UNIL | Université de Lausanne
Ecole de biologie

Master of Science in Molecular Life Sciences
2012-2013

The Master program has the minimum duration of 3 semesters and comprises 90 ECTS :

possibility to obtain a distinction in bioinformatics, microbiology or integrative biology under the conditions mentioned at the bottom of this page

- 16 ECTS : Module 1 (Compulsory courses + Optional courses)
- 14 ECTS : Module 2 (First step project)
- 15 ECTS : Module 3 (Compulsory courses + Optional courses)
- 45 ECTS : Personal research project (Master thesis)

Autumn Semester (semester 1)

25.01.13

	Course	Hours per semester C	E/S	PW	Lo	Teaching Staff	ECTS Credits	Limited nb of students
MODULE 1	**General and common activities - Compulsory**							
	Retreat and BIG Seminars	-	-	-	L	**Fankhauser C., …**		
	Sequence a Genome (Part I)	14	30	-	L	**van der Meer J.,** Robinson-Rechavi M., Falquet L.	**3**	
	Write a Review	15	-	42	L	**Fankhauser C.,** Sohrmann M., tutors	**4**	
	Free time for reading scientific articles etc… (14 x 4 hours)	-	-	56				
	Subtotal	**29**	**30**	**98**			**7**	
	Optional (choice -> 9 credits)							
	Plant Interactions with Microbes and Insects	14	-	-	L	**Keel C.**, P. Reymond	1.5	
	Genetics and Evolution of Insect and Plant Development	14	-	-	L	**Benton R.**, Geldner N.	1.5	
	Development of the Nervous System	14	-	-	L	**Braissant O.**	1.5	
	Plant Functional Genetics	14	-	-	L	**Poirier Y.**	1.5	
	Human Molecular Genetics	14	-	-	L	**Rivolta C.**, Chrast R.	1.5	
	Biotechnology	14	-	-	L	**Poirier Y.,** Mermod N.	1.5	
	Protein Homeostasy and Adaptation of Organisms to Stress	14	-	-	L	**Goloubinoff P.**	1.5	
	Elements of Bioinformatics *(compulsory for Bioinformatic distinction)*	36	-	20	G	**Bairoch A.,** Blatter MC.	4.5	
	Advanced Data Analysis in Biology I-II-III-IV *(compulsory for Bioinformatic distinction)*	26	-	26	L	**Abreu Nunes J., Schütz F.**	4.5	
	Bacteria Genomes and Genome Evolution	14	-	-	L	**van der Meer J.**	1.5	
	Immunology with Relevance to Infectuous Diseases	14	-	-	L	**Nardelli D.**, Roger T.	1.5	
	Advanced Bacterial Genetics and Small RNA Regulation	14	-	-	L	**Collier J.**, Reimmann C.	1.5	
	Virus-Host Interactions	14	-	-	L	**Kunz S.**, Herr W., Meylan P.	1.5	
	Fungal Virulence and Pathogenicity	14	-	-	L	**Sanglard D.**	1.5	
	Total						**16**	
MODULE 2	**Pratical project**							
	First Step Project	-	-	250		**Fankhauser C.**	**14**	
OR	First Step Project in Bioinformatics					**Robinson-Rechavi M.,** Lisacek F. Chopard B, Palagi P.		

C = Course
E/S = Exercise/Seminar
PW = Practical Work
Lo = Location (L = registration in Lausanne, G = registration in Geneva)

Spring Semester (semester 2)

MODULE 3

Course	Hours per semester C	E/S	PW	Lo	Teaching Staff	ECTS Credits	Limited nb of students
General and common activities - Compulsory							
Sequence a Genome (Part II)	14	42	-		**van der Meer J.,** Robinson-Rechavi M., …	3	
Write a fellowship	7	-	21		**Fankhauser C.,** Sohrmann M., tutors	3	
Subtotal	**21**	**42**	**21**			**6**	
Optional (choice -> 9 credits)							
From Receptors to Genes: selected chapters of molecular endocrinology	24	-	-	L	**Mermod N.**	3	
Genomics, Proteomics and Quantitative Genetics	24	-	-	L	**Franken P.**, Tafti M., Quadroni M., Goudet J., Weber J., Harshman K.,	3	
Nutrition from a Genomic Perspective	24	-	-	L	**Pralong F.**, Kaessmann H., Xenarios I., Vergères G., Kussmann M.	3	
Recombinant Proteins: Applications in Research and Medicine	12	-	-	L	**Corthésy B.**	1.5	
Scientific Mediation and Communication **(MSc BEC)**	28	-	-	L	**Michalik L.**	3	3
The Effects of the Environment on Development	24	-	-	L	**Fankhauser C.,** Hardtke C.	3	
Herbivory: Why is the Earth Green	24	-	-	L	**Farmer E.**	3	
Institute Seminars	-	-	-	L	**Fankhauser C.**		
Bioinformatics for MS Data Analysis	21	-	21	G	**Palagi P.,** Müller M.	3	
Introduction to Systems Biology	8	14	-	G	**Lisacek F.**	2	
Selected Chapters in Bioinformatics	34	14	-	G	**Lisacek F.,** Palagi P.	3	
Phylogeny and Comparative Methods **(MSc BEC)**	7	14	-	L	**Salamin N.**	1.5	
Datamining for Protein Function Prediction	4	-	76	G	**Bairoch A.,** Lane L.	5	
Molecular Genetics of Populations	20	-	20	G	**Sanchez-Mazas A.**	5	
Phylogeny and Molecular Evolution	20	-	20	G	**Montoya J.**	5	
Anti-Infective Agents	14	-	-	L	**Sanglard D.**, Hauser P., Greub G., Ciuffi A.	1.5	
Bacterial Virulence and Pathogenesis	14	-	-	L	**Greub G.**, Hauser P.	1.5	
Cytoskeleton from Microbes to Man	14	-	-	L	**Martin S.,** Collier J.	1.5	
Epidemiology	14	-	-	L	**Blanc D.**, Hauser P., Meylan P., Zanetti G., Sanglard D.	1.5	
Microbes as Tools in Experimental Biology	14	-	-	L	**Sanglard D.,** Ciuffi A.	1.5	
Microbial Ecology	-	-	35	L	**van der Meer J.,** Sentchilo V.	1.5	
Viral Pathogenesis and Emerging Viruses	14	-	-	L	**Kunz S.,** Gouttenoire J., Telenti A., Ciuffi A.	1.5	
Total						**15**	

Spring Semester (semester 2) and Autumn Semester (semester 3)

MODULE 4

Course		ECTS Credits
Compulsory personal research project		
Master Thesis	**Thesis Director**	**45**

Distinction **Bioinformatics** :
first semester : follow the 3 common compulsory courses and the 2 specialized "optional "courses (in blue)
do the first step project in the Bioinformatics program
second semester : follow optional courses among all proposed (indicative blue color for courses with bioinformatics contain) .
Master thesis : must belong to the tagged Master thesis "Bioinformatics"

Distinction **Microbiology** :
first semester : follow the 3 common compulsory courses and "optional "courses
free choice for the first step project
second semester : follow optional courses among all proposed.
At the end of the two semesters **at least 12 ECTS must be obtained on optional specialized courses (in yellow)**
Master thesis : must belong to the tagged Master thesis "Microbiology"