhD careers information day.

DISE-TYPE MODULES, LEVEL 1

- Applied training in practical teaching of Chemistry and Biochemistry.
- Applied training in practical teaching of Engineering Science (Mechanics and Automatic Control Engineering).
- Applied training in practical teaching of Physics (Physics and Electronics).
- Learning how to teach: the basics for a novice teacher.
- Applied training in oral instruction through English.
- Use of the Moodle platform for blended or distance training.
- Writing workshop for PhD students: writing a scientific document.
- French as a Foreign Language.

DISE-TYPE MODULES, LEVELS 2 & 3

- Presenting research in English at a symposium.
- Writing a scientific article in English: rules, style and vocabulary.
- Workshops on scientific reading and writing: techniques for reading and note-taking.
- Training in public speaking (French language).

- Learning to teach: the profession in practice, and the knowledge and skills useful to the teacher.
- Learning to teach: cognitive analysis of emotions.
- Learning to teach: cognitive analysis of memory.
- Learning to teach: educational enquiry.
- Finding and publishing information on the Internet.
- Library: the science and electronic dissemination of knowledge.
- Writing your thesis: from disordered ideas to structured text.
- France's research landscape.

CIVISE-TYPE MODULES, LEVEL I

- Writing workshop for PhD students: writing a scientific document.
- Designing a website.
- Dynamic websites and databases.
- Optical methods and scanning microscopy.
- Field measurements by digital image analysis.
- C++ for digital analysis.
- French as a Foreign Language.

CIVISE-TYPE MODULES, LEVELS 2 & 3

- Training in the duties and practices of scientific consultancy.
- Finding out about and understanding how innovative businesses operate.
- The Island Game: an introduction to economic mechanisms.
- Workshops on scientific reading and writing: techniques for reading and note-taking.
- Library: the science and electronic dissemination of knowledge.
- OOP (Object-oriented Programming): basics, uses and practical examples.
- The practice of negotiation.
- The European Union, from economic dynamics to institutional structures.
- France's Research Landscape.
- Setting up collaborative research projects (National Research Agency, Single Interministerial Fund and European projects).

WORKPLACE ENTRY

- Preparation for the TOEIC (Test of English for International Communication).
- PhD graduates: an effective job search is possible.
- Preparing for an interview for the posts of Assistant Professor and Research Officer at CNRS.

OTHER MODULES

- Learning Days (Journées Apprentissage)
- Training in scientific mediation by the Paris Montagne association.
- DFE series: entrepreneurial France uncovered (4 modules).

MODULES OFFERED BY THE ÉCOLE CENTRALE PARIS (ECP)

- PhD training modules on **“how to supervise a research project,”** and **“how to embark on and promote ground-breaking research,”** offered by ECP are open to ENS Cachan PhD students.

- You may also participate in Cafés des Sciences, a series of scientific debates organised by the ECP Doctoral School, which are held on Thursdays from 1pm to 2pm.

TRAINING IN THE PHD SUBJECT AREA

There is a wide variety of activities, which may be recognised as doctoral training modules in the PhD subject area, including:

- seminar series;
- thematic schools;
- second-year Master's modules;
- PhD-level scientific debate clubs.

Other types of scientific training may also be eligible, subject to the prior agreement of EDSP management.

In all cases, a **certificate** detailing the type of training taken, the number of hours completed, and the dates or duration must be supplied for the training to be recognised.

THE VARIOUS TYPES OF DISCIPLINARY TRAINING

EXAMPLES OF INTERDISCIPLINARY MODULES

- Day-long events and seminars at the Farman Institute.
- Day-long events and seminars at the D'Alembert Institute.

EXAMPLES OF THEMATIC SCHOOLS

- CNRS thematic schools,
- EDF-CEA-INRIA thematic schools,

EXAMPLES OF DISCIPLINARY MODULES IN PHYSICS

- École d'Aquitaine Ondes et Matière (Aquitaine School of Waves and Matter).

