

# Master of Science in Molecular Life Sciences - Autumn 2024 -

<u>TEACHING</u>	<u>ABBREVIATION</u>	<u>RESPONSIBLE</u> <i>Teaching Staff</i>	<u>ROOM</u>	<u>HOURS</u>		Other
<b>COMPULSORY COURSES (MODULE 1)</b>					<b>SEMESTER</b>	
Retreat MSc MLS		R. Benton	17.09.2024, from 09:00am, outside UNIL (Leysin)		1	
Data Analysis		S. Bergmann	BIO/Amphi	8 C + 8 E	1	BEC
Sequence a Genome I / II	SAGE I, II	P. Engel, tutors	POL/201 <b>except 13.12.24 : BIO/Amphi</b>	36 C + 72 E	1	
Write a Review		R. Benton, tutors	consult the responsible <b>except 23.09. to 09.10.24 : POL/336</b>	15 C/contact 42 pers work	1	
Critical Readings of Scientific Literature (14 x 4 hours)				56h	1	
First Step Project		all Pls		250h	1	
<b>OPTIONAL COURSES (MODULE 3)</b>						
Biotechnology	BIOTECH	Y. Poirier, G. Resch, J.-W. Veening, J. van der Meer	POL/319	18 C	1-3	
Chromosome Organization and Dynamics	COD	S. Gruber	POL/336 <b>except 22.11.24 : Lab S. Gruber</b>	6 C + 3 E + 8 PW	1-3	
CRISPR-Cas9 Genome Editing	CRISPR	J. van Leeuwen	POL/209,455,457,459 <b>except 04.11. and 09.12.24 : POL/334</b>	4 C + 4 E + 8 PW	1-3	
Development of the Nervous System	NERV	O. Braissant	POL/336	14 C	1-3	
Genomics, Proteomics and Quantitative Genetics	GEN	P. Franken, M. Quadroni, J. Marquis, M.C. Gambetta	POL/336	21 C + 3 E	1-3	
Modeling of Plant Growth	MPG	M. Majda	POL/201	12 C + 12 E	1-3	
Plant and Animal Domestication: From History to Molecular Mechanisms	PAD	S. Soyk	POL/336	12 C + 12 E	1-3	BEC
Plant Functional Genetics	PFG	Y. Poirier	POL/334	14 C	1-3	
Proteins : from Structural Determination to Molecular Dynamic Simulations	PSD	J. Santiago Cuellar, V. Zoete, U. Roehrig, M. Cuendet	POL/201	12 C + 12 E	1-3	
Scientific Research in all its Forms for Biology (Sciences2 - in French only)	SRF	D. Preissmann	GEO/1620	16 C	1-3	Sciences2
Social Innovation Lab	SIL	E. Romon, J. Petty, A. Headon	Room in Villanova	26 C	3	HUB
<b>SPECIALISATION "BIOINFORMATICS"</b>						
Advanced Data Analysis	ADA	G. Ciriello	POL/334	8 C + 8 PW	1-3	BEC
Advanced Python Programming	APP	N. Salamin	POL/321	10 C + 18 E	1-3	BEC
Population Genetics and Dynamics	PGD	J. Goudet	POL/321	9 C + 20 E	1-3	BEC
Theory and Practice in Gene Expression Analyses	TPGE	D. Gfeller, S. Carmona	POL/334	4 C + 32 E	1-3	
<b>SPECIALISATION "MICROBIOLOGY"</b>						
Advanced Microbial Genetics	AMG	J. Collier, S. Pelet	15 + 29.10.24 : POL/336 22.10.24 : POL/201 05.11.24 : POL/315.1	16 C	1-3	
Bacterial Genomes and Genome Evolution	BGG	J. van der Meer	POL/201	6 C + 10 E	1-3	
Bacterial Virulence and Pathogenesis	BVP	G. Greub, N. Jacquier, D. Jacot	Bugnon 48, level 5, room 502	14 C + 2 E	1-3	
Design and Build a Synthetic Biological System II (iGEM Project)	IGEM	Y. Schaerli	POL/321	8 C + 16 E	3	BSc
Fungal Virulence and Pathogenicity	FVP	F. Lamoth, A. Coste, P. Hauser	Bugnon 48, level 5, room 502	10 C + 4 E	1-3	
Immunology and Infectious Diseases	IMMU	T. Roger, M. Perreau, J. Di Domizio	POL/202 <b>except 12.11.24 : POL/336</b>	16 C	1-3	
Mechanisms and Principles of Yeast Cell Biology	MPY	A. Vjestica, S. Gasser	POL/319	14 C	1-3	
Microbes as Tools in Experimental Biology	EXP	A. Coste, A. Ciuffi	Bugnon 48, level 5, room 502	8 C + 8 E	1-3	
Plant Interactions with Microbes and Insects	PMI	C. Keel, P. Reymond	POL/201	14 C	1-3	
Viral Pathogenesis and Emerging Viruses	VPE	A. Ciuffi, J. Gouttenoire, V. Cagno	Bugnon 48, level 5, room 502	8 C + 8 E	1-3	
Virus-Host Interactions	VHI	J. Gouttenoire	POL/336	16 C	1-3	
<b>Optional support :</b> Introduction to R (Introduction to Data Analysis)		F. Schütz	GEN/C	24 E	1	BSc2
Training in Animal Experimentation (RESAL Module 1)		M.-C. Broillet	From 10.12. to 20.12.24 : online <b>except 10.12.24 - 16:15-17:00 pm : Bugnon 19, Auditorium Decker</b>			MSc MB (Dec-Feb)
<b>COMPULSORY COURSES (MODULE 4 - ONLY IN THE 3rd SEMESTER)</b>						
Write a Fellowship		R. Benton, A.-S. Malaspinas, C. Fankhauser, C. Bertelli Lombardo, tutors	consult the responsible <b>except 19.09.24 (09:00-10:00 am) : POL/336</b>  Oral Presentations : 25.11.24 : POL/459 26.11.24 : POL/336	1 C/contact 42 pers work	3	
Meeting of School of Biology : 17.09.2024			POL/D		1	All MSc
Introduction to Biological Security : 20.09.2024		M. Van Bemmelen	POL/D	2 C	1	All MSc

