

Faculty of Pharmaceutical Sciences, Faculty of Bioscience Engineering  
Master of Science in Pharmaceutical Engineering

Language of instruction: English

Programme version 3

## 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 <a href="#">Indicative price: unknown</a>	4	B,C	1	A:1	120
2	J000517 Drug Product Formulation Chris Vervaet -- Department of Pharmaceutics <a href="#">Indicative price: € 15</a>	6	B,C	1	A:1	180
3	I002510 Reaction Kinetics and Reactor Design Paul Van der Meeren -- Department of Green Chemistry and Technology <a href="#">Indicative price: € 10</a>	5	P,C	1	B:1	150
4	I002612 Industrial Biotechnology Wim Soetaert -- Department of Biotechnology <a href="#">Indicative price: € 15</a>	5		1	A:1	150
5	I002675 Chemical Structure Determination Christian Stevens -- Department of Green Chemistry and Technology <a href="#">Indicative price: € 20</a>	4	B,P	1	A:1	120
6	J000519 Pharmaceutical Quality by Design and Process Analytical Technology Thomas De Beer -- Department of Pharmaceutical Analysis <a href="#">Indicative price: € 0</a>	5		1	A:1	150
7	C003080 Programming Peter Dawyndt -- Department of Applied Mathematics and Computer Science <a href="#">Indicative price: € 0</a>	5	P	1	C:1	150
8	J000548 Physical Chemistry of Liquid Drugs Stefaan De Smedt -- Department of Pharmaceutics <a href="#">Indicative price: unknown</a>	6	B	1	A:2	180
9	J000500 Pharmacology: Drugs and Their Targets Serge Van Calenbergh -- Department of Pharmaceutics <a href="#">Indicative price: € 25</a>	4	B,C	1	A:2	120
10	I002442 Process Engineering Jo Dewulf -- Department of Green Chemistry and Technology <a href="#">Indicative price: € 15</a>	5	P,C	1	B:2	150
11	I002892 Introduction to Data Science Jan Verwaeren -- Department of Data Analysis and Mathematical Modelling <a href="#">Indicative price: € 0</a>	4	P,C	1	A:2	120
12	I002891 Introduction to Mathematical Modelling Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling <a href="#">Indicative price: unknown</a>	6	P	1	A:2	180
13	J000518 Pharmaceutical Material Science Valérie Vanhoorne -- Department of Pharmaceutics	5		1	A:2	150

		<a href="#">Indicative price: € 0</a>				
14	J000520	Pharmaceutical Production Processes Chris Vervaeet -- Department of Pharmaceutics	6	1	A:J	180
		<a href="#">Indicative price: € 15</a>				
15	I002700	Clean Technology Sophie Huysveld -- Department of Green Chemistry and Technology	5	2	A:1	150
		<a href="#">Indicative price: unknown</a>				
16	I002618	Process Engineering 2 Paul Van der Meeren -- Department of Green Chemistry and Technology	4	2	B:1	120
		<a href="#">Indicative price: € 10</a>				
17	J000522	Pharmaceutical Process Validation and Quality Thomas De Beer -- Department of Pharmaceutical Analysis	5	2	A:1	150
		<a href="#">Indicative price: € 0</a>				
18	I002672	Process Control Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling	5	2	A:2	150
		<a href="#">Indicative price: € 0</a>				
19	J000521	Pharmaceutical Process and Equipment Design Ashish Kumar -- Department of Pharmaceutical Analysis	8	2	A:J	240
		<a href="#">Indicative price: € 0</a>				

## 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	5		2	A:1	150
		<a href="#">Indicative price: € 0</a>				
2	E076431 Introduction to Entrepreneurship Petra Andries -- Department of Marketing, Innovation and Organisation	3			A:1	90
		<a href="#">Indicative price: € 33</a>				
3	F000707 Project Management Mario Vanhoucke -- Department of Business Informatics and Operations Management	6			A:1	180
		<a href="#">Indicative price: € 75</a>				
4	E076221 Manufacturing Planning and Control Birger Raa -- Department of Industrial Systems Engineering and Product Design	6			A:1	180
		<a href="#">Indicative price: € 0</a>				
5	J000526 (International) Internship Thomas De Beer -- Department of Pharmaceutical Analysis	5			A:J	150
		<a href="#">Indicative price: € 0</a>				
6	J000447 Advanced Biotherapies Koen Raemdonck -- Department of Pharmaceutics	3			A:J	90
		<a href="#">Indicative price: € 30</a>				
7	I002619 Management for Engineers Jeroen Buysse -- Department of Agricultural Economics	4			A:1	120
		<a href="#">Indicative price: € 0</a>				
8	C003701 Selected Topics in Mathematical Optimization Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling	3		2	A:1	75
		<a href="#">Indicative price: € 0</a>				
9	I002932 Machine Learning for Life Sciences Willem Waegeman -- Department of Data Analysis and Mathematical Modelling	5		2	A:1	150
		<a href="#">Indicative price: € 0</a>				
10	J000445 Regulatory Affairs Health Products Evelien Wynendaele -- Department of Pharmaceutical Analysis	3			A:J	90
		<a href="#">Indicative price: € 0</a>				
11	J000454 Cutting Edge Technologies for Drug Delivery - Nanomedicines Stefaan De Smedt -- Department of Pharmaceutics	3			A:2	90

[Indicative price: € 0](#)

12	J000455	Pharmaceutical Multivariate Design and Analysis of Experiments Thomas De Beer -- Department of Pharmaceutical Analysis	3			A:2	90
		<a href="#">Indicative price: € 0</a>					
13	I003021	Advanced Biosystems Modelling Paul Van Liedekerke -- Department of Data Analysis and Mathematical Modelling	5	2		A:2	150
		<a href="#">Indicative price: € 0</a>					

## 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 Thomas De Beer -- Department of Pharmaceutical Analysis <a href="#">Indicative price: unknown</a>	30		2	A:J	800

## 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 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

### 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.