



UNIVERSITÉ
DE GENÈVE
FACULTÉ DES SCIENCES

Master in Biology in 120 ECTS

March 29, 2022



Why go from 90 to 120 ECTS

- To harmonize with other Masters in the Faculty of Science
- To avoid admission problems in some PhD schools
- To reflect reality (only 1/3 of Masters finish in 3 semesters)
- To improve the attractiveness of our Master

How to use these additional 30 ECTS?

- Introduce a second **practical training** (in a different lab from the one for the Master's thesis): discover a second research field and environment and broaden the range of technical knowledge
- Improve **scientific communication** skills (writing, oral presentation, poster...)
- Develop **transverse skills**: bioinformatics, statistics, microscopy...

Master in Biology in 120 ECTS

	Courses (44 ECTS)	Pre-internship and Master's project (76 ECTS)
Semesters 1 and 2	10 to 21 ECTS « core courses » + 23 to 34 ECTS courses according to the chosen option	Pre-internship 16 ECTS (evaluation)
	--> Validation of the pre-internship + all courses to continue	
Semesters 3 and 4	-	Master's project 60 ECTS

Master in Biology 1st year

	Courses (44 ECTS)	Pre-internship (16 ECTS)
Semesters 1 et 2	<ul style="list-style-type: none"> • Scientific communication (4 ECTS) • Core courses (≥6 ECTS) • Courses according to the chosen option (23 to 34 ECTS) 	Pre-internship equivalent to 8 weeks full time (320h) during Spring semester
Evaluation	→ 2 exam sessions (Jan /June and September)	Report written as a scientific article + oral presentation Possibility of resubmitting the report and/or re-doing a defense within 2 weeks

→ **Validation of the internship + all courses (-1)*** before starting the Master's project (semesters 3 and 4)

* a 3rd attempt for 1 exam only

Core courses for the 1st year of the Master

Core (≥10 ECTS)

Code	Cours	Teacher	ECTS
14F001	Elements of bioinformatics	A. Bairoch & MC. Blatter	5
14B063	Microscopy and imaging	C. Bauer	3
14B672	Computer skills for biological research	M. Currat & J. Nunes	4
14B057	Statistics & probability*	J. Nunes	3
14B951	Applied statistics*	Y. Naciri	2
14B012	Scientific writing and communication (mandatory)	A. Boland, M. Hothorn, J. Montoya	4

} ≥6

*Take at least 1 out of the 2 statistics courses

Master in Biology' specializations

- Biodiversity & Systematics (BDS)
- Molecular Plant Sciences (MPS)
- Bioinformatics & Data Analysis in Biology (BIADB)
- Molecular Biosciences, Genetics, Development & Evolution (MBGDE)
- Mathematics
- Physics

Study plans for Biology orientations

Molecular Biosciences, Genetics, Dev & Evolution		Molecular Plant Sciences		Biodiversity & Systematics		Bioinformatics	
Mandatory courses	ECTS	Mandatory courses	ECTS	Mandatory courses	ECTS	Mandatory courses	ECTS
14B017 Genetics, Dev. & Evolution	9	14B035 MPS-1	4	14B013 Advanced systematics	2	<i>14B672 computer skills*</i>	4
14B010 Principles of Cellular and Molecular Biology	8	14B037 MPS-2	4	14B005 Biodiversity	3	<i>14F001 Bioinformatics *</i>	5
		14B648 Seminars MPS	1	14B637 Molecular Population Genetics	5	<i>14B057A Stats & proba*</i>	3
		<i>14B023 Selected chapters</i>	4	14B657 Phylogeny	5	14B057P Stats & proba adv.	2
		<i>or 14B045 Intro à la recherche MPS</i>	4			14B637 Molecular Population Genetics	5
						12X020 Programmation (unless already validated during BA studies)	
Total	17	Total	13	Total	15	Total	19
Elective courses	6 à 17	Elective courses	15 to 26	Elective courses	8 to 19	Elective courses	Complete to 44

**Also included in the list of core courses*

Study plans for Maths & Physics orientations*

Mathematics		Physics	
Mandatory courses	ECTS	Mandatory courses	ECTS
11M060** Logique et théorie des ensembles	6	11P020** Méth. math. pour physiciens I	8
11M020** Analyse I	9	12P020** Thermodynamique	4
11M010** Algèbre I	8	14P017 Biophotonics	5
11M070** Math. discrètes	6	16P013 Introduction to the physics of biology	3.5
Total	29	Total	20.5
Elective courses	-	Elective courses	2.5 to 13.5

* For Master's projects at the biology/mathematics or biology/physics interface

** Courses given in French

Recap of the Master in Biology in 120ECTS

	Courses (44 ECTS)	Internships (76 ECTS)
Semesters 1 and 2 (60 ECTS)	10 to 21 ECTS « core courses » (including Scientific Communication) + 23 to 34 ECTS of courses according to the chosen option	Pre-internship (16 ECTS) equivalent to 320h (with written report and oral defense)
--> Validation of the internship + all courses (-1)* before starting the Master's project		
Semesters 3 and 4 (60 ECTS)	-	Master's project (60 ECTS) 45 weeks (with thesis and oral defense)

* 6 options:

- Biodiversity & Systematics (BDS)
- Molecular Plant Sciences (MPS)
- Bioinformatics & Data Analysis in Biology (BIADB)
- Molecular Biosciences, Genetics, Development & Evolution (MBGDE)
- Mathematics
- Physics

Schedule for 2022/24

Planning 2022/2024	
April – August 2022	Consultation of online announcements for pre-internships and Master's projects
April – September 2022	Interviews for Master's projects (this choice will define the option and therefore the study plan of the Master)
October 2022	Students select 3 pre-internship labs (online). Pre-internship labs will be assigned based on requests.
Autumn Semester 2022	Common core course + Option's courses
Spring Semester 2023	Option's courses + pre-internship (equivalent to 2 months full time, can be done in part time)
End of June 2023	Pre-internship defense in front of a common jury (possibility of a new defense 2 weeks later if unsuccessful)
June / Sept. 2023	The student must have validated his/her pre-internship and the 44 ECTS of courses to start the Master's project
Summer 2023 – June 2024	Master's thesis (1 year full time)