Second Year in Computer Science at ENS Paris-Saclay

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École Normale Supérieure Paris-Saclay

Sept. 13, 2021
revised Sept. 23
Year of **diversification and broadening**
- courses from MPRI M1
- external courses from other masters (Paris 7, 6, 11, etc.)

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

**Lab visits; at least one visit for each student**
Master of Computer Science
M1 MPRI @ ENS Paris-Saclay
https://lmf.cnrs.fr/deptinfo-ens/M1/ (new!)

- **Year of diversification and broadening**
  - courses from MPRI M1
  - external courses from other masters (Paris 7, 6, 11, etc.)
  - ... by contrast, M2 will be a time for specialisation

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

- 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. 13, 2021
- min. **18 ECTS** if long internship and **24** if short

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, 2022)

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, 2021 (https://admin.dptinfo.ens-cachan.fr/serveur_pedagogique/)
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MPRI M1 courses

https://lmf.cnrs.fr/deptinfo-ens/M1/Edts1-2021-22

- 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)
- Convex and combinatorial optimization (Ulm, 7 ECTS)
- Introduction to computer vision (Ulm, 7 ECTS)
- Robot motion planning (Ulm, 7 ECTS)
- Software engineering (Paris-Saclay, 7 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/

  http://www.math.univ-paris-diderot.fr/m2lmfi/

- Master of computer science (U. Paris 6 or 7)
  http://www-master.ufr-info-p6.jussieu.fr/lmd/

- Pure and applied mathematics, U. 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

Have a safety net
- 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: ARPE may be partly in France
- 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

M2 MPRI or another research-oriented Master

aggregation of computer science (new!)

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

Common issues:

- chatain@lsv.fr and teachers for course work
- tiphanie.stephan@ens-paris-saclay.fr (until Christmas) 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?