



## Faculty of Bioscience Engineering

### Master of Science in Bioscience Engineering: Land, Water and Climate

Language of instruction: Dutch

Programme version 4

1 General Courses						63 credits	
Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002657	Soil Physics [en] <i>Wim Cornelis -- Department of Environment</i>	5		1	A:1	150
2	I002659	Hydrological Modelling <i>Hans Lievens -- Department of Environment</i>	4		1	A:1	120
3	I002661	Open Channel Hydraulics <i>Niko Verhoest -- Department of Environment</i>	4		1	A:1	120
4	I002664	Soil Erosion Control: Principles and Practice [en] <i>Ann Verdoort -- Department of Environment</i>	4		1	A:1	120
5	I002655	Meteorology and Ecoclimatology <i>Hans Verbeeck -- Department of Environment</i>	5		1	A:2	150
6	I002656	Climate Change Processes [en] <i>Diego Miralles -- Department of Environment</i>	5		1	A:2	150
7	I002658	Environmental Soil Sensing [en] <i>Philippe De Smedt -- Department of Environment</i>	4		1	A:2	120
8	I002660	Groundwater Flow <i>Niko Verhoest -- Department of Environment</i>	3		1	A:2	90
9	I002646	Nutrient Management [en] <i>Stefaan De Neve -- Department of Environment</i>	3		1	B:2	90
10	I002698	Water Quality Management [en] <i>Peter Goethals -- Department of Animal Sciences and Aquatic Ecology</i>	4		1	A:2	120
11	I002662	Soil and Groundwater Remediation <i>Ellen Van De Vijver -- Department of Environment</i>	5		2	A:1	150
12	I002663	Water Governance [en] <i>Stijn Speelman -- Department of Agricultural Economics</i>	4		2	A:2	120
13	I003064	Planning for Multifunctional Landscapes <i>Kris Verheyen -- Department of Environment</i>	5		2	A:2	150
14	I002665	Integrated Land, Water and Climate Policy <i>Stefaan De Neve -- Department of Environment</i>	3		2	A:J	90
15	I002666	Integrated Project: Land, Water and Climate <i>Ann Verdoort -- Department of Environment</i>	5		2	A:J	150

2 Elective Courses						27 credits
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Subscribe to 27 credit units from no less than 1 and no more than 6 module(s) from the following list, of which at least 1 course unit is included from the list 2.1 Engineering Skills for Climate Adaptive Management of Land and Water. Subject to approval by the faculty.

#### 2.1 Engineering Skills for Climate-Smart Land and Water Management

Subscribe to at least 1 course unit from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002707	Water Resources Engineering <i>Niko Verhoest -- Department of Environment</i>	5			A:2	150
2	I002708	Soil Water Management [en] <i>Wim Cornelis -- Department of Environment</i>	5			A:2	150

3	I002709	Aquatic Ecotechniques [en] <i>Peter Goethals -- Department of Animal Sciences and Aquatic Ecology</i>	4	A:1	120
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## 2.2 In-depth Knowledge and Skills in Land, Water and Climate

Subscribe to no more than 23 credit units from the following list.

Pillars (see reference)

L = Land

W = Water

K = Climate

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002712	Soil Degradation [en] <i>Ann Verdoort -- Department of Environment</i>	5	L, K		A:2	150
2	I002992	Soil Biology [en] <i>Stefaan De Neve -- Department of Environment</i>	4	L		A:1	120
3	E054820	Inland Waterways and Locks [en] <i>Tom De Mulder -- Department of Civil Engineering</i>	6	W		B:2	180
4	I002535	Applied Marine Ecology [en] <i>Colin Janssen -- Department of Animal Sciences and Aquatic Ecology</i>	3	W		A:1	90
5	I002710	Water in the City <i>Katrien Van Eerdenbrugh -- Department of Environment</i>	4	W		A:1	120
6	C002664	Paleoclimatology [en] <i>Dirk Verschuren -- Department of Biology</i>	6	K		A:1	150
7	I003013	Advanced Remote Sensing [en] <i>Kim Calders -- Department of Environment</i>	5	L,W,K		A:2	150

## 2.3 Broadening Knowledge and Skills in Technology, Land Use and Management, and Data Analysis

Subscribe to no more than 23 credit units from the following list.

