

Curriculum 'M Sc in Biology' (120 ECTS)

GENERAL STRUCTURE	ECTS	Status	Course controller
CORE CURRICULUM	36		
a) Compulsory courses	21		
MB-1: Module Generic skills	9	Compulsory	KZ
MB-2: Computer tools	3	Compulsory	JK
MB-3: Module Seminars	6	Compulsory	TT
MB-4: Laboratory methods	3	Compulsory	FK
b) Elective courses	15		
MB-5: Special skills	3 to 15	Elective	N.N.
MB-6: Excursion	6	Elective	RB
MB-7: Internship	6	Elective	KZ
MB-8: Free elective	max. 6	Elective	KZ
SPECIALISATIONS <i>(choose two from two different groups)</i>	24		
Group I			
MB-9: Sustainable agriculture	12	Elective	BM-M/BB
MB-10: Animal behaviour	12	Elective	RB/KZ
Group II			
MB-11: Module Chemical ecology	12	Elective	TT
MB-12: Module Biology-anthropology	12	Elective	AA
Group III			
MB-13: Module Ecology, evolution & biodiversity	12	Elective	N.N.
MB-14: Module Parasitology	12	Elective	JK
MASTER THESIS	60		
Total MSc in Biology	120		

CORE CURRICULUM (36 ECTS)

a) Compulsory courses (21 ECTS)

Modules/courses	Hours of courses	Semester	ECTS per module/course	Instructor	Participant / contributor	Evaluation
MB-1 Module Generic skills			9 ECTS			
Statistics	30	A	3	Dr R. Slobodeanu		CA (graded)
Scientific writing	30	A	3	Prof. K. Zuberbühler		CA (graded)
Seminars by externals	28	A and S	3	Prof. T. Turlings	Dr R. Knetsch	CA (pass)
MB-2 Computer tools (choose one)			3 ECTS			
Bioinformatics tools	30	A	3	Prof. D. Croll and PD Dr N. Ivanov		CA (graded)
Models and parameter estimation	30	A	3	Prof. J. Koella		CA (graded)
MB-3 Module Seminars (choose two)			6 ECTS			
Ecology and biochemistry	30	A	3	Prof. T. Turlings	Profs F. Kessler, B. Mauch-Mani	CA (graded)
Ecology and evolution	30	A	3	Prof. K. Zuberbühler and Dr N. Truskanov	Profs J. Koella, B. Benrey	CA (graded)
Ecology and biodiversity	30	A	3	Prof. P. Junier	Profs S. Rasmann, D. Croll et Dr I. Koenig	CA (graded)
MB-4 Laboratory methods (choose one)			3 ECTS			
Molecular methods	7 half days	A	3	Profs F. Kessler and Dr P. Longoni		CA (graded)
Natural substances analyses	7 half days	A	3	Profs T. Turlings and S. von Reuss	Prof. G. Roeder	CA (graded)

b) Elective courses (15 ECTS)

MB-5 Special skills			3-15 ECTS			
Methods in biodiversity and conservation	28	A	3	Prof. C. Praz		CA (graded)
Spatial modelling of natural systems - 1 (in French)	7 half days	A	4	Prof. M. Bouzelboudjen		CA (graded)
Spatial modelling of natural systems - 2 (in French)	28	S	3	Prof. M. Bouzelboudjen		CA (graded)
Microscopy	7 half days	A	3	Prof. M. Dadras		CA (graded)
Non-validated courses of MB-2, MB-3 and MB-4		A	max. 9			CA (graded)
MB-6 Excursion (choose one maximum**)			max. 6 ECTS			
EXC Tropical ecology	7 days*	A	6	Prof. B. Benrey		CA (pass)
EXC Marine biology	7 days*	S	6	Prof. R. Bshary		CA (pass)
EXC Mediterranean ecology	7 days*	S	6	MER W. Müller		CA (pass)
EXC Alpine ecology	7 days*	S	6	Dr R. Bergmüller		CA (pass)

Master of Science in Biology (from the academic year 2018)

Modules/courses	Hours of courses	Semester	ECTS per module/course	Instructor	Participant / contributor	Evaluation
MB-7 Internship			6 ECTS			
Approved by course controller	160 total	A or S	6	Prof. K. Zuberbühler		CA (graded)
MB-8 Free electives			max. 6 ECTS			
Approved by course controller ¹⁾		A or S	3 or 6	Prof. K. Zuberbühler		

SPECIALISATION (24 ECTS)

(choose two from two different groups)

