Second Year in Computer Science at ENS Paris-Saclay

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École Normale Supérieure Paris-Saclay

Sept. 2023
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. 12, 2023
- min. **18 ECTS** if long internship and **24** if short
Courses à la carte

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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, 2024)
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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, 2023
  (https://admin.dptinfo.ens-cachan.fr/serveur_pedagogique/)
MPRI M1 courses

https://lmf.cnrs.fr/deptinfo-ens/M1/Edts1-2023-24

- Initiation to research (Paris-Saclay, mandatory, 3 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+4 ECTS)
- Probabilistic aspects of computer science (Paris-Saclay, 7 ECTS)
- Logical aspects of AI (Paris-Saclay, 4 ECTS)
- Software engineering (Paris-Saclay, 7 ECTS)
- Lambda-calculi and categories (Ulm, 7 ECTS)
- Combinatorial optimization (Ulm, 4 ECTS)
- Introduction to computer vision (Ulm, 7 ECTS)
- Robot motion planning (Ulm, 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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- Do **not** have a too important safety net: attempt to do **well** at a limited number of courses.

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 international services
(ri-outgoing@ens-paris-saclay.fr)
and follow administrative procedure

Dec. – Jan. Finalise research project, funding, visa, 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

- **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
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Take care of your health: physical & mental

- Sleep well

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).

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- Eat well
- Practice sports

New: Sports at ENS Paris-Saclay on Thursday afternoon
Attend the courses!

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Contacts

Common issues:
- chatain@ens-paris-saclay.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?