

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 <i>Gijs Du Laing -- Department of Green Chemistry and Technology</i>	9		1	A:2	252
4	I002955 CityLab 2: Urban Resources - Integrated Case <i>Marjolein Vanoppen -- Department of Green Chemistry and Technology</i>	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 <i>Stefaan De Smet -- Department of Animal Sciences and Aquatic Ecology</i>	3		2	A:1	90
6	I002591 Environmental Technology: Waste <i>Stef Ghysels -- Department of Green Chemistry and Technology</i>	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 <i>Marijke D'Haese -- Department of Agricultural Economics</i>	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 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