Université Paris-Saclay
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M2 Genomics Informatics Mathematics and Artificial Intelligence for Health and Environment (GENIOMHE)

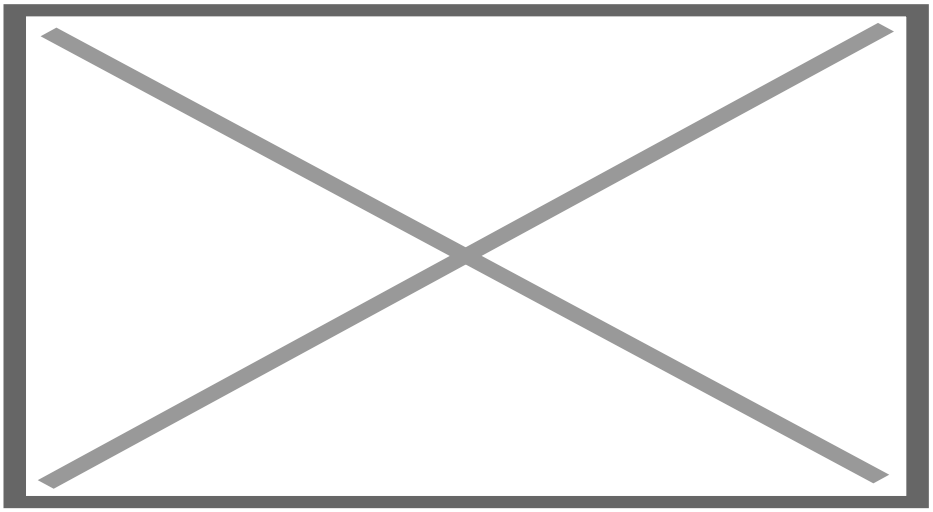
Master's degree
Specialisation Bioinformatics / Computational Biology
Enrolment type
Formation initiale
Formation continue
Language(s) of instruction
English

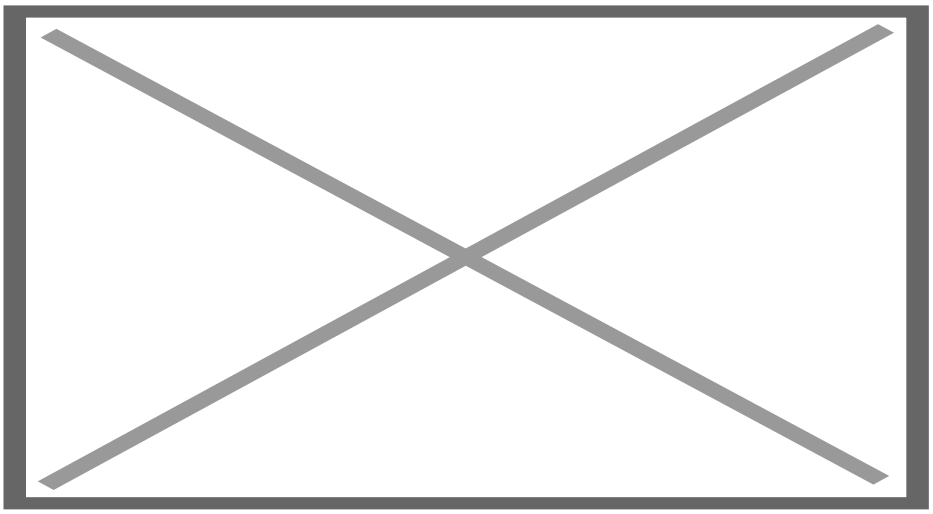
The GENIOMHE-AI Master's degree trains specialists in research and development in the field of Bioinformatics for **genomics** and **precision medicine**. This program allows students to master **algorithmics**, various **programming** languages ??and techniques, as well as advanced techniques in **data science**, **artificial intelligence**, **statistics**, and databases for analyzing massive data.

