Second Year in Computer Science at ENS Paris-Saclay

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Sept. 2022
Master of Computer Science
M1 MPRI @ ENS Paris-Saclay
https://lmf.cnrs.fr/deptinfo-ens/M1/

- Year of *diversification and broadening*
  - courses from MPRI M1
  - external courses from other masters (Université Paris Cité, Sorbonne Université...)

- Curriculum consists of
  - à la carte courses (first semester mostly)
  - internship (second semester)

- Lab visits; *at least one visit for each student*
Year of *diversification and broadening*

- courses from MPRI M1
- external courses from other masters (Université Paris Cité, Sorbonne Université...)
  - by contrast, M2 will be a time for specialisation

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Lab visits; *at least one visit for each student*
Two possibilities

Need to choose rapidly between two types of curricula:

Long internship

- first semester in Paris-Saclay
  (30 ECTS, min. 18 from MPRI M1 and 24 in CS)
- 5+ months internship abroad

Short internship

- two semesters in Paris-Saclay
  (45 ECTS, min. 24 from MPRI M1 and 30 in CS)
- 2.5+ months internship abroad
- aim: strengthen knowledge in fundamentals or in another discipline like mathematics
Courses à la carte

MPRI M1 (and local L3) courses:

- start on Sept. 12, 2022
- min. 18 ECTS if long internship and 24 if short
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External courses:

- must be **validated** by the department
- under **your** responsibility: e.g. finding out timetables, rooms, making sure the teacher or secretary sends me your grades, and managing second session exams in case of failure (before Sep. 1, 2023)

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TODO
- request to meet me if you’d like to discuss your choices
- your choices have to be on the pedagogical server by Sep. 27, 2022
  (https://admin.dptinfo.ens-cachan.fr/serveur_pedagogique/)
MPRI M1 courses

https://lmf.cnrs.fr/deptinfo-ens/M1/Edts1-2022-23

- Initiation to research (Paris-Saclay, mandatory, 4 ECTS)
- Lambda-calculi and categories (Ulm, 7 ECTS)
- Advanced complexity (Paris-Saclay, 7 ECTS)
- Rewriting techniques (Paris-Saclay, 4 ECTS)
- Tree automata and applications (Paris-Saclay, 4 ECTS)
- Basics of verification (Paris-Saclay, 7 ECTS)
- Algorithmics and bioinformatics (Paris-Saclay, 4 ECTS)
- Probabilistic aspects of computer science (Paris-Saclay, 7 ECTS)
- Logical aspects of AI (Paris-Saclay, 4 ECTS)
- Combinatorial optimization (Ulm, 4 ECTS)
- Introduction to computer vision (Ulm, 7 ECTS)
- Robot motion planning (Ulm, 7 ECTS)
- Software engineering (Paris-Saclay, 7 ECTS)
- Networks (Paris-Saclay, 4 ECTS)
Examples of external courses (to be approved by dept.)

- Other CS masters at Paris-Saclay, including MPRI @ UFR
  
  https://sites.google.com/view/mastersagenda/

- Math. Logic and Foundations of Comp. Sci. (Université Paris Cité)
  
  http://www.math.univ-paris-diderot.fr/m2lmfi/

- Master of computer science (Université Paris Cité, Sorbonne Université)
  
  http://www-master.ufr-info-p6.jussieu.fr/lmd/

- Pure and applied mathematics, Université Paris-Saclay
  
  https://www.universite-paris-saclay.fr/fr/formation/master/mathematiques-et-applications#index-m1

- Introduction to Life Sciences (ENS Paris)
  

- Cogmaster, ENS Paris
  
  https://cogmaster.ens.psl.eu/
Other options (requires dept. approval)

Some MPRI M2 courses can be followed, e.g.

- **Foundations of proof systems** (3 ECTS)
- **Web data management** (2nd period, 3 ECTS)
- **Comp. structures and logics for natural language modelling** (3 ECTS)
- **Graph algorithms** (first period, 3 ECTS)
- **Proof of programs** (2nd period, 3 ECTS)

Some L3 courses may also be taken (MPRI credits):

- **Computability, Logic, Formal Languages, Algorithmics. . .**
Course choices: important advice

Have a safety net

- Plan ahead for a potential failure.
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- Plan ahead for a potential failure.

Beware overloading!
- Some courses are quite difficult / time consuming.
- Keep some courses for next year.
- Do not have a too important safety net: attempt to do well at a limited number of courses.
Course choices: important advice

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- Plan ahead for a potential failure.

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Stay in touch with me
Let me know if you drop one course, or if you worry about failure.
Internships

- abroad (except for international students)

- long internships (30 ETCS)
  - duration: 5 months between February and August
  - search: October–December with your tutor

- short internships (15 ETCS)
  - duration: 2\(\frac{1}{2}\) months between June and August
  - search: December–February with your tutor
Plan ahead!

Oct. Soul-searching with your tutor:

Nov. 15–30 Initial agreement from supervisors
    Investigate visa and financial issues
    Contact international services
    (ri-outgoing@ens-paris-saclay.fr)

Dec. –Jan. Finalise research project, dates, funding, practical
Then what?

Start thinking about next year (talk with me, your tutor and teachers):

- **ARPE** research year abroad
  - overseen by Stéphane Le Roux (leroux@lsv.fr)
  - long internships
  - funding opportunities for unpaid students
    - contact ri-outgoing@ens-paris-saclay.fr and look at
      [https://www.universite-paris-saclay.fr/fr/bourse-de-stage-a-letranger](https://www.universite-paris-saclay.fr/fr/bourse-de-stage-a-letranger)

- **M2 MPRI** or another research-oriented Master

- **agrégation** of computer science (**new!**)

- **bachelor** in another field like biology, physics, economy, etc.
Contacts

Common issues:

- chatain@ens-paris-saclay.fr and teachers for course work
- mfonpeya@ens-paris-saclay.fr for administrative issues
- sys. admins (si@dptinfo.ens-cachan.fr) for computer accounts
- your tutor

Social, medical and psychological difficulties

Nurse, doctor, psychologist are available

http://ens-paris-saclay.fr/campus/sante

Talk about psychological difficulties with other students,
and with referent at dept. (Serge Haddad).

Email

Read your email and reply. I take it very seriously if you do not reply within 2-3 working days.
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Questions?