Welcome and information meeting to new PhD candidates

http://www.universite-paris-saclay.fr/fr/formation/doctorat/ed-eobe

Ecole doctorale
Electrical, Optical, Bio: Physics and Engineering (EOBE)

Information and welcome meeting of new PhD candidates
Outline

- Introduction and presentation of the doctoral school
- The PhD project: several actors
- Main points of the following-up of PhD candidates
- Doctoral courses:
  - Université Paris-Saclay offer
  - EOBE framework
- Information and good practices regarding the PhD project
- Your ADUM account
- Message from the second year PhD candidates
- Discussion & Questions.
Welcome to everyone!

Why a PhD project?

Motivations can vary from one to one:
- Get the higher possible degree
- International degree
- Be implied in in research or research and development
- Work later in a specialized area
- Enlarge my network through collaborative activities and conferences
- etc

• The PhD project: $\leftrightarrow 3^+$ years during which the PhD candidate is essentially focused on his/her research activity.

• Enthusiasm, dynamism, methodology, ability to work with other people are generally key points for success.
Université Paris-Saclay doctoral space

- ABIES - Agriculture, alimentation, biologie, environnement, santé
- A&A – Astronomie & Astrophysique en Ile de France
- Biosigne - Signaillons et réseaux intégratifs en biologie
- CBMS - Cancérologie, biologie, médecine, santé
- EDMH - École doctorale de mathématiques Hadamard
- EDOM - Ondes et matière
- EDSN – Santé Publique
- **EOBE - Electrical, Optical, Bio - physics and Engineering**
- Interfaces - Interfaces
- ITFA - Innovation thérapeutique du fondamental à l'appliqué
- 2MIB - Sciences Chimiques : Molécules, Matériaux, Instrumentation et Biosystèmes
- PHENICS - Particules, hadrons, énergie et noyau : instrumentation, imagerie, cosmos et simulation
- PIF - Physique en Ile de France
- SDEV - Structure et dynamique des systèmes vivants
- SEIF - Sciences de l'environnement d'Ile-de-France
- SHS - Sciences de l'homme et de la société
- SMEMaG - Sciences mécaniques et énergétiques, matériaux et géosciences
- STIC - Sciences et technologies de l'information et de la communication
- SSMMH - Sciences du sport, de la motricité et du mouvement humain
- SdV - Sciences du végétal : du gène à l’écosystème

**EOBE doctoral school within the UPSaclay doctoral space**

- 1 000 PhD/year
- 42% of UPSaclay’s PhD are international students

4 500 PhD students (42 % international)

<table>
<thead>
<tr>
<th>Year</th>
<th>Defence thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>964</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>enrolment (UPSaclay)</th>
<th>enrolment (broader perimetre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-2019</td>
<td>4 300</td>
<td>4 890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>International PhD students (broader perimetre)</th>
</tr>
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<tbody>
<tr>
<td>2018-2019</td>
<td>2 024</td>
</tr>
</tbody>
</table>

**Head:**
Pr. Sylvie Pommier

**Paris-Saclay doctoral chart et Internal rules of the Paris-Saclay doctoral college:**
https://www.universite-paris-saclay.fr/en/doctorat/textes-de-reference
https://www.universite-paris-saclay.fr/fr/doctorat/textes-de-reference

Information and welcome meeting of PhD candidates
Main research laboratories:

- SONDRA/SUPELEC : http://www.supelec.fr/sondra/
- IMNC : http://www.imnc.in2p3.fr/
- CEA/DSV/I2BM/NeuroSpin/UNIRS : http://www-dsv.cea.fr/instituts/institut-d-imagerie-biomedicale-i2bm/ser...
- CEA/DSV/I2BM/NeuroSpin/UNATI : http://www-dsv.cea.fr/instituts/institut-d-imagerie-biomedicale-i2bm/ser...
- UMR INSERM-CEA/DSV/I2BM/SHFJ/IMIV : http://www-dsv.cea.fr/instituts/institut-d-imagerie-biomedicale-i2bm/ser...
- UMR CEA-Inserm/I2BM : http://www-dsv.cea.fr/instituts/institut-d-imagerie-biomedicale-i2bm/ser...
- URA CNRS-CEA/LMN : http://www-dsv.cea.fr/instituts/institut-d-imagerie-biomedicale-i2bm/ser...
- Institut de Myologie/Laboratoire RMN : http://www.institut-myologie.org/ewb_pages/r/recherche_labormn_projets_s...
- ONERA - Département Mesures Physiques : http://www.onera.fr/fr/site-index/departement-mesures-physiques.html
Example topics of the doctoral school