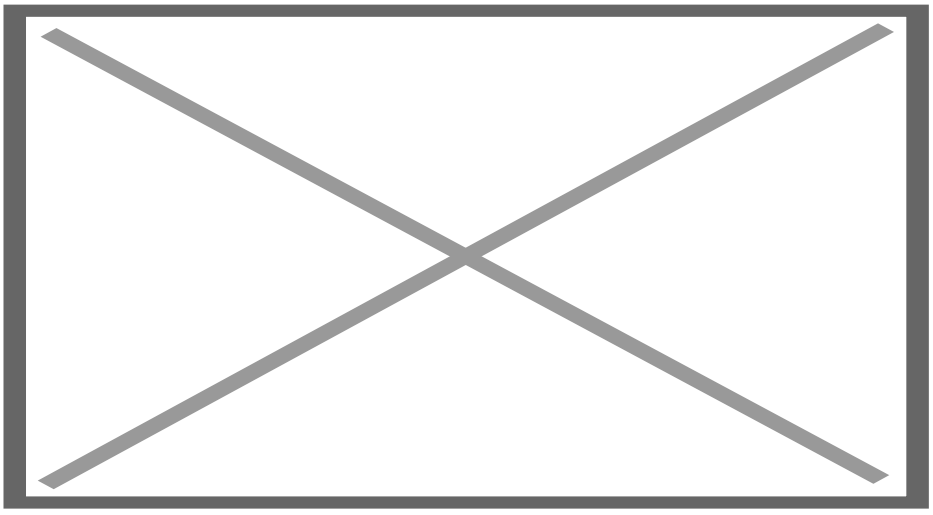
The GENIOMHE-AI Master's degree program consists of a set of teaching units organized into several blocks: Advanced Genomics, Computer Science for Big Data, Data Science and Artificial Intelligence for Precision Medicine, and Computational Systems and Structural Biology. Optional teaching units will also be offered, such as an introduction to entrepreneurship.

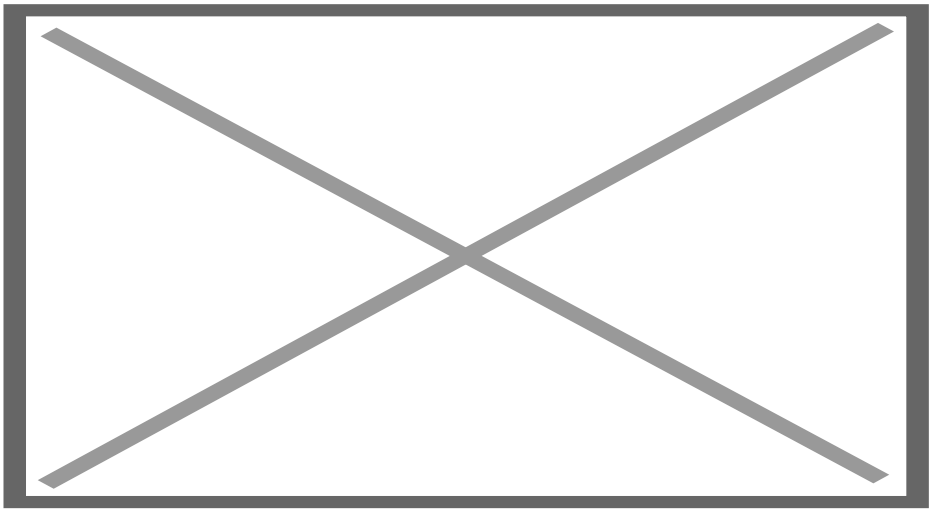
Students will have various projects to carry out, within each of the teaching units and through cross-disciplinary work. They will also have the opportunity to attend keynote lectures.
The second semester of the academic year (starting in January) is devoted to a 5-6 month internship in an academic research laboratory or a company.

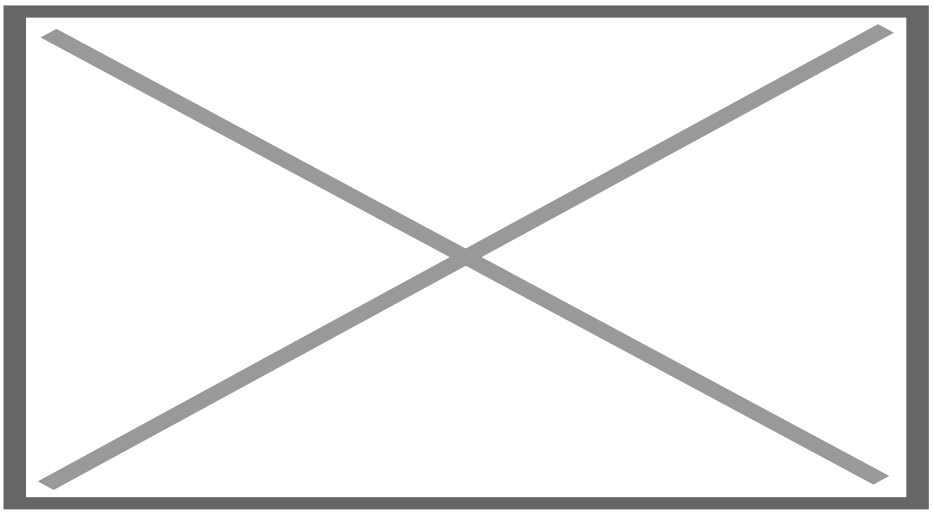
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Develop and use advanced techniques in computer science, data science and artificial intelligence for the analysis of massive genomic data, particularly in the context of precision medicine.

