

Faculty of Sciences

Master of Science in Biology

Language of instruction: English

Programme version 9

## 1 General Courses 18 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003345 <b>Advanced Biostatistics</b> <i>Carl Vangestel -- Department of Biology</i>	5		2	A:1	150
2	C003080 <b>Programming</b> <i>Peter Dawyndt -- Department of Mathematics, Computer Science and Statistics</i>	5	UKV	1	C:1	150
3	C003302 <b>Academic Grant Writing</b> <i>Matthew Shawkey -- Department of Biology</i>	3		1	A:2	90
4	C003334 <b>Scientific Communication</b> <i>Danny Haelewaters -- Department of Biology</i>	5		2	A:1	150

## 2 Minors 30 credits

Subscribe to 30 credit units from 1 minor from the following list. Subject to approval by the faculty.

One combination between minors and majors is possible:

- Minor Bio-inspired Innovation and Sustainability - Major General Biology
- Minor Research - Major Biodiversity and Evolutionary Biology
- Minor Research - Major Global Change Ecology
- Minor Research - Major Functional Biology

Distribution over the first standard learning path is depending on the major.

### 2.1 Minor Research 30 credits

Subscribe to 30 credit units from no less than 1 and no more than 2 modules from the following list. Subject to approval by the faculty.

#### 2.1.1 Elective Courses Research

Subscribe to no more than 30 credit units from the following list.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C004098 <b>Professional Internship I [en, nl]</b> <i>Luc Lens -- Department of Biology</i>	5		2	A:J	150
2	C004099 <b>Professional Internship II [nl]</b> <i>Luc Lens -- Department of Biology</i>	10		2	A:J	300
3	C004100 <b>International Project</b> <i>Marleen De Troch -- Department of Biology</i>	5			A:J	150
4	C002755 <b>Biological Excursions in the Human Brain</b> <i>Robrecht Raedt -- Department of Head and Skin</i>	5			(A:2) <sup>d</sup>	135
5	C004082 <b>Evolution of Primates and Paleo-anthropology</b> <i>Dominique Adriaens -- Department of Biology</i>	3			A:2 <sup>a</sup>	75
6	C002769 <b>Immunology and Pathology</b> <i>Martin Guilliams -- Department of Molecular Biology</i>	5			A:2 <sup>a</sup>	135
7	C002770 <b>Insect Physiology [nl]</b> <i>Dirk de Graaf -- Department of Biochemistry, Physiology and Microbiology</i>	5			A:1 <sup>a</sup>	135
8	C002387 <b>International Course</b> <i>Dries Bonte -- Department of Biology</i>	5			A:J	150
9	C004466 <b>Limnology</b> <i>Dirk Verschuren -- Department of Biology</i>	4			A:2	120
10	C003874 <b>Marine Ecology</b> <i>Carl Van Colen -- Department of Biology</i>	6			A:1	150

11	C002774	Microbial Ecology <i>Anne Willems -- Department of Biochemistry, Physiology and Microbiology</i>	5		A:1 <sup>a</sup>	140
12	C002775	Molecular Plant Physiology	5			135
13	C004412	Introduction to Multivariate Data Analysis	3			90
14	C002777	Mycology: Basidiomycota <i>Annemieke Verbeken -- Department of Biology</i>	5		A:1	135
15	C002778	Ornithology <i>Luc Lens -- Department of Biology</i>	5		A:2 <sup>a</sup>	135
16	C004386	Phylogenetics and Evolution of Flowering Plants <i>Lars Chatrou -- Department of Biology</i>	5		(A:2) <sup>d</sup>	145
17	C001045	Teledetection: Image Registration and Processing [nl] <i>Tim Van de Voorde -- Department of Geography</i>	5		A:2	150
18	E084760	Geographic Information Systems (partim) [nl] <i>Nico Van de Weghe -- Department of Geography</i>	3		A:1	90
19	C004081	Biodiversity of Aquatic Food Webs: from Algae to Marine Mammals <i>Marteen De Troch -- Department of Biology</i>	3		A:1	90
20	C004385	Laboratory Animal Science <i>Katleen Hermans -- Department of Pathobiology, Pharmacology and Zoological Medicine</i>	9		A:J	270
21	C003306	Advanced Cell Biology <i>Geert van Loo -- Department of Molecular Biology</i>	5		(A:1) <sup>d</sup>	150
22	C003307	Functional Diversity of Prokaryotes <i>Anne Willems -- Department of Biochemistry, Physiology and Microbiology</i>	4		(A:1) <sup>d</sup>	120
23	I002457	Vegetation Science	3			90
24	I002691	Nature Conservation	4			120
25	C004009	History and Philosophy of Sciences [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>	3		B:2	90
26	C004083	History and Philosophy of Biology <i>Gertrudis Van de Vijver -- Department of Philosophy and Moral Sciences</i>	3		A:2	90
27	C004102	Practical Skills in Academic Biological Education [nl] <i>Dominique Adriaens -- Department of Biology</i>	3		A:J	90
28	C004103	Introduction to Biomimicry <i>Liliana D'Alba Altamirano -- Department of Biology</i>	3		A:1	90
29	C004411	Writing Academic Papers <i>Danny Haelewaters -- Department of Biology</i>	4		A:1	120
30	A005569	Global Minds <i>Ines Keygnaert -- Department of Public Health and Primary Care</i>	5	UKV	A:2	150