EXAMPLES OF DISCIPLINARY MODULES IN MECHANICS

- Modules from the Master's programme in Materials and Science Engineering,
- Modules from the Master's programme in Advanced Techniques in Structural Design,
- Modules from the Master's programme in European Civil Engineering,
- Seminar series held by the LMT (Laboratory of Mechanics and Technology),
- Journal Club,
- CISM (the International Centre for Mechanical Sciences) courses,
- MECAMAT (French Association for Material Mechanics) thematic schools.

EXAMPLES OF DISCIPLINARY MODULES IN COMPUTER SCIENCE

- Spring school in Theoretical Computing.
- Marktoberdorf summer school.
- MOVEP (Modelling and Verifying Parallel Processes) summer school.
- European Summer School in Logic, Language and Information.

EXAMPLES OF DISCIPLINARY MODULES IN THE SCIENCE OF EDUCATION

- ESERA Summer School.
- Day-long events for PhD students held by ARDiST (Association for Research on the Didactics of Science and Technology).

- Seminar series held by STEF.
- Meetings for young researchers in technology-enhanced learning.

EXAMPLES OF DISCIPLINARY MODULES IN SOCIOLOGY

- Seminar series for PhD students studying Institutions and Historical Dynamics of Economics.

VII/THE PHD THESIS DEFENCE

PHD THESIS DEFENCE PROCEDURE

There are several steps involved in the PhD thesis defence procedure, which takes a minimum of two months. Details can be found on the EDSP website. Official texts can be viewed on the LegiFrance website. Do not hesitate to contact EDSP if you have any questions about thesis defence.

SCHEDULE AND ADDITIONAL INFORMATION

The anticipated date for the defence (**D day**) must be agreed as soon as possible with the members of the panel and the rapporteurs you have proposed. The timescales proposed below are based on **minimum** recommendations.

- D - 2 months: collection of defence file (phase 1)
- D - 8 weeks: proposal of rapporteurs (phase 2)
- D - 4 weeks: return of rapporteurs' reports (phase 3)
- D - 3 weeks: panel proposal (phase 4)
- D - 2 weeks: preparation of the defence (phase 5)
- D: the defence (phase 6)
- D + 2 weeks: finalisation of the defence (phase 7)
- Collection of PhD degree

PHASE 1 – COLLECTION OF THE FILE

At least **two months** before the anticipated date of defence, you must collect a defence file from the doctoral school's (EDSP) administrative office. This file is a beige cardboard folder containing forms to be completed in hard copy.

This file will be given to you only when the following checks have been completed:

- checking that the thesis dissertation has been completed;
- checking that you have taken part in the PhD Career Workshop *Rencontres pour l'emploi des docteurs*(RED) or equivalent;
- Checking the recognition of compulsory PhD training modules (*6 modules for most students, 9 modules for those with additional duties, and PhD career information day*).

You must then connect to the online defence application through your EDSP account for completion of the subsequent phases, which include completing panel and rapporteur proposals, and filling out the thesis registration form and defence advertisement form.

PHASE 2 – PROPOSAL OF RAPPORTEURS

The first phase of this procedure involves completing a rapporteur proposal online (<http://w3.edsp.ens-cachan.fr>). The proposal is signed by the thesis supervisor and thesis delegate for the discipline.

Rapporteurs must meet the following conditions:

- have an accreditation to supervise research (or equivalent);
- not be involved in any way in work on the thesis;

- not be members of the institution where the PhD student is registered for a PhD (ENS-Cachan);
- be external to the Doctoral School where the PhD student has completed the thesis (EDSP);
- be external to the laboratory where the PhD student has completed the thesis;
- not have co-authored any publications with the PhD student.

See the LegiFrance website (<http://www.legifrance.gouv.fr>)

At least **eight weeks** before the anticipated defence date, the PhD student's defence file and the dated and signed rapporteur proposal, which has been completed online, are sent to the EDSP administrative office, which prepares letters of appointment for the rapporteurs. These letters are sent to the President's Office to be signed, which is responsible for officially appointing the rapporteurs. The letters of appointment are posted to the rapporteurs.