Group I		12 ECTS				
MB-9 Sustainable agriculture			12 ECTS			
Integrated pest management (course + workshop)	30	S	4	Prof. T. Turlings		Written, 2 hours
Plant domestication and insect interactions	30	S	2	Prof. B. Benrey		
Soil and water management	30	S	3	Profs P. Brunner and D. Hunkeler		
Plant pathology	30	S	3	Prof. B. Mauch-Mani		
MB-10 Animal behaviour			12 ECTS			
Integrative approach to animal behaviour	40	S	4	Profs R. Bshary and K. Zuberbühler		CA (graded)
Behavioural ecology	40	S	4	Prof. R. Bshary		
Comparative cognition	40	S	4	Prof. K. Zuberbühler		
Group II		12 ECTS				
MB-11 Module Chemical ecology			12 ECTS			
Basics of chemical ecology + labs	7 half days	S	2	Prof. T. Turlings		Written, 2 hours
Biosynthesis and function of secondary compounds	7 half days	S	2	Profs F. Kessler and N.N.	Dr P. Longoni	
Recent advances in chemical ecology	7 half days	S	2	Prof. T. Turlings		CA (graded)
Molecular genetics of secondary metabolism + labs	7 half days	S	3	Prof. N.N.	Dr P. Longoni	CA (graded)
Natural products chemistry + labs	7 half days	S	3	Prof. S. von Reuss		CA (graded)
MB-12 Module Biology-anthropology			12 ECTS			
Environmental problems interdisciplinary perspective: directed readings ²⁾	28	S	4	Profs A. Aebi and E. Hertz		CA (graded)
Anthropologie thématique: Anthropology of agriculture and food	28	S	4	Drs C. D. Bentia and J. Forney		CA (graded)
Anthropologie thématique - Séminaire de socio-anthropologie de l'aide internationale (in French)	28	A	4	Prof. M. Fresia		CA (graded)
Anthropologie thématique - Une anthropologie politique de la nature : ONG, réseaux et mouvements sociaux environnementaux (in French)	28	A	4	Dr C. Dubuis		CA (graded)

Master of Science in Biology (from the academic year 2018)

Modules/courses	Hours of courses	Semester	ECTS per module/course	Instructor	Participant / contributor	Evaluation
Group III						
			12 ECTS			
MB-13 Module Ecology, evolution & biodiversity			12 ECTS			
From genes to ecosystems	30	S	3	Prof. S. Rasmann		CA (graded)
Microbial ecology	30	S	3	Prof. P. Junier		CA (graded)
Conservation biology and biodiversity	30	S	3	Dr C. Praz		CA (graded)
Evolutionary ecology	30	S	3	Prof. D. Croll		CA (graded)
MB-14 Module Parasitology			12 ECTS			
Parasitoid-host interactions	30	S	3	Prof. B. Benrey		CA (graded)
Evolution of parasites	30	S	3	Prof. N.N.		CA (graded)
Topics in parasitology	30	S	3	Prof. J. Koella		CA (graded)
Experimental parasitology	28	S	3	Prof. J. Koella and D. Croll		CA (graded)

MASTER THESIS (60 ECTS)

Modules/courses	Hours of courses	Semester	ECTS per module/course	Instructor	Participant / contributor	Evaluation
MB-16 Master thesis³⁾		A and S	60			CA (graded)

Total MSc in Biology	120 ECTS
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Master of Science in Biology

(from the academic year 2018)

Important remarks

When an evaluation of a course chosen in the compulsory modules MB-2, MB-3 et MB-4 is failed after a second attempt and not compensable, students have the possibility to choose another course in the concerned module until all choices are exhausted.

All elective courses are validated only with a sufficient mark.

Transitional provisions

For courses with a content that has changed from earlier years, the students enrolled in earlier years must be examined on the earlier content.

Abbreviations and notes

1) Free elective courses must be chosen from courses that are evaluated independently of other courses of the same module.

2) Compulsory for students without relevant background in social anthropology

3) **Master thesis must be supervised by a professor of the Institute of Biology**

* Travel time to be added for excursions abroad

** Check availability

CA (pass) = continuous assessment without grading, modalities fixed in course descriptives

CA (graded) = continuous assessment that is graded, modalities fixed in course descriptives

A = autumn semester

S = spring semester

Informations

Master coordinator: **Prof. K. Zuberbühler** (klaus.zuberbuehler@unine.ch)

Exams and regulation

Candidates must be registred in IS-Academia for both courses and exams.

For regulation, please consult the homepage of the Faculty of Sciences, www.unine.ch/sciences ("règlement d'études et d'examens" and existing directives) or the administrative staff of the Faculty.