## 2.1.2 Elective Courses UGent and other Universities

Subscribe to courses for no more than 30 credit units to be chosen from study programmes of UGent including the minor Bio-inspired Innovation and Sustainability, major General Biology, [the Ghent University elective courses](#) or from study programmes of other universities of the Flemish Community or (online) courses from [Erasmus+ partner universities](#). Of which at least 20 credits from the field of biology.

## 2.2 Minor Bio-inspired Innovation and Sustainability

30 credits

Subscribe to 14 credit units from no less than 1 and no more than 2 modules from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E076450 Basic Entrepreneurship	3	UKV	1		90
2	E076460 Dare to Venture	4		1		120
3	C004101 Bio-inspired Project <i>Matthew Shawkey -- Department of Biology</i>	9		1	A:J	270

### 2.2.1 Elective Courses

Subscribe to no less than 7 and no more than 14 credit units from the following list.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C004103 Introduction to Biomimicry <i>Liliana D'Alba Altamirano -- Department of Biology</i>	3			A:1	90
2	F000752 Environmental Economics and Policy [nl] <i>Brent Bleys -- Department of Economics</i>	4			B:2	120
3	K001339 Sustainability Thinking	5	UKV			150

4	K001013	Politics of Sustainability <i>Erik Paredis -- Department of Political Sciences</i>	6			180
5	F000859	Corporate Social Responsibility [nl] <i>Saskia Crucke -- Department of Marketing, Innovation and Organisation</i>	3		A:2	90
6	I002606	Environmental Risk Assessment <i>Karel De Schampelaere -- Department of Animal Sciences and Aquatic Ecology</i>	5		A:1	150
7	I002789	Microbial Ecology and Environmental Sanitation <i>Tom Defoirdt -- Department of Biotechnology</i>	4		A:1	120
8	E630095	Co-Creation [en, nl] <i>Jan Detand -- Department of Industrial Systems Engineering and Product Design</i>	6	UKV	A:J	180
9	I002702	Clean Technology: Assessment Methods	3			90
10	I002692	Forest and Nature Policy [nl] <i>Myriam Dumortier -- Department of Environment</i>	5		A:1	150
11	F000768	Marketing Management [nl] <i>Maggie Geuens -- Department of Marketing, Innovation and Organisation</i>	6		A:1	180
12	E640940	Business Management [nl] <i>Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design</i>	3		A:2	90
13	I001967	Intellectual Property and Valorization	3			90
14	I002718	Economics and Management of Natural Resources <i>Stijn Speelman -- Department of Agricultural Economics</i>	4		A:2	120
15	I002674	Product Innovation in the Food Industry	7			210
16	I002717	Functional Foods <i>John Van Camp -- Department of Food Technology, Safety and Health</i>	5		A:2	150
17	I002777	Human Nutrition	5			150
18	E066012	Materials Technology [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	4		A:2	120
19	E065460	Rational Use of Materials <i>Tom Depover -- Department of Materials, Textiles and Chemical Engineering</i>	5		A:1	150
20	I002726	Food Fermentations <i>Katleen Raes -- Department of Food Technology, Safety and Health</i>	4		A:2	120
21	E084580	Sustainable Cities	5			150
22	A005569	Global Minds <i>Ines Keygnaert -- Department of Public Health and Primary Care</i>	5	UKV	A:2	150

## 2.2.2 Elective Courses UGent and other Universities

Subscribe to courses for no more than 7 credit units to be chosen from study programmes of UGent including [the Ghent University elective courses](#) or from study programmes of other universities of the Flemish Community or (online) courses from [Erasmus+ partner universities](#).