The student must then send a copy of his/her manuscript to each rapporteur as soon as possible. The manuscript is usually sent in hard-copy format. It may also be sent in electronic format if there is prior consent from the rapporteur.

PHASE 3 – RETURN OF RAPPORTEURS' REPORTS

The rapporteurs must send their dated and signed reports to the EDSP administrative office, at least **four weeks** before the anticipated date of the defence.

The PhD supervisor is responsible for compliance with this deadline and, where necessary, is the best person to remind rapporteurs. The PhD student may ask his/her supervisor to send the rapporteurs a reminder but is advised not to send one himself/herself. In the event of rapporteurs missing the deadline significantly, the thesis delegate or EDSP management may assume the role of sending reminders, at the request of the PhD supervisor.

The report must state explicitly that the rapporteur agrees with the PhD thesis defence for the report to be considered favourable. Ambiguous wording will be recorded as negative.

The PhD student should ensure that reports are sent to the following parties:

- the PhD supervisor;
- the thesis delegate for the discipline;
- the EDSP administrative office (original report, dated and signed).

If both reports are in favour of the defence, students may proceed to the next phase of the procedure.

The PhD student has **one week** to amend the manuscript based on the remarks and advice of the rapporteurs before sending it to the panel members. According to standard practice in the discipline, the PhD student may request a meeting with the rapporteurs to discuss the revisions required.

PHASE 4 – PROPOSAL OF THE PANEL

At least three weeks before the anticipated defence date:

- The PhD student, together with his/her supervisor, completes an online proposal for the composition of the panel at <http://w3.edsp.ens-cachan.fr>.
- The PhD supervisor sends the dated and signed proposal for the composition of the panel to the thesis delegate for the discipline, who will approve and sign it.

- The PhD student is responsible for sending the thesis manuscript to the panel members as soon as possible. The manuscript cover page must be set out using the sample supplied by EDSP on the following webpage:

<http://www.edsp.ens-cachan.fr/version-francaise/presentation/documents/>

- This proposal is then sent to the EDSP administrative office which, following appointment by the President's Office, convenes the panel members by post and sends them the reports of the two rapporteurs.

Be sure to observe deadlines for having letters of appointment signed by the ENS Cachan President's Office and for posting official letters of appointment and rapporteurs' reports to all panel members.

- The PhD student submits the dated and signed thesis registration form to the EDSP administrative office, featuring the titles and summary of the thesis in French and English and key-words for referencing. This form must be printed through the website used for preparation of the defence. This means that arrangements can be made for the legal deposit of the thesis presented to the panel, in the event of acceptance by the panel. The ENS Cachan library takes steps to register the thesis and thesis metadata (summaries, titles and key-words in French and English) and applies for an ISBN based on the EDSP database. This is why you are asked to complete this form electronically and to avoid sending your metadata by email or hard copy.
- The PhD student's details (postal and email addresses) which appear on the thesis registration form must be kept up to date. EDSP is required to track the outcomes of PhD graduates from ENS Cachan up to 5 years after the thesis defence in order to respond to surveys carried out by the French Ministry for Higher Education and Research.
- The PhD student submits a CD-ROM containing the electronic version of his/her thesis to the EDSP administrative office, together with a sworn statement stipulating that the submitted version is identical to that sent to panel members.
- The electronic version of the thesis may alternatively be supplied via the **file exchange service** at ENS Cachan. If you use this service, observe the following:
 - The file life-span must be **61** days;
 - The file name must be descriptive, for example, **lastname_firstname_defencedate_title.pdf**;
 - Tick the box, "confirm by email";
 - Forward the confirmation message to EDSP.

PANEL COMPOSITION:

- The panel should be composed of **three to eight** members.
- At least half its members must be French or foreign nationals, external to the doctoral school and to the institution where the PhD student is registered, chosen for their scientific ability, subject to the provisions regarding the joint international supervision of theses.
- At least half of the panel must be composed of professors or the equivalent as defined in provisions relating to the appointment of CNU (National University Council) members; alternatively, they must be instructors of an corresponding grade not reporting to the French Ministry for Higher Education.

