Study Programme

Academic year 2025-2026

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

Bridging Programme Master of Science in Bioinformatics -- Engineering

Language of instruction: English

Programme version 9

1 General Courses   33 credits

1.1 Applied Bioinformatics Module   33 credits

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

2 Courses Related to the Main Subject   81 credits

2.1 Engineering Module   42 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E001161	Mathematic Models	6		1	A:1	180
		Karel Van Acoleyen -- Department of Electronics and Information Systems					
2	E001470	Discrete Mathematics II [nl]	6		1	A:2	180
		Joris Walraevens -- Department of Telecommunications and Information Processing					
3	C003711	Computational Challenges in Bioinformatics	6		1	A:2	180
		Jan Fostier -- Department of Information Technology					
4	E061330	Machine Learning	6		2	B:1	180
		Joni Dambre -- Department of Electronics and Information Systems					
5	E017930	Parallel and Distributed Software Systems	6		2	A:1	180
		Jan Fostier -- Department of Information Technology					
6	E004120	Optimisation Techniques	6		2	A:2	180
		Ljubomir Jovanov -- Department of Telecommunications and Information Processing					

2.1.1 Elective Course List

Subscribe to 6 credit units from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E034140	Parallel Computer Systems	6			A:1	180
		Lieven Eeckhout -- Department of Electronics and Information Systems					
2	E003600	Information Theory	6			B:2	180
		Heidi Steendam -- Department of Telecommunications and Information Processing					
3	E019400	Information Security	6			B:2	180
		Eric Laermans -- Department of Information Technology					

Nr	Course		CRDT	Ref	MT1	Session	Study
4	E092623	Modelling of Physiological Systems	5			A:2	150
		Patrick Segers -- Department of Electronics and Information Systems					
5	E074011	Quantitative Cell and Tissue Analysis	6			A:1	180
		An Hendrix -- Department of Human Structure and Repair					
6	E003422	Fundamentals of Statistical Sensor Processing	6			A:1	180
		Hiep Luong -- Department of Telecommunications and Information Processing					
7	C004545	Bayesian Statistics	5			A:2	150
		Koen De Turck -- Department of Telecommunications and Information Processing					
8	E018240	Big Data Technology	4			A:1	120
		Dieter De Witte -- Department of Electronics and Information Systems					
9	E018250	Big Data Algorithms	3				90
10	F000918	Deep Learning	6			A:2	180
		Seppe vanden Broucke -- Department of Business Informatics and Operations Management					
11	E061341	Natural Language Processing	6			A:2	180
		Thomas Demeester -- Department of Information Technology					
12	E016340	Probabilistic Graphical Models	4			A:2	120
		Aleksandra Pizurica -- Department of Telecommunications and Information Processing					
13	E018700	Data Quality	3			A:1	90
		Antoon Bronselaer -- Department of Telecommunications and Information Processing					
14	E018130	NoSQL Databases	3			A:2	90
		Antoon Bronselaer -- Department of Telecommunications and Information Processing					
15	E018610	Database Design [nl]	4			A:1	120
		Guy De Tré -- Department of Telecommunications and Information Processing					
16	E017310	Cloud Storage and Computing	4			A:2	120
		Bruno Volckaert -- Department of Information Technology					
17	E017950	Secure Software and Systems	6			A:2	180
		Bart Coppens -- Department of Electronics and Information Systems					
18	E018160	Knowledge Graphs	3			A:2	90
		Pieter Colpaert -- Department of Electronics and Information Systems					
19	E061370	Data Visualization for and with AI	3			A:1	90
		Jefrey Lijffijt -- Department of Electronics and Information Systems					
20	E061360	Reinforcement Learning	6			A:1	180
		Pieter Simoens -- Department of Information Technology					
21	E008711	Network Hacking and Protection	6			A:1	180
		Bruno Volckaert -- Department of Information Technology					
22	E016360	Cognitive and Brain-Inspired Artificial Intelligence	3			A:2	90
		Tony Belpaeme -- Department of Electronics and Information Systems					

2.2 Biology Module — 9 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C003712	Cellular and Molecular Biology	6		1	A:1	180
		Sofie Goormachtig -- Department of Plant Biotechnology and Bioinformatics					
2	C003713	Introduction to Bioinformatics	3		1	A:2	90
		Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics					

2.3 Master's Dissertation — 30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C003720	Master's Dissertation	30		2	A:J	900

3 Elective Courses — 6 credits

Subscribe to 6 credit units from no less than 1 and no more than 2 module from the following list. Subject to approval by the faculty.

3.1 Elective Course List

Subscribe to no more than 6 credit units from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C004001	Internship	6			A:1	150
2	A003107	Advanced Academic English	3	UKV		A:1, B:2	90
		Geert Jacobs -- Department of Linguistics					

3.2 Elective Courses UGent

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