GHENT UNIVERSITY

Study Programme

Academic year 2025-2026

Faculty of Pharmaceutical Sciences,Faculty of Bioscience Engineering

Master of Science in Pharmaceutical Engineering

Language of instruction: English

Programme version 4

1 General Courses

Due to the interdisciplinary character of the study programme, the students are required to take up a partially different set of compulsory subjects, depending on the discipline of their preliminary education. Course units for which one or more references are mentioned, are only taken up by the students holding the degrees mentioned hereafter:

- 'B': the degrees of BSc in de bio-ingenieurswetenschappen; BSc in de bio-industriële wetenschappen; BSc in de biowetenschappen; BSc in Environmental Technology; BSc in Food Technology; BSc in Molecular Biotechnology
- 'P': the degree of BSc in de farmaceutische wetenschappen
- 'C': the degree of BSc in de chemie

Nr	Course		CRDT	Ref	MT1	Session	Study
1	J000278	Pharmacokinetics *An Vermeulen -- Department of Bio-analysis* Indicative price: unknown	4	B,C	1	A:1	120
2	J000517	Drug Product Formulation *Chris Vervaet -- Department of Pharmaceutics* Indicative price: € 15	6	B,C	1	A:1	180
3	I002510	Reaction Kinetics and Reactor Design *Paul Van der Meeren -- Department of Green Chemistry and Technology* Indicative price: € 10	5	P,C	1	B:1	150
4	I002612	Industrial Biotechnology *Wim Soetaert -- Department of Biotechnology* Indicative price: € 15	5		1	A:1	150
5	I003079	Chemical Structure Determination *Christian Stevens -- Department of Green Chemistry and Technology* Indicative price: € 20	4	B,P	1	A:1	120
6	J000519	Pharmaceutical Quality by Design and Process Analytical Technology *Thomas De Beer -- Department of Pharmaceutical Analysis* Indicative price: € 0	5		1	A:1	150
7	C003080	Programming *Peter Dawyndt -- Department of Mathematics, Computer Science and Statistics* Indicative price: € 0	5	P (UKV)	1	C:1	150
8	J000548	Physical Chemistry of Liquid Drugs *Stefaan De Smedt -- Department of Pharmaceutics* Indicative price: unknown	6	B	1	A:2	180
9	J000500	Pharmacology: Drugs and Their Targets *Serge Van Calenbergh -- Department of Pharmaceutics* Indicative price: € 30	4	B,C	1	A:2	120
10	I003070	Process Engineering *Jo Dewulf -- Department of Green Chemistry and Technology* Indicative price: € 15	5	P,C	1	B:2	150
11	I002892	Introduction to Data Science *Jan Verwaeren -- Department of Data Analysis and Mathematical Modelling* Indicative price: € 0	4	P,C	1	A:2	120
12	I002891	Introduction to Mathematical Modelling *Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling* Indicative price: unknown	6	P	1	A:2	180
13	J000518	Pharmaceutical Material Science *Valérie Vanhoorne -- Department of Pharmaceutics*	5		1	A:2	150

		Indicative price: € 0					
14	J000520	Pharmaceutical Production Processes *Chris Vervaet -- Department of Pharmaceutics* Indicative price: € 15	6		1	A:J	180
15	I003060	Sustainable Systems Engineering *Sophie Huysveld -- Department of Green Chemistry and Technology* Indicative price: € 0	5		2	A:1	150
16	I003071	Process Engineering 2 *Paul Van der Meeren -- Department of Green Chemistry and Technology* Indicative price: € 10	4		2	B:1	120
17	J000522	Pharmaceutical Process Validation and Quality *Thomas De Beer -- Department of Pharmaceutical Analysis* Indicative price: € 0	5		2	A:1	150
18	I003080	Process Control *Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling* Indicative price: € 0	5		2	A:2	150
19	J000521	Pharmaceutical Process and Equipment Design *Ashish Kumar -- Department of Pharmaceutical Analysis* Indicative price: € 0	8		2	A:J	240

2 Elective Courses

Subscribe to no less than 13 and no more than 18 credit units from no less than 1 and no more than 2 modules from the following list.
Subject to approval by the faculty.
Students pertaining to the general course target group ‘B’ are required to take up 18 credits (13 to 17 of which are to be taken in the first master's year, 3 to 5 in the second). Students pertaining to the target group 'P' are required to take up 13 credits (8 to 12 of which are to be taken in the first master's year, 3 to 5 in the second). Students pertaining to the target group ‘C’ are required to take up 14 credits (9 to 13 of which are to be taken in the first master’s year, 3 to 5 in the second).

2.1 Programme-Specific Electives

Nr	Course		CRDT	Ref	MT1	Session	Study
1	J000524	Advanced Modelling and Simulation of Pharmaceutical Systems *Ashish Kumar -- Department of Pharmaceutical Analysis* Indicative price: € 0	5		2	A:1	150
2	F001020	Introduction to Entrepreneurship *Petra Andries -- Department of Marketing, Innovation and Organisation* Indicative price: € 33	3			A:1	90
3	F000707	Project Management *Mario Vanhoucke -- Department of Business Informatics and Operations Management* Indicative price: € 75	6			A:1	180
4	E076221	Manufacturing Planning and Control *Birger Raa -- Department of Industrial Systems Engineering and Product Design* Indicative price: € 0	6			A:1	180
5	J000447	Advanced Biotherapies *Koen Raemdonck -- Department of Pharmaceutics* Indicative price: € 30	3			A:J	90
6	I003068	Management for Engineers *Jeroen Buysse -- Department of Agricultural Economics* Indicative price: € 0	4			A:1	120
7	C003701	Selected Topics in Mathematical Optimization *Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling* Indicative price: € 0	3		2	A:1	75
8	C004612	Advanced AI for Bioinformatics *Willem Waegeman -- Department of Data Analysis and Mathematical Modelling* Indicative price: € 0	6		2	A:1	180
9	J000445	Regulatory Affairs Health Products *Evelien Wynendaele -- Department of Pharmaceutical Analysis* Indicative price: € 0	3			A:J	90
10	J000454	Cutting Edge Technologies for Drug Delivery - Nanomedicines *Stefaan De Smedt -- Department of Pharmaceutics* Indicative price: € 0	3			A:2	90
11	J000455	Pharmaceutical Multivariate Design and Analysis of Experiments *Thomas De Beer -- Department of Pharmaceutical Analysis*	3			A:2	90

Indicative price: € 0

12	I003021	Advanced Biosystems Modelling	5	2	A:2	150
		Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling				
		Indicative price: € 0				

2.2 Ghent University Courses

Subscribe to no more than 3 credit units from courses available at Ghent University, including the Ghent University Elective Courses.
Subject to approval by the faculty.

3 Master's Dissertation 30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	J000523	Master's Dissertation	30		2	A:J	800
		Thomas De Beer -- Department of Pharmaceutical Analysis					
		Indicative price: unknown					

Programme related study costs

None

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

Learning materials

The prices stated are indicative and subject to fluctuations.
The list of learning materials per course unit can be found in the course sheets.