

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 6

## 1 General Courses 33 credits

### 1.1 Applied Bioinformatics Module 33 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003694 Statistical Genomics <i>Lieven Clement -- 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>Jan Fostier -- Department of Information Technology</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 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 successfully 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 <i>Wim Soetaert -- Department of Biotechnology</i>	5		2	A:1	150
2	I002617 Bio-imaging and Image Informatics <i>Andre Skirtach -- Department of Biotechnology</i>	4		2	A:1	120
3	I002618 Process Engineering 2 <i>Paul Van der Meeren -- Department of Green Chemistry and Technology</i>	5		2	A:1	150

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

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I002442 Process Engineering <i>Jo Dewulf -- Department of Green Chemistry and Technology</i>	4		1	A:2	120
2	I002440 Data Science [nl] <i>Jan Verwaeren -- Department of Data Analysis and Mathematical Modelling</i>	5		1	A:2	150
3	I002445 Modelling and Simulation of Biosystems [nl] <i>Michiel Stock -- Department of Data Analysis and Mathematical Modelling</i>	4		2	A:2	120

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

Nr	Course	CRDT	Ref	MT1	Session	Study
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1	I002611	Plant Biotechnology <i>Laurens Pauwels -- Department of Biotechnology</i>	5	2	A:2	150
2	I002615	Protein Chemistry <i>Els Van Damme -- Department of Biotechnology</i>	4	2	A:1	120

## 2.2 Applied Mathematics and Informatics Module

20 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I002642 Biological Databases <i>Gerben Menschaert -- Department of Data Analysis and Mathematical Modelling</i>	3		1	B:2	90
2	C002732 Programming for Bioinformatics <i>Pieter De Bleser -- Department of Molecular Biology</i>	6		1	A:1	160
3	C003701 Selected Topics in Mathematical Optimization <i>Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling</i>	3			A:1	75
4	C003083 Bioinformatics Algorithms <i>Veerle Fack -- Department of Mathematics, Computer Science and Statistics</i>	3		1	A:2	80
5	I002932 Machine Learning for Life Sciences <i>Willem Waegeman -- Department of Data Analysis and Mathematical Modelling</i>	5			A:1	150

## 2.3 Master's Dissertation

30 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003714 Master's Dissertation <i>N. N.</i>	30		2	A:J	900

## 3 Elective Courses

Subscribe to no less than 1 and no more than 3 modules from the following list. Subject to approval by the faculty.  
Subscribe to: 10 credit units (students with module Reorientation B.Sc. in Biochemistry and Biotechnology) or 14 credit units (students with module Reorientation B.Sc. in Bioscience Engineering).

### 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 <i>N. N.</i>	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 Course List - Entrepreneurship and Management

Subscribe to no more than 8 credit units from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I002720 Consumer Behaviour and Marketing of Bio-industrial products [nl] <i>Wim Verbeke -- Department of Agricultural Economics</i>	5			A:2	150
2	I001967 Intellectual Property and Valorization <i>Benedikt Sas -- Department of Food Technology, Safety and Health</i>	3			A:2	90
3	C000833 Project Management [nl] <i>Mario Vanhoucke -- Department of Business Informatics and Operations Management</i>	4			A:2	120
4	E076471 Dare to Start <i>Wouter Haerick -- Department of Information Technology</i>	3			A:2	90
5	I001949 Entrepreneurship [nl] <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3			A:2	75
6	E076460 Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120

### 3.3 Elective Courses UGent

Subscribe to courses from the master programmes of Ghent University, including the Intensive Programmes of the Faculty of Bioscience Engineering.  
Subscribe to no more than 5 credit units outside the domain of bioinformatics and other related sciences 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