

Faculty of Medicine and Health Sciences
Master of Science in Biomedical Sciences

Language of instruction: English
Programme version 5

1 General Courses 27 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D013626 Laboratory Quality Management and Assurance Peter Van Eenoo -- Department of Diagnostic Sciences	3		1	A:1	75
2	D012176 Bio-Ethics in Experimental Medicine Katya De Groote -- Department of Internal Medicine and Pediatrics	3		1	A:1	75
3	A003107 Advanced Academic English Geert Jacobs -- Department of Linguistics	3	UKV	1	A:1	90
4	D012528 Cell and Gene Therapy Bart Vandekerckhove -- Department of Diagnostic Sciences	4		1	A:1	120
5	D013628 Large Scale Analysis of Biomedical Data Katieleen De Preter -- Department of Biomolecular Medicine	4		1	A:1	100
6	D012527 Good Clinical Practice - Clinical studies Sylvie Rottey -- Department off Basic and Applied Medical Sciences	3		1	A:2	90
7	D013627 Research Proposal Biomedical Sciences Steven Goossens -- Department of Diagnostic Sciences	4		1	A:2	120
8	D012514 Medical Seminars Tania Maes -- Department of Internal Medicine and Pediatrics	3		2	A:J	75

2 Majors 26 credits

2.1 Major Nutrition and Metabolism 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012497 Methodology of Nutritional Research Bruno Lapauw -- Department of Internal Medicine and Pediatrics	5		1	A:1	150
2	D012498 Human Nutrition Science and Pathology XAVIER VERHELST -- Department of Internal Medicine and Pediatrics	6		1	A:2	180
3	D012496 Method and Device Validation Carolien Bonroy -- Department of Diagnostic Sciences	3		1	A:2	75
4	D012504 Public Health Nutrition Stefaan De Henauw -- Department of Public Health and Primary Care	3		1	A:2	90
5	D012495 Medical Laboratory Diagnostics Peter Van Eenoo -- Department of Diagnostic Sciences	3		1	A:2	90
6	D001877 Food Microbiology and Food Preservation Andreja Rajkovic -- Department of Food Technology, Safety and Health	6		2	A:1	180

2.2 Major Neurosciences 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012509 Structural Aspects of the Central Nervous System	5		1	A:1	150
2	D012538 Functional Aspects of the Central Nervous System Frank Bosmans -- Department off Basic and Applied Medical Sciences	5		1	A:2	150
3	D012511 Neurobiology Evelien Carrette -- Department of Head and Skin	5		1	A:2	150
4	D012512 Neurogenetics Bart Dermout -- Department of Biomolecular Medicine	5		1	A:2	150

5	D012510	Clinical Neurology Kristl Vonck -- Department of Head and Skin	6	2	A:1	150
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2.3 Major Tissue Engineering and Regenerative Medicine 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012548	Degeneration and Senescence Mathieu Bertrand -- Department of Molecular Biology	5	1	A:1	150
2	D012549	Stem Cell Biology and Reprogramming BJORN HEINDRYCKX -- Department of Human Structure and Repair	4	1	A:2	120
3	D012550	Clinical and Experimental Embryology BJORN HEINDRYCKX -- Department of Human Structure and Repair	3	1	A:2	90
4	D012551	Biomaterials and Biocompatibility Peter Dubrue -- Department of Organic Chemistry	8	1	A:2	240
5	D001923	Tissue Engineering Ruslan Dmitriev -- Department of Human Structure and Repair	6	2	A:1	180

2.4 Major Radiation Sciences 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012508	Radiation Dosimetry and Radioprotection Klaus Bacher -- Department of Human Structure and Repair	5	1	A:1	150
2	D012506	Radiochemistry and Radiopharmaceuticals Filip De Vos -- Department of Pharmaceutical Analysis	4	1	A:2	120
3	D012507	Radiotherapy: Technology and Patient Dosimetry Werner De Gers -- Department of Human Structure and Repair	6	1	A:2	150
4	D012505	Medical Imaging Klaus Bacher -- Department of Human Structure and Repair	5	1	A:2	150
5	D012563	Radiobiology and Radiopathology Ans Baeyens -- Department of Human Structure and Repair	6	2	A:1	180

2.5 Major Medical Genetics 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012701	Advanced Human Genetics Sofie Symoens -- Department of Biomolecular Medicine	6	1	A:2	180
2	D012490	Cancer Genetics Kaat Durinck -- Department of Biomolecular Medicine	5	1	A:2	150
3	D012547	Massively Parallel Sequencing Data-analysis Pieter Mestdagh -- Department of Biomolecular Medicine	3	1	A:2	75
4	D000652	Developmental Genetics and Gene Regulation Elfride De Baere -- Department of Biomolecular Medicine	6	1	A:1	180
5	D000852	Genetical Diagnostics Kathleen Claes -- Department of Biomolecular Medicine	6	2	A:1	180