## 3 Majors 42 credits

Subscribe to 42 credit units from 1 major from the following list. Subject to approval by the faculty.

One combination between minors and majors is possible:

- Minor Bio-inspired Innovation and Sustainability - Major General Biology
- Minor Research - Major Biodiversity and Evolutionary Biology
- Minor Research - Major Global Change Ecology
- Minor Research - Major Functional Biology

### 3.1 Major General Biology 42 credits

Subscribe to 42 credit units from the following list, distributed over the first standard learning path as follows:

- no less than 30 and no more than 42 credit units in year 1,
- no more than 12 credit units in year 2.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003310 Taxonomy and Systematics <i>Koen Sabbe -- Department of Biology</i>	4		1	A:1	120
2	C003311 Phylogenetics <i>Olivier De Clerck -- Department of Biology</i>	4		1	A:1	120
3	C003312 Integrated Biodiversity Research Project <i>Kenny Bogaert -- Department of Biology</i>	5		1	A:2	150
4	C003313 Biodiversity Patterns in Space and Time <i>Koen Sabbe -- Department of Biology</i>	4		2	A:1	120

5	C003314	Paleobiology <i>Thijs Vandenbroucke -- Department of Geology</i>	5	1	A:1	150
6	C003315	Biodiversity Conservation <i>Ana Rita Giraldes Simoes -- Department of Biology</i>	4	1	A:2	120
7	C003316	Microevolution and Speciation <i>Frederik Hendrickx -- Department of Biology</i>	6	1	A:1	180
8	C004274	Evolutionary Morphology <i>Lars Chatrou -- Department of Biology</i>	5	2	A:1	150
9	C003319	Evolutionary Developmental Biology <i>Paul Witten -- Department of Biology</i>	5	1	A:2	150
10	C003320	Climate Change <i>Dirk Verschuren -- Department of Biology</i>	4	1	A:2	120
11	C003321	Spatial Ecology <i>Dries Bonte -- Department of Biology</i>	5	1	A:1	150
12	C003322	Ecosystem Dynamics <i>Elie Verleyen -- Department of Biology</i>	5	1	A:1	150
13	C003323	Ecosystem Functioning <i>Tom Moens -- Department of Biology</i>	5	1	A:1	150
14	C003324	Behavioural Ecology <i>Lucy Mitchell -- Department of Biology</i>	4	1	A:2	120
15	C003325	Ecological Modelling <i>Dries Bonte -- Department of Biology</i>	7	1	A:2	210
16	C003326	Conservation Genetics <i>Phillippe Helsen -- Department of Biology</i>	5	2	(A:2) <sup>d</sup>	150
17	C003327	Ecosystem Management and Services <i>Sander Jacobs -- Department of Biology</i>	7	2	A:J	210
18	C003328	Plant Developmental Biology <i>Tom Beeckman -- Department of Plant Biotechnology and Bioinformatics</i>	5	1	A:2	150
19	C003347	Biology of Ageing <i>Bart Braeckman -- Department of Biology</i>	4	1	A:2 <sup>a</sup>	120
20	C003329	Physiological Regulation in Plants <i>Dominique Van Der Straeten -- Department of Biology</i>	5	1	A:1	150
21	C003352	Physiological Regulation in Animals <i>Bart Braeckman -- Department of Biology</i>	5	1	A:2	135
22	C003330	Functional Biotic Interactions <i>Michiel Vandecasteele -- Department of Plant Biotechnology and Bioinformatics</i>	6	1	A:2	180
23	C003331	Functional Abiotic Interactions <i>Anne Willems -- Department of Biochemistry, Physiology and Microbiology</i>	6	1	A:1	180
24	C003332	Model Organisms <i>Bart Braeckman -- Department of Biology</i>	3	1	A:2	90
25	C002865	Bioethics <i>Michiel De Proost -- Department of Philosophy and Moral Sciences</i>	3	1	A:1	80

### 3.2 Major Biodiversity and Evolutionary Biology

42 credits

Subscribe to 42 credit units from the following list, distributed over the first standard learning path as follows:

- no less than 30 and no more than 42 credit units in year 1,
- no more than 12 credit units in year 2.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003310 Taxonomy and Systematics <i>Koen Sabbe -- Department of Biology</i>	4		1	A:1	120
2	C003311 Phylogenetics <i>Olivier De Clerck -- Department of Biology</i>	4		1	A:1	120
3	C003312 Integrated Biodiversity Research Project <i>Kenny Bogaert -- Department of Biology</i>	5		1	A:2	150
4	C003313 Biodiversity Patterns in Space and Time <i>Koen Sabbe -- Department of Biology</i>	4		2	A:1	120
5	C003314 Paleobiology <i>Thijs Vandenbroucke -- Department of Geology</i>	5		1	A:1	150

