GHENT UNIVERSITY

Study Programme

Academic year 2025-2026

Programme jointly offered by Ghent University,Universiteit Antwerpen,KU Leuven

Master of Science in Bioscience Engineering: Sustainable Urban Bioscience Engineering

Language of instruction: English

Programme version 3

1 General Courses — 60 credits

1.1 Introductory Courses — 15 credits

You have to acquire all 15 ECTS-credits from the list below

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002960	Societal Perspectives on Urban Sustainability	5		1	A:1	140
2	I003031	Sustainable Cities	3		1	A:1	90
3	I003032	Data Management & Visualisation	3		1	A:1	90
4	I003033	Spatial and Sustainability Analysis Tools	4		1	A:1	120

1.2 City Labs — 45 credits

The core of the first year of the master's programme consists of the three multidisciplinary CityLabs, with each partner university coordinating one CityLab.
You have to complete all CityLabs.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002961	CityLab 1: The Urban Ecosystem - Conceptual Framework	9		1	A:1	252
2	I002962	CityLab 1: The Urban Ecosystem - Integrated Case	6		1	A:1	168
3	I002954	CityLab 2: Urban Resources - Conceptual Framework *Gijs Du Laing -- Department of Green Chemistry and Technology*	9		1	A:2	252
4	I002955	CityLab 2: Urban Resources - Integrated Case *Marjolein Vanoppen -- Department of Green Chemistry and Technology*	6		1	A:2	168
5	I002963	CityLab 3: Human Health and Urban Liveability - Conceptual Framework	9		1	A:2	252
6	I002964	CityLab 3: Human Health and Urban Liveability - Integrated Case	6		1	A:2	168

2 Elective Courses — 24 credits

You can personalise your study programme by taking elective courses (24 ECTS-credits). Advanced electives (min. 15 ECTS-credits) will deepen your understanding of the themes and technologies of the CityLabs. Electives of free choice (max. 9 ECTS-credits) will deepen or broaden your knowledge, attitudes and skills in other subjects.

2.1 Advanced Electives

Subscribe to no less than 18 credit units from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002967	Urban Air Modelling	3		2	A:1	84
2	I002968	Urban Green Design and Management	3		2	A:2	84
3	I002969	Remote Sensing of Urban Systems	4		2	A:1	112
4	I002970	Renewable Energy	3		2	A:1	84
5	I002956	Technologies for Alternative Proteins *Stefaan De Smet -- Department of Animal Sciences and Aquatic Ecology*	3		2	A:1	90
6	I002591	Environmental Technology: Waste *Stef Ghysels -- Department of Green Chemistry and Technology*	3		2	A:2	90
7	I002957	Technologies and Infrastructure for Sustainable Water Use and Resource Recovery	3		2	A:2	90

8	I002971	Environmental Epidemiology	3	2	A:2	84
9	I003034	Data Mining	3	2	A:2	90
10	I002973	Bioresponse Measurements and Process Control	3	2	A:1	84
11	I002978	Smart Cities	3	2	A:1	84
12	I002765	Sustainable Food Systems *Marijke D'Haese -- Department of Agricultural Economics*	5	2	A:2	150
13	I003093	Entrepreneurship in Biotechnology	6	2	A:2	180

2.2 Free Electives

Subscribe to no more than 6 credit units from the following list.
For this part of the programme, you can choose freely (for max. 6 ECTS-credits) from the courses from other programmes at the University of Antwerp, Ghent University and/or KU Leuven. You motivate why this free elective is related to urban environmental challenges and/or applications. Your choice is subject to approval by the Study Progress Committee.

3 Work Placement — 6 credits

The Internship is a mandatory course in the Master's programme. The internship can take place both in the first or in the second semester, depending of the availability of internship positions. In mutual agreement with the supervisors and the internship coordinator, the internship can also start in the summer holidays before the start of the internship year. The internship can take place abroad. The duration of the internship is (at least) 25 working days.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002965	Internship	6		2	A:J	168

4 Master's Dissertation — 30 credits

The final part of the Master's programme is an individual, multidisciplinary and scientific research project on a particular urban environmental problem that you will carry out as part of the Master's thesis (30 ECTS-credits) in cooperation with the relevant research groups or in a company/organisation belonging to the programme's work field.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002966	Master's Thesis	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 cours name, using the following ISO codes:

bg: Bulgarian	de: German	es: Spanish	ja: Japanese	pl: Polish	sh: Kroatian/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 in 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