2.6 Major Immunity and Infection 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012529	Immunopathology Hamida Hammad -- Department of Internal Medicine and Pediatrics	5	1	A:1	150
2	D012531	Molecular Immunology Tom Taghon -- Department of Diagnostic Sciences	5	1	A:2	150
3	D012533	Molecular Virology Philip Meuleman -- Department of Diagnostic Sciences	5	1	A:2	150
4	D012530	Molecular Bacteriology Piet Cools -- Department of Diagnostic Sciences	5	1	A:2	150
5	D013094	Vaccinology Isabel Leroux-Roels -- Department of Diagnostic Sciences	6	2	A:1	180

2.7 Major Systems Biology 26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012555	Genomics, Proteomics and Metabolomics Kris Gevaert -- Department of Biomolecular Medicine	6	1	A:1	180
2	D012702	Advanced Imaging and Image Analysis Marleen Van Troys -- Department of Biomolecular Medicine	5	1	A:2	150

3	D012554	Machine Learning Methods for Biomedical Data Sven Degroove -- Department of Biomolecular Medicine	5	1	A:2	150
4	D012539	Protein Interaction Networks and Medical Applications Sven Eyckerman -- Department of Biomolecular Medicine	4	1	A:2	120
5	D012184	Systems Biology Kris Gevaert -- Department of Biomolecular Medicine	6	2	A:1	150

2.8 Major Cancer

26 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012491 Proliferation and Survival Panagiotis Ntziachristos -- Department of Biomolecular Medicine	5		1	A:1	150
2	D012492 Communication and Metastasis Olivier De Wever -- Department of Human Structure and Repair	5		1	A:2	150
3	D012493 Clinical Aspects of Cancer Wim Ceelen -- Department of Human Structure and Repair	5		1	A:2	150
4	D012490 Cancer Genetics Kaat Durinck -- Department of Biomolecular Medicine	5		1	A:2	150
5	D012494 Precision Medicine in Cancer Karim Vermaelen -- Department of Internal Medicine and Pediatrics	6		2	A:1	180

3 Elective Courses

Subscribe to 31 credit units from no less than 2 and no more than 7 modules from the following list. Subject to approval by the faculty.
Recommended: Students take 8 to 12 ECTS in the first master's year and 19 to 23 ECTS in the second year.

3.1 Elective Course List First Master's Year

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D013531 Innovation Management Jan Demolder -- Department of Biomolecular Medicine	5		1	A:2	150
2	D012577 Pharmacology [nl] Lindsey Devisscher -- Department off Basic and Applied Medical Sciences	7		1	A:2	210
3	D013530 Laboratory Animal Science Kathleen Hermans -- Department of Pathobiology, Pharmacology and Zoological Medicine	6		1	A:1	180
4	J000443 Pharmacoeconomics [nl] Barbara Claus -- Department of Pharmaceutical Analysis	3		1	A:2	90
5	H002169 Powerful Learning Environments [nl] Bram De Wever -- Department of Educational Studies	6		1	A:1	180
6	C004114 Mathematics: Advanced Techniques [nl] Carol Zamfirescu -- Department of Applied Mathematics and Computer Science	6		1	A:2	180
7	C004223 Nuclear Physics Natalie Jachowicz -- Department of Physics and Astronomy	4		1	A:2	120
8	A005503 Context and Nuance. A Critical Reflection on Current Topics [nl] Stef Craps -- Department of Literary Studies	6	UKV	1	A:1	180
9	D013207 Economic Perspectives on Health Lieven Annemans -- Department of Public Health and Primary Care	3		1	A:1	90

3.2 Biomedical Researcher in Industry and Management

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012577 Pharmacology [nl] Lindsey Devisscher -- Department off Basic and Applied Medical Sciences	7		2	A:2	210
2	J000445 Regulatory Affairs Health Products Evelien Wynendaele -- Department of Pharmaceutical Analysis	3		2	A:J	90
3	E092930 Translational Neuroscience Christian Vanhove -- Department of Electronics and Information Systems	3		2	A:2	90
4	J000443 Pharmacoeconomics [nl] Barbara Claus -- Department of Pharmaceutical Analysis	3		2	A:2	90
5	C002681 Advanced Programming in Bioinformatics Pieter De Bleser -- Department of Molecular Biology	3		2	A:1	80
6	C003670 Biomolecular Production Methods Nico Callewaert -- Department of Biochemistry, Physiology and Microbiology	4		2	A:1	110

