

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

Master of Science in Bioinformatics -- Engineering

Language of instruction: English

Programme version 8

1 General Courses 33 credits

1.1 Applied Bioinformatics Module 33 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003694 Statistical Genomics Lieven Clement -- Department of Applied Mathematics and Computer Science	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 Jan Fostier -- Department of Information Technology	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 Engineering Module 36 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E017930 Parallel and Distributed Software Systems Filip De Turck -- Department of Information Technology	6		1	A:1	180
2	C003711 Computational Challenges in Bioinformatics Peter Dawyndt -- Department of Applied Mathematics and Computer Science	6		1	A:2	180
3	E061330 Machine Learning Joni Dambre -- Department of Electronics and Information Systems	6		2	B:1	180
4	E004120 Optimisation Techniques Ljubomir Jovanov -- Department of Telecommunications and Information Processing	6		2	A:2	180

2.1.1 Elective Course List 12 credits

Subscribe to 12 credit units from the following list.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E034140 Parallel Computer Systems Lieven Eeckhout -- Department of Electronics and Information Systems	6			A:1	180
2	E003600 Information Theory Heidi Steendam -- Department of Telecommunications and Information Processing	6			B:2	180
3	E019400 Information Security Eric Laermans -- Department of Information Technology	6			B:2	180
4	E092623 Modelling of Physiological Systems Patrick Segers -- Department of Electronics and Information Systems	5			A:2	150
5	E074011 Quantitative Cell and Tissue Analysis Andre Skirtach -- Department of Biotechnology	6			A:1	180
6	E003422 Fundamentals of Statistical Sensor Processing Hiep Luong -- Department of Telecommunications and Information Processing	6			A:1	180

7	C004545	Bayesian Statistics Koen De Turck -- Department of Telecommunications and Information Processing	5	A:2	150
8	E018240	Big Data Technology Dieter De Witte -- Department of Electronics and Information Systems	4	A:1	120
9	E018250	Big Data Algorithms Dieter De Witte -- Department of Electronics and Information Systems	3	A:2	90
10	F000918	Deep Learning Seppe vanden Broucke -- Department of Business Informatics and Operations Management	6	A:2	180
11	E061341	Natural Language Processing Chris Develder -- Department of Information Technology	6	A:2	180
12	E016340	Probabilistic Graphical Models Aleksandra Pizurica -- Department of Telecommunications and Information Processing	4	A:2	120
13	E018700	Data Quality Antoon Bronselaer -- Department of Telecommunications and Information Processing	3	A:1	90
14	E018130	NoSQL Databases Antoon Bronselaer -- Department of Telecommunications and Information Processing	3	A:2	90
15	E018610	Database Design [nl] Guy De Tré -- Department of Telecommunications and Information Processing	4	A:1	120
16	E017310	Cloud Storage and Computing Bruno Volckaert -- Department of Information Technology	4	A:2	120
17	E017950	Secure Software and Systems Bart Coppens -- Department of Electronics and Information Systems	6	A:2	180
18	E018160	Knowledge Graphs Pieter Colpaert -- Department of Electronics and Information Systems	3	A:2	90
19	E061370	Data Visualization for and with AI Jefrey Lijffijt -- Department of Electronics and Information Systems	3	A:1	90
20	E061360	Reinforcement Learning Pieter Simoens -- Department of Information Technology	6	A:1	180
21	E008710	Network Security Bruno Volckaert -- Department of Information Technology	6	A:1	180
22	E016360	Cognitive and Brain-Inspired Artificial Intelligence Tony Belpaeme -- Department of Electronics and Information Systems	3	A:2	90

2.2 Biology Module

9 credits

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

2.3 Master's Dissertation

30 credits

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

3 Elective Courses

12 credits

Subscribe to 12 credit units from no less than 1 and no more than 3 modules from the following list. Subject to approval by the faculty.

3.1 Elective Course List

Subscribe to no more than 9 credit units from the following list.

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

3.2 Elective Courses UGent

Subscribe to no more than 12 credit units from the courses of Ghent University including the [Ghent University elective course list](#). 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 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 2025-2026	f: annually, from 2026-2027	i: annually, from 2027-2028
b: tri-annually	d: bi-annually, from 2025-2026	g: bi-annually, from 2026-2027	j: bi-annually, from 2027-2028
	e: tri-annually, from 2025-2026	h: tri-annually, from 2026-2027	k: tri-annually, from 2027-2028