- Panel members **elect a chairperson from amongst their ranks** and, where necessary, a thesis defence rapporteur. This election usually takes place immediately prior to the defence (provide a small room for this purpose).
- The chairperson should be a professor or equivalent, or an instructor of corresponding grade, and must be external to the doctoral school and the institution where the PhD student is registered; the individual must also not have co-authored any publications with the PhD student.
- The PhD supervisor, if participating in the panel, may not be chosen as defence rapporteur or as chairperson of the panel.
- Guests may also feature on the list of panel members (the PhD supervisor and co-supervisors, for example). Guests may not be involved in panel deliberations, especially with regard to its decision on thesis acceptance or to the grade awarded.

A NOTE ON THESIS REGISTRATION:

- The information requested on the thesis registration form, apart from the address, is used to compile the SUDOC (university documentation system) shared library catalogue. SUDOC has been registered with the French data protection agency (CNIL).
- The dated and signed thesis registration form must be submitted to the doctoral school's administrative office at the same time as the electronic version of the thesis (in .pdf format), which is submitted to the panel prior to the defence.
- This submission must be made as soon as the two rapporteurs have delivered a favourable opinion on the defence and three weeks, at the latest, before the thesis defence.
- The thesis will only be legally deposited if the candidate is accepted by the defence panel.
- If minor corrections are made to the thesis after the defence, a second version (known as the dissemination version), different to the version presented to the panel, may be submitted to EDSP **no later than 2 weeks** after the defence.
- If more extensive revisions are required by the panel, a new version of the thesis must be submitted to EDSP, together with the corresponding registration form, **no later than 3 months** after the defence. A panel member must be appointed at the time of the defence to check the legitimacy of corrections. Registration of the thesis will not be effective until the panel member appointed to carry out the checks has given his/her approval.

PHASE 5 – PREPARATION OF THE DEFENCE

- The defence is public, unless dispensation is **exceptionally** granted by the head of the institution, where the thesis topic is declared to be of a confidential nature. If a request for dispensation is required, it must be submitted to the EDSP administrative office at least **three weeks** before the defence; from there, it will be sent to the ENS Cachan President's Office.
- The candidate must publicise the thesis topic and the date and place of the defence in his/her laboratory, and provide EDSP with the information required for the institutional advertisement of the defence. EDSP will publish the information (in the Thesis Defence section) on the ENS Cachan website, under **Headlines**, and on the EDSP website.

- The **public nature** of the PhD thesis defence and the minimum notice period of **two weeks before the defence** during which **advertisements** are posted (ENS Cachan website) are **legal provisions**, and **are requirements for the degree** (analogous to the publication of marriage banns, for example).
- The candidate must arrange to have a room reserved for the defence by his/her laboratory's administrative office, specifying the required date and schedule.
- Rooms designated for thesis defences are the Condorcet (D'Alembert building) and Conférences (Pavillon des Jardins building) rooms.
- The audience must attend the entire defence, i.e. **the oral presentation of the thesis and the debate which follows**. The audience must wait to hear the results of panel deliberations. Remember to remind the audience not to enter or leave during the presentation and debate, since that may disturb the panel and interrupt the candidate, especially if all the room exits are located in front of the panel (e.g. the E-media and Tocqueville lecture halls).
- The candidate must also remember to have his/her laboratory's administrative office reserve a small room for the election of the panel chairperson by the panel immediately prior to the defence and for panel deliberations immediately after the defence.
- Where necessary, the PhD student should make an appointment with the ENS Cachan audio-visual services (to record the defence, provide amplification, install microphones, etc).
- It is customary to provide light refreshments for the audience and panel members. The availability of suitable locations for this must be checked. The PhD student is responsible for tidying and cleaning these areas following the gathering.

