Second Year in Computer Science at ENS Paris-Saclay

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École Normale Supérieure Paris-Saclay

Sept. 2024
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...
  - ... by contrast, M2 will be a time for specialisation

- Curriculum consists of
  - *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. 9, 2024
- 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, 2025)

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, 2024 (https://admin.dptinfo.ens-cachan.fr/serveur_pedagogique/)
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MPRI M1 courses at Paris-Saclay

https://lmf.cnrs.fr/deptinfo-ens/M1/Edts1-2024-25

- Initiation to research (mandatory, 3 ECTS)
- Advanced complexity (7 ECTS)
- Rewriting techniques (4 ECTS)
- Tree automata and applications (4 ECTS)
- Basics of verification (7 ECTS)
- Algorithmics and bioinformatics (4 ECTS)
- Probabilistic aspects of computer science (4 ECTS)
- Logical aspects of AI (4 ECTS)
- Software engineering (4 ECTS)
- Introduction to categories (4 ECTS)
- Networks (4 ECTS)
MPRI M1 courses at Ulm

https://diplome.di.ens.fr/calendar_fr.html

- Combinatorial optimization (4 ECTS)
- Introduction to computer vision (7 ECTS)
- Robot motion planning (7 ECTS)
- Models and languages for programming reactive systems (7 ECTS)
- Random structures and algorithms (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/

- 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.
(for 2023-2024, TBD for 2024-2025)

- 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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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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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. – Nov. Soul-searching **with your tutor**

before X-mas Agreement with supervisors
Then, **immediately**, contact Laëtita Rouches
secretariat.info@ens-paris-saclay.fr
and follow administrative procedure

Dec. – Jan. Finalise research project, funding, visa, practical
Next Year

Then what?

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

- **ARPE** research year abroad
  - overseen by Stéphane Le Roux (leroux@ens-paris-saclay.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

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

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

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

Studies are highly demanding

Take care of your health: physical & mental

Sleep well
Eat well
Practice sports

New: Sports at ENS Paris-Saclay on Thursday afternoon

Attend the courses!

Social, medical and psychological difficulties
Nurse, doctor, psychologist are available

Talk about psychological difficulties with other students, and with referent at dept. (Luc Lapointe).
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http://ens-paris-saclay.fr/campus/sante

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Contacts

Common issues:

- scerri@lmf.cnrs.fr and teachers for course work
- Laëtitia Rouches secretariat.info@ens-paris-saclay.fr for administrative issues
- sys. admins (si@dptinfo.ens-cachan.fr) for computer accounts
- your tutor

Email

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

Questions?