

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

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 <i>Christophe Vanderaa -- Department of Mathematics, Computer Science and Statistics</i>	6			A:1	180
2	C003695 Applied High-throughput Analysis <i>Tim De Meyer -- Department of Data Analysis and Mathematical Modelling</i>	6		1	A:1	180
3	C003696 Genome Biology <i>Klaas Vandepoele -- Department of Plant Biotechnology and Bioinformatics</i>	6		1	A:2	180
4	C004000 Integrative Biology <i>Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics</i>	3		1	A:2	80
5	C003698 Design Project <i>Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics</i>	9		1	A:J	270
6	C004122 Capita Selecta in Bioinformatics <i>Kathleen Marchal -- Department of Plant Biotechnology and Bioinformatics</i>	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 <i>Jan Fostier -- Department of Information Technology</i>	6		1	A:1	180
2	C003711 Computational Challenges in Bioinformatics <i>Jan Fostier -- Department of Information Technology</i>	6		1	A:2	180
3	E061330 Machine Learning <i>Joni Dambre -- Department of Electronics and Information Systems</i>	6		2	B:1	180
4	E004120 Optimisation Techniques <i>Ljubomir Jovanov -- Department of Telecommunications and Information Processing</i>	6		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 <i>Lieven Eeckhout -- Department of Electronics and Information Systems</i>	6			A:1	180
2	E003600 Information Theory <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i>	6			B:2	180
3	E019400 Information Security <i>Eric Laermans -- Department of Information Technology</i>	6			B:2	180
4	E092623 Modelling of Physiological Systems <i>Patrick Segers -- Department of Electronics and Information Systems</i>	5			A:2	150
5	E074011 Quantitative Cell and Tissue Analysis <i>An Hendrix -- Department of Human Structure and Repair</i>	6			A:1	180

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

2.2 Biology Module

9 credits

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

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

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	6			A:1	150
2	A003107 Advanced Academic English <i>Geert Jacobs -- Department of Linguistics</i>	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 2027-2028	f: annually, from 2028-2029	i: annually, from 2029-2030
b: tri-annually	d: bi-annually, from 2027-2028	g: bi-annually, from 2028-2029	j: bi-annually, from 2029-2030
	e: tri-annually, from 2027-2028	h: tri-annually, from 2028-2029	k: tri-annually, from 2029-2030