**Schedule, start of lessons :**

UNIL-Sorge : 08:00 - 09:00 - 10:15 - 11:15 - 12:15 - 13:15 - 14:15 - 15:15 - 16:15 - 17:15  
Bugnon : 08:15 - 09:15 - 10:15 - 11:15 - 12:15 - 13:15 - 14:15 - 15:15 - 16:15 - 17:15

**Building :**

BIO: Biophore                      MAX: Amphimax  
GEN: Genopode                    POL: Amphipôle

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## WEEK 1: 16.09 to 20.09

	mo 16	tu 17	we 18	th 19	fr 20			
08:00	Jeune Fédérale	Meeting School of Biology		SAGE I / II: UNIX I	Data Analysis (lecture; give exercises)			
10:15		Retreat				SAGE I / II: UNIX I	IGEM	
12:15								
14:15								Intro Biological Security
16:15								
18:15								

## WEEK 2: 23.09 to 27.09

	mo 23	tu 24	we 25	th 26	fr 27			
08:00	Write a Review (Literature survey)	SAGE I / II: UNIX II	Write a Review (meet with tutor - can be shifted)	SAGE I / II: Illumina assembly	Data Analysis (lecture; give exercises)			
10:15						Intro to R	IGEM	
12:15								Data Analysis (discussion)
14:15								
16:15								SAGE I / II: Illumina assembly
18:15								

## WEEK 3: 30.09 to 04.10

	mo 30	tu 01	we 02	th 03	fr 04			
08:00	Write a Review (Figure preparation)	SAGE I / II: Illumina assembly	Write a Review (Oral presentation)	SAGE I / II: ONT assembly	Data Analysis (lecture; give exercises)			
10:15						Intro to R	IGEM	
12:15								Data Analysis (discussion)
14:15								
16:15								SAGE I / II: Illumina assembly
18:15								