Flexible LEDs based on nanowires (M. Tchernycheva/C2N)

Mid-IR GeSi photonics (D. Morini/C2N)

Energy systems for energy for mobility and environnement (O. De La Barriere/SATIE)

Electromagnetism (GeePs)

Nanofluidics for biology (A.M. Hahiri/C2N)
Continuum between physics and engineering in the domains of electronics-nanoelectronics, electrical engineering and electromagnetism, optics/photonics/optoelectronics, sensing (sensing devices, instrumentation, metrology), imaging methods and techniques for life sciences.
# Main topics of the EOBE doctoral school

## 1. Electromagnetism and electrical engineering
- Electrical engineering, materials and systems for energy
- Electromagnetism, antennas, radars, electromagnetic compatibility, propagation, diffraction systems
- Photovoltaïcs
- Physics of discharges and applications

## 2. Electronics, spintronics, et photonics
- Electronics, integrated circuits, architectures, RF/telecoms circuits
- Optoelectronics, photonics, integration
- Nanoelectronics, nanophotonics
- Magnetism, microstructures, spintronics

## 3. Micro-nano-bio-technologies, microsystems, sensors, instrumentation, metrology
- Micro-nano-systems, nano-micro-technologies
- Materials, thin films
- Sensors, instrumentation, physical measurements, metrology
- Biophysics, on-chip biology and biosensors

## 4. Optical systems/vision, physics and imaging systems for bio-medical appl.
- Optical systems and metrology, physics of images
- Date and image processes related to sensors and measures
- Medical images, biomedical engineering, Physics for medicine

**Simulation-Modelling, Multiphysics Simulation, Modelling and characterization of Systems**
Information and welcome meeting of PhD candidates

1. Electromagnetism and electrical engineering
2. Electronics, spintronics, photonics
3. Micro-nano-bio-techn., microsystems, sensors, instrumentation, metrology
4. Optical systems/vision, physics and imaging systems for bio-medical applications
Where can I find information?

- The doctoral school website contains most of the practical information:
  - Everything is given in French and English
  - FAQs for registration and for Defense

http://www.universite-paris-saclay.fr/fr/formation/doctorat/ed-eobe

Regarding:
- The doctoral courses
- The (re-)registration procedures
- The defense procedures

May you have any more question, you can send an email to Mrs Stephen or to your direction board member.

www.universite-paris-saclay.fr/fr/formation/doctorat/ed-eobe#contacts-acces
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The PhD project: several actors

<table>
<thead>
<tr>
<th>Who:</th>
<th>Role:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PhD candidate</strong></td>
<td>Chose the PhD topic, do a research activity within the supervision of a research, publishes results with the explicit agreement of the supervisor, writes a manuscript and defends</td>
</tr>
<tr>
<td>PhD supervisor</td>
<td>Decide the PhD topic content and supervises the PhD candidate project; deals with matter related to the PhD project</td>
</tr>
<tr>
<td>Director of the research laboratory</td>
<td>Accepts the PhD topic proposed by the supervisor; Welcomes the PhD candidate within his/her laboratory</td>
</tr>
<tr>
<td>Director of the doctoral school</td>
<td>Ensures that the material conditions of the PhD candidate are satisfying, settles a following-up procedure of the PhD project, organizes all the administrative steps for the registration and defense, supervises any specific procedure (delays, any conflict, etc). Organizes the doctoral school life, is implied in the monitoring of the doctor job positions.</td>
</tr>
<tr>
<td>President of the University</td>
<td>Is the legal responsible for the PhD candidate and project, takes most of the official decisions by relying on the doctoral school proposals</td>
</tr>
</tbody>
</table>