7	D013207	Economic Perspectives on Health Lieven Annemans -- Department of Public Health and Primary Care	3	2	A:1	90
8	E076820	Project Management Mario Vanhoucke -- Department of Business Informatics and Operations Management	6	2	A:2	180
9	J000453	Pharmaceutical Management Skills [nl] Evelien Wynendaele -- Department of Pharmaceutical Analysis	3	2	A:2	90
10	D013530	Laboratory Animal Science Kathleen Hermans -- Department of Pathobiology, Pharmacology and Zoological Medicine	6	2	A:1	180
11	D013531	Innovation Management Jan Demolder -- Department of Biomolecular Medicine	5	2	A:2	150
12	J000427	Special Nutrition [nl] Sarah De Saeger -- Department of Bio-analysis	3	2	A:1	90
13	J000454	Cutting Edge Technologies for Drug Delivery - Nanomedicines Stefaan De Smedt -- Department of Pharmaceutics	3	2	A:2	90

3.3 Biomedical Researcher in a Changing Society

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E092930	Translational Neuroscience Christian Vanhove -- Department of Electronics and Information Systems	3		2	A:2	90
2	H002000	Modelling of Cognitive Processes Tom Verguts -- Department of Experimental Psychology	5		2	A:1	150
3	H001992	Neurobiology of Affective Disorders Gilles Pourtois -- Department of Experimental Clinical and Health Psychology	4		2	A:1	120
4	B000622	Medical Criminalistics [nl] Geert Van Parys -- Department of Diagnostic Sciences	4		2	A:2	120
5	B001499	Forensic Psychology [nl] Lize Verbeke -- Department of Developmental, Personality and Social Psychology	4		2	A:2	120
6	K001187	Corporate Communication [nl] Veroline Cauberghe -- Department of Communication Sciences	5		2	A:2	150
7	H001977	Coaching and Diversity [nl] Elisabeth De Schauwer -- Department of Special Education	3	UKV	2	A:J	90
8	A005503	Context and Nuance. A Critical Reflection on Current Topics [nl] Stef Craps -- Department of Literary Studies	6	UKV	2	A:1	180
9	H001010	Introduction Industrial Psychology [nl] Bart Wille -- Department of Developmental, Personality and Social Psychology	5		2	A:2	150
10	B001497	Forensic Psychiatry [nl] Kurt Audenaert -- Department of Head and Skin	4		2	B:1	120
11	B001637	Drug Phenomena [nl]	5		2	A:1	150
12	H002429	Neuropsychology [nl] Wim Fias -- Department of Experimental Psychology	5		2	A:2	150

3.4 Biomedical Exploration: Major Courses

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012498	Human Nutrition Science and Pathology XAVIER VERHELST -- Department of Internal Medicine and Pediatrics	6		A:2	180
2	D012496	Method and Device Validation Carolien Bonroy -- Department of Diagnostic Sciences	3		A:2	75
3	D012504	Public Health Nutrition Stefaan De Henauw -- Department of Public Health and Primary Care	3		A:2	90
4	D012495	Medical Laboratory Diagnostics Peter Van Eenoo -- Department of Diagnostic Sciences	3		A:2	90
5	D012497	Methodology of Nutritional Research Bruno Lapauw -- Department of Internal Medicine and Pediatrics	5		A:1	150
6	D012509	Structural Aspects of the Central Nervous System	5		A:1	150
7	D012538	Functional Aspects of the Central Nervous System Frank Bosmans -- Department off Basic and Applied Medical Sciences	5		A:2	150
8	D012511	Neurobiology Evelien Carrette -- Department of Head and Skin	5		A:2	150