Module (see reference)

T = Technology

I = Land Use and Management

D = Data Analysis

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I003072	Environmental Technology: Water [en] <i>Jo De Vrieze -- Department of Biotechnology</i>	5	T		B:2	150
2	C004177	Spatiotemporal Analysis and Modelling [en] <i>Nico Van de Weghe -- Department of Geography</i>	5	T, I		A:1	150
3	I002716	Environmental Impact Assessment <i>Sophie Huysveld -- Department of Green Chemistry and Technology</i>	4	I		A:2	120
4	I002685	Legal Framework for Environmental Technology <i>Hildegard Deweerdt -- Department of Agricultural Economics</i>	6	I, T		A:1	180
5	I002718	Economics and Management of Natural Resources [en] <i>Stijn Speelman -- Department of Agricultural Economics</i>	4	I		A:2	120
6	E084581	Sustainable Cities <i>Thomas Block -- Department of Political Sciences</i>	6	I		A:J	180
7	I003053	Machine Learning for Life Sciences [en] <i>Willem Waegeman -- Department of Data Analysis and Mathematical Modelling</i>	4	D		A:1	120
8	C003701	Selected Topics in Mathematical Optimization [en] <i>Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling</i>	3	D		A:1	75

## 2.4 Entrepreneurship and Management

Subscribe to no more than 12 credit units from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C000833	Project Management <i>Mario Vanhoucke -- Department of Business Informatics and Operations Management</i>	4			A:2	120
2	I001949	Entrepreneurship <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3			A:2	75
3	F001022	Dare to Venture [en] <i>Johan Verruel -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120
4	E076471	Dare to Start [en] <i>Wouter Haerick -- Department of Information Technology</i>	3			A:2	90
5	I003068	Management for Engineers [en] <i>Jeroen Buysse -- Department of Agricultural Economics</i>	4			A:1	120

## 2.5 Skills and Attitudes

Subscribe to no more than 15 credit units from the following list, with no more than 10 credit units with reference a.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002637	Internship [en, nl] <i>Peter Ragaert -- Department of Food Technology, Safety and Health</i>	5	a		A:J	150
2	I002638	International Internship [en, nl] <i>Peter Ragaert -- Department of Food Technology, Safety and Health</i>	5	a		A:J	150
3	I002639	Extended Internship [en, nl] <i>Peter Ragaert -- Department of Food Technology, Safety and Health</i>	10	a		A:J	300
4	I002640	Extended International Internship [en, nl] <i>Peter Ragaert -- Department of Food Technology, Safety and Health</i>	10	a		A:J	300
5	I003067	Bioethics [en] <i>Michiel De Proost -- Department of Philosophy and Moral Sciences</i>	3			A:1	75
6	C002668	Scientific Communication in English [en] <i>Geert Jacobs -- Department of Linguistics</i>	5			A:2	150
7	I001784	Seminar <i>Mieke Uyttendaele -- Department of Food Technology, Safety and Health</i>	3				75

## 2.6 Open Choice

Subscribe to course units from courses offered at Ghent University and at the alliance partner VUB, including the [Ghent University Elective Courses](#).

A maximum of 2 such courses is allowed.

Maximum 8 credit units language courses are allowed within this master programme.

Subject to approval by the Faculty.

## 3 Master's Dissertation

30 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I001478	Master's Dissertation <i>Ann Verdoort -- Department of Environment</i>	30	2	A:J	900

### 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 2026-2027	f: annually, from 2027-2028	i: annually, from 2028-2029
b: tri-annually	d: bi-annually, from 2026-2027	g: bi-annually, from 2027-2028	j: bi-annually, from 2028-2029
	e: tri-annually, from 2026-2027	h: tri-annually, from 2027-2028	k: tri-annually, from 2028-2029