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Role of the PhD supervisor:

- Ensures remuneration of his PhD students during the whole duration of the PhD
- Elaborate the PhD project in cooperation with the PhD student
- Ensures a frequent and regular follow-up of the thesis advancement
- Provides the needed resources for the accomplishment of the PhD project
- Encourages the PhD student to attend useful modules for his PhD project
- Commits to help the PhD student preparing the rest of his career
- Incites and helps the PhD student to publish his work
- Advises the PhD student for the writing of the manuscript and the preparation of the defense
- Proposes the two reviewers for the manuscript and the jury’s members for the defense
# Rights and obligations of the PhD candidate

<table>
<thead>
<tr>
<th>Interlocutor</th>
<th>Rights</th>
<th>Obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor</td>
<td>Timetable established together: meetings, milestones, intermediate reports, etc</td>
<td>Regularly informed of the progress of the work, including difficulties</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Working conditions identical to the other members of the institution</td>
<td>Safety regulations, attendance, professional and intellectual property rules of the institution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tasks of general interest.</td>
</tr>
<tr>
<td>Institution</td>
<td>Voting for the representatives in the institution</td>
<td>Access to common rooms and services</td>
</tr>
<tr>
<td>Doctoral school</td>
<td>Appointment when required</td>
<td>Informed about his/her position during 5 years after the defense</td>
</tr>
</tbody>
</table>
Information and welcome meeting of PhD candidates

ÉCOLE DOCTORALE
Physique et ingénierie : électrons, photons, sciences du vivant (EOBE)

Get the PhD degree step

Doctorate ceremony!

awards

prepared at ...
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But before: have a careful look at the doctoral school website

You, as the PhD student

1st year

2nd appointment

2nd year

3rd appointment

3rd year

4th appointment

+ specific appointments and procedures applied by the ED

Mrs Stephen + Only one director during the thesis

Quickly contact your key ED director for any matter: conflict, health issue, etc

Information and welcome meeting of PhD candidates
« Comité de suivi »

Following-up committee default members of your PhD project are:

BAP = BEN-ABDALLAH Philippe
BS = BOUCHOULE Sophie
CE = CASSAN Eric
DP = DESSANTE Philippe
GJC = GINEFRI Jean-Christophe
MF = MAZALEYRAT Frédéric

e.g. DP+GJC+MF or BAP+BS+CE

+ All the scientific follow-up actions carried out by the research laboratories: doctoral seminars, PhD students' days, etc:
The doctoral school accompanies these actions, lists them, and collects the return of the laboratories.

✔ You have neither nothing to do neither to declare within your ADUM space.
✔ Your thesis director, your laboratory director, and yourself will have access from ADUM to the reports of the two monitoring committees.
Information and welcome meeting of PhD candidates

**The EOBE following-up confidential questionnaires**

Filled by the PhD candidate:

Filled by the industry supervisor (if any):

Filled by the PhD supervisor:

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**We encourage you to read them early.**

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**Focus on the questionnaire filled by the PhD supervisor:**

- Technical skills for the PhD topic: A/B/C
- Scientific skills for the PhD topic: A/B/C
- Autonomy (can find information and solutions alone): A/B/C
- Ability to manage the research topic bibliography (find and draw an efficient synthesis): A/B/C
- Ability to find new solutions to problems: A/B/C
- Self-adaptation capacity (and ability to learn new tools and methods): A/B/C
- Ability to explain one’s results: A/B/C
- Ability to organize one’s scientific strategy: A/B/C
- Presence and punctuality: A/B/C
- Quality of the solicitations to group members (ask when needed): A/B/C
- Integration within the research team: A/B/C
- Quality of the professional relationship with the staff: A/B/C

**Conclusion:** one reply between the four:

- I am truly satisfied of the PhD candidate.
- After initial difficulties, the PhD candidate has entered a positive slope regime for the project.
- I am doubtful that the PhD candidate can achieve his/her project.
- The PhD candidate cannot achieve his/her project.

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**A: Good**

**B: Average**

**C: Not enough**
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Information on the doctoral school web site HERE

The doctoral training program is a key component of the doctoral project as defined in the Order of May 25, 2016.