Objectives

This master's degree is a multidisciplinary training program that allows students to: understand the complex and diverse challenges of biology in order to meet current research and innovation needs in academic research, the biotechnology industry, the pharmaceutical industry and health; meet the new challenges related to precision medicine made possible by the rapid and massive production of genomic data; meet the challenges of using artificial intelligence in the health fields; master biomedical data analysis and modeling techniques; be autonomous in managing application development projects in various programming languages, and propose innovative IT solutions.

Débouchés

Further Study Opportunities

PhD in Bioinformatics
PhD
PhD thesis
Students with a 2nd year Master's degree have the possibility to pursue doctoral research.
Engineering, research and development
fields of statistical learning, artificial intelligence and advanced data analysis
Data Scientist, Data Analyst, Ingénieur·e en Machine Learning dans des secteurs innovants (tech, finance, santé, énergie, etc.) ;
Poursuite en thèse en apprentissage statistique, mathématiques appliquées ou intelligence artificielle ;
R&D researcher or data modelling and analysis expert in leading-edge companies or laboratories.
PhD

Calendar

Start of programme (indicative date)
07/09/2026
End of programme (indicative date)
31/08/2027
Admission

Capacity

Available Places

25

Target Audience and Entry Requirements

Students who have validated an M1 in bioinformatics (M1 GENIOMHE-AI or other) or a mono-disciplinary master's degree in computer science or biology with proven skills and real motivations for bioinformatics.

Période(s) de candidature

Inception Platform

From 15/01/2026 to 15/07/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

All transcripts of the years / semesters validated since the high school diploma at the date of application.

Certificate of English level.

Selection sheet for continuation in M2 to download on this web page.

Curriculum Vitae.

Detailed description and hourly volume of courses taken since the beginning of the university program.

Additional supporting documents

VAP file (obligatory for all persons requesting a valuation of the assets to enter the diploma).

Supporting documents :
- Residence permit stating the country of residence of the first country
- Or receipt of request stating the country of first asylum
- Or document from the UNHCR granting refugee status
- Or receipt of refugee status request delivered in France
- Or residence permit stating the refugee status delivered in France

- Or document stating subsidiary protection in France or abroad
- Or document stating temporary protection in France or abroad.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l
Computational Systems Biology and Network Medicine	2.5	Semestre 1	12	12					
Charger le détail									
Structural Bioinformatics and RNA world	2.5	Semestre 1	12	12					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learn cour
Internship	30	Semestre 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l
Advanced Deep Learning	2.5	Semestre 1	12	12					
Charger le détail									
Statistics and statistical learning	2.5	Semestre 1	12	12					
Charger le détail									
Reinforcement Learning	2	Semestre 1	9	9					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis lea co
Transversal Project	2	Semestre 1		33					

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dist lea co
Charger le détail									
Conferences	0.5	Semestre 1		9					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l
Data Integration and Big Data	2	Semestre 1	9	9					
Charger le détail									
Advanced Programming	2.5	Semestre 1	15	15					
Charger le détail									
Advanced Algorithmic and Combinatorial Optimization	2.5	Semestre 1	12	12					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l
Advanced Functional Genomics	2.5	Semestre 1	15	7.5					
Charger le détail									
Metagenomics and Multiomics for microbiome studies	2	Semestre 1	9	12					
Charger le détail									
Comparative Genomics	2	Semestre 1	9	9					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed	Lecture/practical	directed study/practica class
Data Camp Charger le détail	2	Semestre 1	20		10			
Introduction to Entrepreneurship: Creat Your Deeptech Startup Charger le détail	2	Semestre 1						
Computational DNA nanotechnology Charger le détail	2	Semestre 1	18					

Teaching Location(s)

EVRY

Contact

- **Fariza TAHI**

  PR

http://www.universite-paris-saclay.fr/formation/master/bio-informatique/m2-genomics-informatics-mathematics-and-artificial-intelligence-health-and-environment-geniomhe-ai