## WEEK 4: 07.10 to 11.10

	mo 07	tu 08	we 09	th 10	fr 11			
08:00	Write a Review (Scientific writing)	SAGE I / II: ONT assembly	Write a Review (meet with tutor - can be shifted)	SAGE I / II: Genome annotation	Data Analysis (lecture; give exercises)			
10:15						Intro to R	IGEM	
12:15								Data Analysis (discussion)
14:15								
16:15								SAGE I / II: Genome annotation
18:15								

## WEEK 5: 14.10 to 18.10

	mo 14	tu 15	we 16	th 17	fr 18			
08:00	APP	AMG (POL/336)	PSD	BVP	BIOTECH			
10:15						Intro to R	IGEM	
12:15								EXP
14:15								
16:15								SRF
18:15								

## WEEK 6: 21.10 to 25.10

	mo 21	tu 22	we 23	th 24	fr 25			
08:00	PGD	PAD	IMMU	PSD	BVP			
10:15						Intro to R	IGEM	
12:15								EXP
14:15								
16:15								SRF
18:15								

## WEEK 7: 28.10 to 01.11

	mo 28	tu 29	we 30	th 31	fr 01			
08:00	APP	AMG (POL/336)	PSD	BVP	BIOTECH			
10:15						Intro to R	IGEM	
12:15								EXP
14:15								
16:15								SRF
18:15								

## Master of Science in Molecular Life Sciences - Autumn 2024 -

**WEEK 8: 04.11 to 08.11**

	mo 04	tu 05	we 06	th 07	fr 08
08:00	PGD	PSD	BVP BIOTECH	VHI MPG	MPY GEN
10:15	PAD		Intro to R		
12:15					
14:15	APP	AMG (POL/315.1) TPGE III PMI	EXP TPGE III	CRISPR (POL/334)	TPGE III COD
16:15			SRF		
18:15					

**WEEK 9: 11.11 to 15.11**

	mo 11	tu 12	we 13	th 14	fr 15
08:00	APP	IMMU (POL/336) PSD	BIOTECH	BGG NERV	MPY GEN
10:15		SIL	FVP	Intro to R	
12:15					
14:15	PGD	TPGE IV PMI	VPE TPGE IV	VHI MPG	TPGE IV COD
16:15	PAD		SRF		
18:15					

**WEEK 10: 18.11 to 22.11**

	mo 18	tu 19	we 20	th 21	fr 22
08:00	PGD	PSD	FVP PFG	VPE MPG	ADA GEN COD
10:15	PAD	SIL	Intro to R		
12:15					
14:15	APP	PMI	VPE	NERV	COD
16:15			SRF		
18:15					

**WEEK 11: 25.11 to 29.11**

	mo 25	tu 26	we 27	th 28	fr 29
08:00	APP	SAGE I / II	FVP PFG	SAGE I / II	ADA
10:15		SIL	Intro to R		
12:15					
14:15	PGD	Second year students: Write a Fellowship Oral Presentations POL/336 SAGE I / II	VPE	SAGE I / II	
16:15	PAD	Second year students: Write a Fellowship Oral Present. POL/459	SRF		
18:15					

**WEEK 12: 02.12 to 06.12**

	mo 02	tu 03	we 04	th 05	fr 06
08:00	PGD	SAGE I / II	FVP PFG	SAGE I / II	ADA
10:15	PAD	SIL			
12:15					
14:15		SAGE I / II	CRISPR	Intro to R	CRISPR
16:15	CRISPR		SRF	SAGE I / II	
18:15					

**WEEK 13: 09.12 to 13.12**

	mo 09	tu 10	we 11	th 12	fr 13
08:00		SAGE I / II	PFG	SAGE I / II	ADA
10:15		SIL			
12:15					
14:15		SAGE I / II		SAGE I / II	SAGE I / II
16:15	CRISPR (POL/334)				Pour info: Remise BSc biol UNIL dès 17h
18:15					

**WEEK 14: 16.12 to 20.12**

	mo 16	tu 17	we 18	th 19	fr 20
08:00					
10:15		SIL			
12:15					
14:15					
16:15					
18:15					