PHASE 6 – THE DEFENCE

- The PhD supervisor will receive the set of documents required for the defence (minutes of the defence, clean defence report, authorisation for dissemination, etc.) from the EDSP administrative office.
- The defence is public.
- The defence is usually 45 minutes to one hour long, depending on the discipline, and is followed by questions. The question-and-answer session is usually significantly longer than the oral presentation of research.
- In its deliberations, the panel will consider the candidate's quality of research, and his/her capacity to place the research in its scientific context, as well as his/her presentation skills and ability to answer questions.
- The panel chairperson may ask the audience if any PhD graduates present who are not on the panel would also like to ask questions.
- Following deliberations, the panel declares whether it will accept the thesis or defer its decision.
- The chairperson signs the defence report, which is countersigned by all panel members. This report may indicate one of the following grades: "with distinction" or "with highest distinction". The grade, "with the congratulations of the panel" is no longer awarded at ENS Cachan.
- The defence report is communicated orally to the PhD student after deliberations and is subsequently sent to him/her in writing.

PHASE 7 – FINALISATION OF THE DEFENCE

The following items must be submitted to the EDSP administrative office no later than **two weeks** after the defence:

- the minutes of the defence;
- the panel's opinion for the reproduction of the thesis;
- the thesis defence report.

The following items must be submitted to the EDSP administrative office no later than **two weeks** after the defence if the panel does not require corrections and within 3 months if the panel has requested corrections:

- If applicable, a CD-ROM containing the electronic dissemination version of the thesis;
- The electronic dissemination version of the thesis may alternatively be supplied through ENS Cachan's large files exchange service.

The electronic dissemination version of the thesis may be different to the version to be held on record, particularly if confidentiality agreements need to be observed or if the PhD student has not acquired rights to certain documents reproduced in the thesis.

EDSP issues the following to the new PhD graduate:

- a certificate for the award of the PhD;
- the final degree certificate, once it has been signed by ENS Cachan management and by the institute's chief education officer (in the course of the following calendar year).

REGISTRATION OF THESES AND DEGREES

THESIS REGISTRATION

All theses must be registered with the Bibliographic Agency for Higher Education (ABES) by ENS Cachan's main library in order for the PhD degree to be awarded.

The thesis is legally deposited and disseminated by electronic means. The following two documents must be deposited:

- the original version of the thesis;
- the dissemination version of the thesis.

In all cases, the format of PDF files must be checked prior to being deposited using the FACILE programme (online tool used to ensure compliance with the French National Computer Centre for Higher Education's formatting requirements).

To find out more about the electronic depositing procedure via the STAR system, see the Order of 7 August 2006 on procedures for depositing, describing, reproducing, disseminating and storing theses or research presented at the PhD defence on the LegiFrance site.

The library at ENS Cachan is responsible for handling French electronic theses (TEF) metadata, allowing for the description and electronic referencing of theses. For this, it is **essential** that information entered in the EDSP online application for defence preparation is done with utmost care. Do not forget to supply key-words so that your thesis may be referenced more easily.

Theses which have been described and deposited can be viewed on the ABES website and the TEL thesis server.

CONSULTING DATABASES

Since 2004, online theses from ENS Cachan are all referenced in the **SUDOC** shared library catalogue with a link to the **TEL** server for access to the full text.

TEL: [HTTP://TEL.ARCHIVES-OUVERTES.FR/](http://tel.archives-ouvertes.fr/)

The TEL server aims to promote the online archiving of PhD theses and theses completed as part of the accreditation to supervise research. It is a subdivision of HAL (the multidisciplinary open-access archive). You can use it to find non-confidential dissemination versions of all theses deposited electronically with ABES via the STAR system.

HAL: [HTTP://HAL.ARCHIVES-OUVERTES.FR/](http://hal.archives-ouvertes.fr/)

The HAL server is a tool for direct scientific communication between researchers which is used to deposit and publish documents. The deposit is completed by the author or another authorised person. The documents deposited on HAL are not edited by peer review, but are issued with a stable web address and remain the intellectual property of the authors. They may therefore be cited in other publications.

DEGREE CERTIFICATES

A certificate for the award of the PhD degree is presented to the PhD student after the defence. S/he must wait until the beginning of the following calendar year for the final PhD degree to be issued.