6	C003315	Biodiversity Conservation <i>Ana Rita Giraldes Simoes -- Department of Biology</i>	4	1	A:2	120
7	C003316	Microevolution and Speciation <i>Frederik Hendrickx -- Department of Biology</i>	6	1	A:1	180
8	C004274	Evolutionary Morphology <i>Lars Chatrou -- Department of Biology</i>	5	2	A:1	150
9	C003319	Evolutionary Developmental Biology <i>Paul Witten -- Department of Biology</i>	5	1	A:2	150

### 3.3 Major Global Change Ecology

42 credits

Subscribe to 42 credit units from the following list, distributed over the first standard learning path as follows:

- no less than 30 and no more than 42 credit units in year 1,
- no more than 12 credit units in year 2.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003320	Climate Change <i>Dirk Verschuren -- Department of Biology</i>	4	1	A:2	120
2	C003321	Spatial Ecology <i>Dries Bonte -- Department of Biology</i>	5	1	A:1	150
3	C003322	Ecosystem Dynamics <i>Elie Verleyen -- Department of Biology</i>	5	1	A:1	150
4	C003323	Ecosystem Functioning <i>Tom Moens -- Department of Biology</i>	5	1	A:1	150
5	C003324	Behavioural Ecology <i>Lucy Mitchell -- Department of Biology</i>	4	1	A:2	120
6	C003325	Ecological Modelling <i>Dries Bonte -- Department of Biology</i>	7	1	A:2	210
7	C003326	Conservation Genetics <i>Philippe Helsen -- Department of Biology</i>	5	2	(A:2) <sup>d</sup>	150
8	C003327	Ecosystem Management and Services <i>Sander Jacobs -- Department of Biology</i>	7	2	A:J	210

### 3.4 Major Functional Biology

42 credits

Subscribe to 42 credit units from the following list, distributed over the first standard learning path as follows:

- no less than 30 and no more than 42 credit units in year 1,
- no more than 12 credit units in year 2.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003328	Plant Developmental Biology <i>Tom Beeckman -- Department of Plant Biotechnology and Bioinformatics</i>	5	1	A:2	150
2	C003333	Evolutionary Developmental Biology of Animals <i>Paul Witten -- Department of Biology</i>	5	1	A:2	150
3	C003347	Biology of Ageing <i>Bart Braeckman -- Department of Biology</i>	4	1	A:2 <sup>a</sup>	120
4	C003329	Physiological Regulation in Plants <i>Dominique Van Der Straeten -- Department of Biology</i>	5	1	A:1	150
5	C003352	Physiological Regulation in Animals <i>Bart Braeckman -- Department of Biology</i>	5	1	A:2	135
6	C003330	Functional Biotic Interactions <i>Michiel Vandecasteele -- Department of Plant Biotechnology and Bioinformatics</i>	6	1	A:2	180
7	C003331	Functional Abiotic Interactions <i>Anne Willems -- Department of Biochemistry, Physiology and Microbiology</i>	6	1	A:1	180
8	C003332	Model Organisms <i>Bart Braeckman -- Department of Biology</i>	3	1	A:2	90
9	C002865	Bioethics <i>Michiel De Proost -- Department of Philosophy and Moral Sciences</i>	3	1	A:1	80

## 4 Master's Dissertation

30 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C002312	Master's Dissertation	30	2	A:J	840

## Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the course name, using the following ISO codes:

bg: Bulgarian	de: German	es: Spanish	ja: Japanese	pl: Polish	sh: Croatian/Serbian	zh: Chinese
cs: Czech	el: Greek	fr: French	nl: Dutch	pt: Portuguese	sl: Slovene	
da: Danish	en: English	it: Italian	no: Norwegian	ru: Russian	sv: Swedish	

## Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.

When a semester is shown in brackets, the course is not offered this year in the specific offering.

The offering frequency and first year of offering are indicated by the following codes:

a: bi-annually	c: annually, from 2027-2028	f: annually, from 2028-2029	i: annually, from 2029-2030
b: tri-annually	d: bi-annually, from 2027-2028	g: bi-annually, from 2028-2029	j: bi-annually, from 2029-2030
	e: tri-annually, from 2027-2028	h: tri-annually, from 2028-2029	k: tri-annually, from 2029-2030