GHENT UNIVERSITY

Study Programme

Academic year 2025-2026

Faculty of Sciences,Faculty of Engineering and Architecture,Faculty of Bioscience Engineering

Master of Science in Bioinformatics -- Bioscience Engineering

Language of instruction: English

Programme version 7

1 General Courses — 33 credits

1.1 Applied Bioinformatics Module — 33 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C003694	Statistical Genomics *Christophe Vanderaa -- Department of Mathematics, Computer Science and Statistics*	6			A:1	180
2	C003695	Applied High-throughput Analysis *Tim De Meyer -- Department of Data Analysis and Mathematical Modelling*	6		1	A:1	180
3	C003696	Genome Biology *Klaas Vandepoele -- Department of Plant Biotechnology and Bioinformatics*	6		1	A:2	180
4	C004000	Integrative Biology *Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics*	3		1	A:2	80
5	C003698	Design Project *Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics*	9		1	A:J	270
6	C004122	Capita Selecta in Bioinformatics *Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics*	3			A:1	75

2 Courses Related to the Main Subject

2.1 Bioscience Engineering Module

Subscribe to 1 module from the following list.
Students of the Bachelor of Science in Biochemistry and Biotechnology (or an equivalent) subscribe for "Reorientation B.Sc. in Biochemistry and Biotechnology".
Students of the Bachelor of Science in Bioscience Engineering (or an equivalent) and students who succesfully completed the preparatory course subscribe for "Reorientation B.Sc. in Bioscience Engineering".
Subject to approval by the curriculum committee.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I002612	Industrial Biotechnology *Wim Soetaert -- Department of Biotechnology*	5		2	A:1	150
2	I001280	Experimental Design *Stijn Luca -- Department of Data Analysis and Mathematical Modelling*	3		2	A:2	75
3	I003054	Computer Vision for Life Sciences *Jan Verwaeren -- Department of Data Analysis and Mathematical Modelling*	5		2	A:2	150

2.1.1 Reorientation B.Sc. in Biochemistry and Biotechnology — 13 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I003070	Process Engineering *Jo Dewulf -- Department of Green Chemistry and Technology*	4		1	A:2	120
2	I002440	Data Science [nl] *Jan Verwaeren -- Department of Data Analysis and Mathematical Modelling*	5		1	A:2	150
3	I002445	Modelling and Simulation of Biosystems [nl] *Michiel Stock -- Department of Data Analysis and Mathematical Modelling*	4		2	A:2	120

2.1.2 Reorientation B.Sc. in Bioscience Engineering — 9 credits

Nr	Course		CRDT	Ref	MT1	Session	Study

1	I002611	Plant Biotechnology *Laurens Pauwels -- Department of Biotechnology*	5	2	A:2	150
2	I002615	Protein Chemistry *Els Van Damme -- Department of Biotechnology*	4	2	A:1	120

2.2 Applied Mathematics and Informatics Module 19 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C004611	Biological Databases *Wim Van Criekinge -- Department of Data Analysis and Mathematical Modelling*	3		1	A:2	90
2	C003701	Selected Topics in Mathematical Optimization *Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling*	3			A:1	75
3	C003083	Bioinformatics Algorithms *Veerle Fack -- Department of Mathematics, Computer Science and Statistics*	3		1	A:2	80
4	I003053	Machine Learning for Life Sciences *Willem Waegeman -- Department of Data Analysis and Mathematical Modelling*	4			A:1	120
5	C004612	Advanced AI for Bioinformatics *Willem Waegeman -- Department of Data Analysis and Mathematical Modelling*	6			A:1	180

2.3 Master's Dissertation 30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C003714	Master's Dissertation	30		2	A:J	900

3 Elective Courses

Subscribe to: 12 credit units (students with module Reorientation B.Sc. in Biochemistry and Biotechnology) or 16 credit units (students with module Reorientation B.Sc. in Bioscience Engineering).

3.1 Elective Courses UGent

Subscribe to courses from the master programmes of Ghent University, including the Intensive Programmes of the Faculty of Bioscience Engineering. A minimum of 5 credit units is required from the "Cross-Disciplinary Elective Set for Bioscience Engineers". With remaining credit units, subscribe for no more than 5 credit units outside of the domain of bioinformatics and related sciences. These 5 credit units may include the Ghent University Elective Courses. Subject to approval by the curriculum committee.

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