Procedure for collection of a degree certificate from EDSP:

- Collection in person: by calling in person with proof of identity and with a **proxy** if you are not the degree holder;
- Postal delivery: a **form** requesting certificate collection must be completed and accompanied by a **postage label to the value of €4.70** for registered post within mainland France (for postage abroad, please contact the administrative office).

VIII/ AFTER THE PHD

PROSPECTS AFTER THE PHD

- Recruitment by business or industry
- Recruitment by institutions of higher education as a lecturer-researcher (assistant professor or professor) or as a temporary teaching and research assistant
- Recruitment by a public research institutes as a research officer or research professor at the CNRS, INRIA, etc.
- Recruitment to a research-support profession, e.g. research engineer,
- Post-doctoral research in France or abroad.

DEDICATED NETWORKS FOR PHD RECRUITMENT

- Intelli'Agence (ex-ABG)
- ADOC Talent Management
- Apec
- Research Gate (scientific social network, with over a million members, specialising in scientific jobs among other things)
- New Scientist Jobs (international positions in biology, chemistry, physics, mathematics, engineering science, life science and health science)
- Career.Edu (post-doctoral fellowships and lecturer-researcher positions abroad)
- H-Net Jobs (international positions in social and human sciences)
- The recruitment section of the ENS Cachan institutional website
- The ENS Cachan Alumni Association

Contact details: anciens@ens-cachan.fr; <http://www.aae.ens-cachan.fr>

PREPARING FOR YOUR FUTURE DURING YOUR PHD STUDIES

- EDSP training modules aimed at workplace entry.
- *Rencontres pour l'emploi des docteurs* (RED) or other career information days.
- Upgrading your skills: a further chapter in the PhD.
- *Rencontres Universités Entreprises* (RUE) – meetings between universities and industry.
- Inter-institutional skills assessment centres(CIBC): consider a skills assessment.

RENCONTRES POUR L'EMPLOI DES DOCTEURS: PHD CAREER WORKSHOP

Every two years, the doctoral school organises the *Rencontres pour l'emploi des docteurs* career workshop alongside the ENS Cachan Forum.

The goal of these sessions is to inform PhD students of their career prospects after their graduation, in industry as well as in the public sector. It is also aimed at raising awareness in industry around the significant advantages – of which many are unaware – of including young PhD graduates among new recruits. The event is arranged around seminars and roundtables.

THE FIRST DAY OF THE NEW ACADEMIC YEAR AT EDSP

To mark the first day of the new academic year (at the end of October), the doctoral school organises lectures on careers for PhD graduates.

The first presentation (Jean-Jacques Lesage) focuses on jobs in the **academic sector** (University, CNRS, INRIA, etc.). This presentation may be complemented by the EDSP module on workplace entry, focusing on preparing for interview for Assistant Professorships and for positions at CNRS.

The second presentation is given by a speaker from the **Adoc Talent Management** firm, which specialises in the recruitment of PhD graduates. The presentation showcases the opportunities for PhD graduates in the private sector, major corporations, small and medium enterprises, local authorities, etc., and abroad. Essentially, it provides a statistical overview. This presentation may be complemented by the EDSP module for workplace entry, focusing on job-seeking for PhD graduates.

