

# Second Year in Computer Science at ENS Paris-Saclay

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# Outline

école \_\_\_\_\_  
normale \_\_\_\_\_  
supérieure \_\_\_\_\_  
paris-saclay \_\_\_\_\_

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*

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  - 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, 2022
- min. **18 ECTS** if long internship and **24** if short

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- 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 **Sept. 27, 2022**  
([https://admin.dptinfo.ens-cachan.fr/serveur\\_pedagogique/](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.informatique.univ-paris-diderot.fr/wiki/doku.php?id=enseignement:master1>

<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)

<http://www.enseignement.biologie.ens.fr/spip.php?article160&lang=fr>

- 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. . .

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- 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. 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](mailto: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.



# Contacts

Common issues:

- [chatain@ens-paris-saclay.fr](mailto:chatain@ens-paris-saclay.fr) and teachers for course work
- [mfonpeya@ens-paris-saclay.fr](mailto:mfonpeya@ens-paris-saclay.fr) for administrative issues
- sys. admins ([si@dptinfo.ens-cachan.fr](mailto:si@dptinfo.ens-cachan.fr)) for computer accounts
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## Social, medical and psychological difficulties

Nurse, doctor, psychologue 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.

# Questions?