These courses are basically of two types:

- **"Scientists courses"** aiming to provide scientific skills to strengthen the PhD activity or to open their knowledge in other fields than the PhD one.
- **"Professionnal courses"** allowing the doctoral students to develop his/her skills to integrate a job (especially in private companies), once doctor.

These doctoral trainings represent a chance for each PhD student to enrich his/her range of skills and/or prepare the future insertion in an academic job or in the private sphere. Let us notice that the catalogue offered by the University Paris-Saclay are very rich.

From an organizational point of view:

- Each PhD student can manage his training from his/her ADUM personal space ADUM (application to courses, uploading of courses' certificates, edition of the courses' list summary).
- During each interview with the Deputy Director of the EOBE doctoral school, a point is made systematically concerning the PhD training courses.
- Your privileged interlocutors to discuss with and receive advices are your PhD supervisor and the doctoral school.
- You are strongly advised to have attended all your doctoral courses at the end of the 2nd PhD year.
- **Before attending trainings, you have to submit its program to your deputy director and register the course only after.**
The composition of the EOBE doctoral school training program is as follows:

- A minimum of amount of 110h is to be followed by each doctoral student for the duration of his/her thesis, (no exception).
- 2 professional and 2 scientific modules must be followed.
- 1 single training module, even of a very large number of hours, cannot validate more than one course.
- The balance between professional and scientific modules must be limited to a maximum asymmetry of 60% / 40% of the hourly volume followed within the doctoral training program.
- Learning French for non-francophone students is accepted (and recommended) by the school. It will result in the validation of a Pro module if the number of hours monitoring is greater than or equal to 30h.
- A cultural language module (learning the language for itself) is recognized by the doctoral school, including in the case of English. One maximum technical language module can be considered.
- Involvements in the organization of scientific events (seminars, conferences, etc.) can be considered if the doctoral student investment involved is estimated to be high enough by the direction of the doctoral school. Such participation should, naturally, be certified by the head of the organizing committee. This type of transverse tasks will result, at most, to the validation of a Pro training module.
- The involvement of doctoral students in the "la Science"), or involvement in actions of dissemination will be considered also as Pro Module if the training has the direction of the doctoral school.

I clearly noted that the training in research ethics and scientific integrity organized by the POLETHIS of the University Paris-Saclay had to be followed once during my thesis (preferably in 1st year):

40% of 110h = 44h
60% of 110h = 66h

I noted that the "Post-thesis Day" organized annually by ED EOBE had to be followed once during my thesis in 2nd or 3rd year:
Doctoral trainings:
your tasks

From an organizational point of view:
- Each PhD student should manage his training from his/her ADUM personal account (applications to trainings, file tracking certificates, edit training program statements of accounts).
- At each meeting with the (deputy) director of the doctoral school, a point is made concerning doctoral training. The PhD student must prior to the meeting have completely updated his/her training program within his/her ADUM space.
- The contact people of each doctoral student are his/her PhD supervisor and the doctoral school itself.
- It is strongly advised to have completed all courses at the end of the second PhD year.

Note: Before attending trainings, its nature and its program must be submitted by the PhD student to the (deputy) director of the doctoral school who follows him/her, which will validate (most often) or not the request. Registration will then be performed by the PhD student.

Any question?:

- **Part-time PhD degree**: Standard program required if no permanent contract
- **Permanent contract** (CDI): No PRO course
- **Joint PhD (Cotutelle internationale)**: Half of the standard program
Information and welcome meeting of PhD candidates

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PhD duration

- The by-default duration is 3 years, but this needs an active involvement:
  - More than 3 years is possible if further funding is present to support the extended period. Everything should be anticipated.

The PhD supervisor and yourself have to anticipate this deadline (at least 6 months before).
Progress of the PhD

- 3 years is short

The thesis is a living personal project to be carried out dynamically and enthusiastically.