9	D012512	Neurogenetics Bart Dermaut -- Department of Biomolecular Medicine	5	A:2	150
10	D012549	Stem Cell Biology and Reprogramming BJORN HEINDRYCKX -- Department of Human Structure and Repair	4	A:2	120
11	D012550	Clinical and Experimental Embryology BJORN HEINDRYCKX -- Department of Human Structure and Repair	3	A:2	90
12	D012548	Degeneration and Senescence Mathieu Bertrand -- Department of Molecular Biology	5	A:1	150
13	D012551	Biomaterials and Biocompatibility Peter Dubrueel -- Department of Organic Chemistry	8	A:2	240
14	D012506	Radiochemistry and Radiopharmaceuticals Filip De Vos -- Department of Pharmaceutical Analysis	4	A:2	120
15	D012508	Radiation Dosimetry and Radioprotection Klaus Bacher -- Department of Human Structure and Repair	5	A:1	150
16	D012507	Radiotherapy: Technology and Patient Dosimetry Werner De Gersem -- Department of Human Structure and Repair	6	A:2	150
17	D012505	Medical Imaging Klaus Bacher -- Department of Human Structure and Repair	5	A:2	150
18	D012490	Cancer Genetics Kaat Durinck -- Department of Biomolecular Medicine	5	A:2	150
19	D012547	Massively Parallel Sequencing Data-analysis Pieter Mestdagh -- Department of Biomolecular Medicine	3	A:2	75
20	D000652	Developmental Genetics and Gene Regulation Elfride De Baere -- Department of Biomolecular Medicine	6	A:1	180
21	D012701	Advanced Human Genetics Sofie Symoens -- Department of Biomolecular Medicine	6	A:2	180
22	D012531	Molecular Immunology Tom Taghon -- Department of Diagnostic Sciences	5	A:2	150
23	D012533	Molecular Virology Philip Meuleman -- Department of Diagnostic Sciences	5	A:2	150
24	D012530	Molecular Bacteriology Piet Cools -- Department of Diagnostic Sciences	5	A:2	150
25	D012529	Immunopathology Hamida Hammad -- Department of Internal Medicine and Pediatrics	5	A:1	150
26	D012702	Advanced Imaging and Image Analysis Marleen Van Troys -- Department of Biomolecular Medicine	5	A:2	150
27	D012554	Machine Learning Methods for Biomedical Data Sven Degroove -- Department of Biomolecular Medicine	5	A:2	150
28	D012539	Protein Interaction Networks and Medical Applications Sven Eyckerman -- Department of Biomolecular Medicine	4	A:2	120
29	D012555	Genomics, Proteomics and Metabolomics Kris Gevaert -- Department of Biomolecular Medicine	6	A:1	180
30	D012491	Proliferation and Survival Panagiotis Ntziachristos -- Department of Biomolecular Medicine	5	A:1	150
31	D012492	Communication and Metastasis Olivier De Wever -- Department of Human Structure and Repair	5	A:2	150
32	D012493	Clinical Aspects of Cancer Wim Ceelen -- Department of Human Structure and Repair	5	A:2	150
33	D012490	Cancer Genetics Kaat Durinck -- Department of Biomolecular Medicine	5	A:2	150
34	D001877	Food Microbiology and Food Preservation Andreja Rajkovic -- Department of Food Technology, Safety and Health	6	A:1	180
35	D012510	Clinical Neurology Kristl Vonck -- Department of Head and Skin	6	A:1	150
36	D001923	Tissue Engineering Ruslan Dmitriev -- Department of Human Structure and Repair	6	A:1	180
37	D012563	Radiobiology and Radiopathology Ans Baeyens -- Department of Human Structure and Repair	6	A:1	180

3.5 Preparing for EduMa

Nr	Course	CRDT	Ref	MT1	Session	Study
1	H002285 Reference Internship: Health Sciences [nl] Leen Haerens -- Department of Movement and Sports Sciences	3		2	A:J	90
2	H002169 Powerful Learning Environments [nl] Bram De Wever -- Department of Educational Studies	6		2	A:1	180
3	H002426 General Teaching Methodology in Health Sciences [nl] Leen Haerens -- Department of Movement and Sports Sciences	6		2	A:1	180
4	H002197 The Teacher within School and Society [nl] Melissa Tuytens -- Department of Educational Studies	4		2	A:1	120
5	H002169 Powerful Learning Environments [nl] Bram De Wever -- Department of Educational Studies	6		2	A:1	180
6	H002198 Psychology of Adolescence [nl] Wim Beyers -- Department of Developmental, Personality and Social Psychology	4		2	A:1	120

3.6 Medical Radiation Physics

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C004114 Mathematics: Advanced Techniques [nl] Carol Zamfirescu -- Department of Applied Mathematics and Computer Science	6		2	A:2	180
2	C004212 Python for Scientists Jonathan Leliaert -- Department of Solid State Sciences	5		2	A:1	150
3	C004223 Nuclear Physics Natalie Jachowicz -- Department of Physics and Astronomy	4		2	A:2	120
4	D002433 Detection and Measurement of Ionizing Radiation [nl] Klaus Bacher -- Department of Human Structure and Repair	3		2	A:1	90
5	D013254 Radiation Protection, Safety and Legislation [nl] Klaus Bacher -- Department of Human Structure and Repair	5		2	A:J	150

3.7 Elective Courses: Free Choice

6 credits

Subscribe to no more than 6 credit units from the study programmes of Ghent University, including the Ghent University Elective Courses. Subject to approval by the faculty.

The maximum number of 6 ECTS credits for elective courses that can be freely chosen may be exceeded to a maximum of 12 ECTS credits, only for elective courses in support of the master's thesis or major. Moreover, the request to take more than 6 SP of free electives needs to be motivated on behalf of the curriculum committee, who will give its final approval, for all the included free electives within the package of maximal 12 SP.

[Ghent University Elective Courses](#)

4 Work Placement 6 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D013637 Major Internship Biomedical Sciences	6		1	A:J	180

5 Master's Dissertation 30 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	D012185 Master's Dissertation	30		2	A:J	900

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