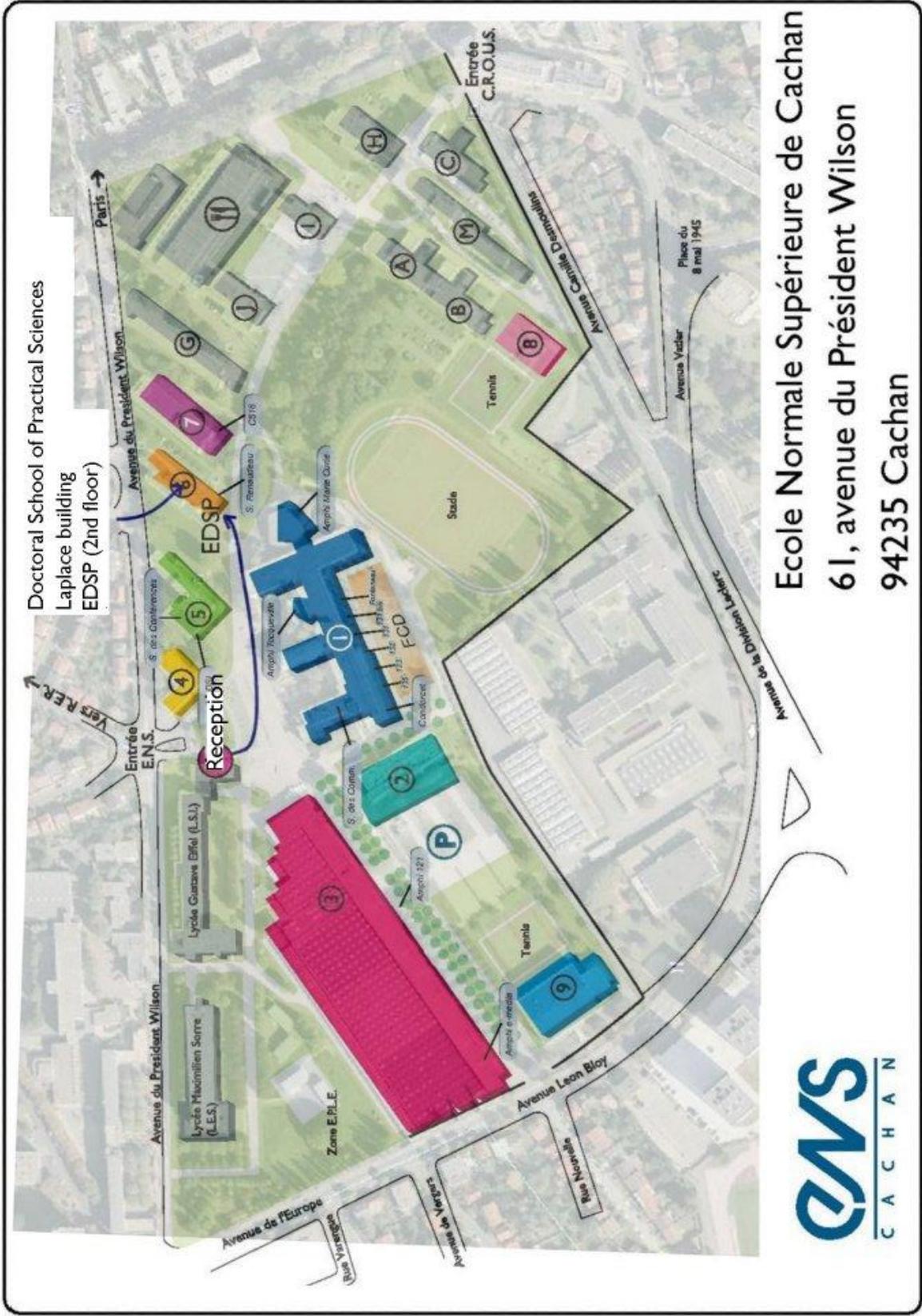
QUALIFICATION FOR THE ROLE OF ASSISTANT PROFESSOR

Following the PhD, in order to sit the assistant professor entrance exams, you must first be registered for the list of those qualified to assume the role of assistant professor.

In order for this to happen, various conditions must be met. One of these is to have a PhD.

- The deadline for the award of the PhD is usually **during December** of the year of application (the qualification schedule may vary slightly from year to year). If you wish to become an assistant professor, you must therefore schedule your defence prior to that deadline.
- You must declare your candidacy via the website of the Ministry for Higher Education and Research, in the section “emploi dans l’enseignement supérieur et la recherche”, under “GALAXIE.” Please be aware that this declaration must generally be submitted from **September** onwards in the year of application, and that the closing date for the GALAXIE website may precede the deadline set for the thesis defence. In such cases, the provisional date for the thesis defence should be provided when declaring your candidacy.

Additional information may be found on the website of the Ministry for Higher Education and Research.



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