<table>
<thead>
<tr>
<th>Year</th>
<th>Step</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Entering the subject</td>
<td>Bibliography <em>Scientific Modules</em></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Production</td>
<td>Experimentation First publications <em>Professional Modules</em></td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Production and defense</td>
<td>Submit a journal paper Writing Defense</td>
</tr>
</tbody>
</table>
Publications

• **Valuation of works:**
  Seminars, congresses, publications

• **How many?:**
  By default, one journal paper and one intern. conf. com. are required by the EOBE doctoral school

• **Required:**
  Participation to at least one international conference

• **Remark:**
  The communication of any result needs the explicite agreement of the PhD supervisor
The defense (1/2)

• **Conditions:**
  - Writing the PhD thesis
  - Agreement of the supervisor
  - Sufficient scientific production
  - Validation of all scientific and professional modules

• **4 steps**
  1. Designation of two external reviewers
  2. Designation of the jury
  3. Authorization of the defense according to the reviewers’ reports
  4. Legal deposit of the thesis: ADUM + Appointment with the library
The defense (2/2)

- **Writing the PhD thesis**
  - Full report different from the papers
  - Not gathering the papers

**Sometimes a possible difficult step:**
- Test before your ability to organize ideas and write.
- Allocate enough time for writing the manuscript in agreement with your PhD supervisor.

- **Language:** in French by default
  Possible exemptions upon written request are accepted for writing in English (only); an extended summary in French is required (5-10p)

- **Defense:** in French by default
  Exemptions: if all jury members agree with a defense in English
Introduction and presentation of the doctoral school

The PhD project: several actors

Main points of the following-up of PhD candidates

Doctoral courses:
  • Université Paris-Saclay offer
  • EOBE framework

Information & good practices regarding the PhD project

Your ADUM account

Message from the second year PhD candidates

Discussion & Questions.
TOOL THAT WILL FOLLOW YOU ALL ALONG THE PHD (AND THAT MAY BE USED AFTER):

At any time during the thesis

I Upload the list of each my publications, I upload my doctoral trainings including attestations, etc

PhD period: use of ADUM

R₁ = Registration « j »
D = Defense procedure (soutenance)

I use it as my PhD profile (URL => CV)

Any question?:

Details here

Information and welcome meeting of PhD candidates
• Take in charge by yourself to learn all the possibilities offered by your ADUM personal account.
• Things are pretty intuitive and you can switch in English.

Courses

Publications (mandatory)
Publications :
Within ADUM

- 2015 - Comparison of three measuring systems at high frequency for non oriented silicon steels: influence of the rolling direction on magnetic losses and BH curve
- 2015 - Skin effect in steel sheets under rotating induction
- 2014 - Comparaison des systèmes de mesure et influence de la direction de laminage sur les pertes magnétiques et sur la courbe anhystérétique
Your ADUM account

Journal article or conference communication, etc

URL when possible
Your ADUM account

All doctoral trainings can be managed here

Master 2 courses, research schools, etc

Information and welcome meeting of PhD candidates
ADUM will follow your process; eg: *Towards the PhD defense*
Regarding all the administrative steps: $R_1 + R_2 + R_3 + D$ (+ additional $R_{js}$, if needed):

**Print, fill, and respect the checklists - Thanks**

Note that the Defense Checklist contains a retro-planning since the date of defense (T0).
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5 EOBE PhD representatives

Preliminary information:

- 5 PhD students are elected each year for one year
  => **Representatives of the doctoral school PhD students** within the ED council and may contribute to help:
  - e.g. to the **POST-THESIS DOCTORAL SCHOOL DAY ORGANIZED IN SPRING EACH YEAR** (jointly with the STIC doctoral school since 2016)

- Elections between January 15 and February 15 of each year
- Short period to collect the applications
- On-line vote organized by the doctoral school
- You can apply several times
- We encourage to ensure that representatives from the main different locations of the EOBE laboratories are present (eg ‘Orsay-Vallée’, ‘Gif-Plateau Moulon’, ‘Palaiseau Plateau-IOGS’)

Jean HASSLER
Jérémy LETANG
Sterenn GUERRIER
Gil CARDOSO
Amina GAHFIF

New election in January

2019 representatives
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Discussion & Questions

Any more question?:

ed_eobe@universite-paris-saclay.fr

https://www.universite-paris-saclay.fr/fr/formation/doctorat/ed-eobe#contacts-acces