

Faculty of Engineering and Architecture  
Master of Science in Chemical Engineering

Language of instruction: English  
Programme version 12

## 1 General Courses 60 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E071200 Unit Operations in Chemical Industry <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6		1	B:1	180
2	E071131 Sustainable Chemical Production Processes <i>Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6		1	A:1	180
3	E068900 Structure and Dynamics of Polymers <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	B:1	180
4	E028700 Thermal Installations <i>Michel De Paep -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 50</a>	6		1	A:1	180
5	E072110 Chemical Reactors: Fundamentals and Applications <i>Paul Van Steenberghe -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	B:1	180
6	E073760 Chemical Process Design <i>Georgios Bellas -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6		1	B:2	180
7	E071170 Process Control <i>Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	A:2	180
8	E071140 Catalysis and Kinetics <i>Mark Saeys -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	A:2	180
9	E073720 Industrial Project <i>Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6		2	B:1	180
10	E072302 Safety, Health and Environmental Management <i>Paul Van Steenberghe -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	3		2	A:2	90
11	E071190 Process Intensification <i>Yi Ouyang -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	3		2	A:2	90

## 2 Elective Courses 36 credits

Subscribe to 36 credit units from 2 modules from the following list. Subject to approval by the faculty.

- 12 credit units in year 1
- 24 credit units in year 2.

### 2.1 In-Depth Elective Courses 18 credits

Subscribe to no less than 18 credit units from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E074200 Kinetic Modelling and Simulation <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	6			A:1	180

		<a href="#">Indicative price: unknown</a>			
2	E071181	Chemistry of Industrial Processes <i>Maarten Sabbe -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6		B:2 180
3	E071341	Molecular Modelling of Industrial Processes <i>Veronique Van Speybroeck -- Department of Applied Physics</i> <a href="#">Indicative price: € 0</a>	6		A:2 180
4	E064950	Polymer Reaction Engineering <i>Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6		A:2 180
5	E040533	Computational Fluid Dynamics in Chemical Technology <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	3		A:2 90

## 2.2 Broadening Elective Courses

18 credits

Subscribe to at most 18 credit units from 1 elective path from the following list. Subject to approval by the faculty.

### 2.2.1 Broadening Elective Courses: Option 1

18 credits

Subscribe to at most 18 credit units from no less than 1 and no more than 3 modules from the following list. Subject to approval by the faculty.

#### 2.2.1.1 Clusters

The student may choose electives across the different clusters.

##### 2.2.1.1.1 Cluster Economic Aspects

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E004255 Operations Research Models and Methods <i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
2	E076221 Manufacturing Planning and Control <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
3	E076820 Project Management <i>Mario Vanhoucke -- Department of Business Informatics and Operations Management</i> <a href="#">Indicative price: € 75</a>	6			A:2	180
4	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i> <a href="#">Indicative price: € 60</a>	6			A:1	180
5	F000551 Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 46</a>	4			C:2	120

##### 2.2.1.1.2 Cluster Chemistry

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I002679 Green Chemistry of Renewable Resources <i>Sven Mangelinckx -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 12</a>	4			A:1	120
2	E070650 Advanced Instrumental Techniques for Chemical Analysis <i>Laszlo Vincze -- Department of Chemistry</i> <a href="#">Indicative price: unknown</a>	3			A:1	90
3	C002965 Advanced Polymer Chemistry <i>Filip Du Prez -- Department of Organic Chemistry</i> <a href="#">Indicative price: unknown</a>	3			A:1	75
4	I002754 Environmental Chemistry: Organic Polluents [nl] <i>Christophe Walgraeve -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 105</a>	3			A:1	90
5	C004141 Materials Physics <i>Zeger Hens -- Department of Chemistry</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
6	C004159 Advanced X-ray Spectroscopy <i>Laszlo Vincze -- Department of Chemistry</i> <a href="#">Indicative price: € 8</a>	3			A:2	90

7	C004144	Topics in Nanoscience <i>Pieter Geiregat -- Department of Chemistry</i> <a href="#">Indicative price: € 0</a>	4			A:2	120
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#### 2.2.1.1.3 Cluster Fundamental Techniques

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I001280 Experimental Design <i>Stijn Luca -- Department of Data Analysis and Mathematical Modelling</i> <a href="#">Indicative price: € 15</a>	3			A:2	75
2	E005220 Linear Systems <i>Gert De Cooman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
3	E005722 Modelling and Simulation of Dynamical Systems <i>Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
4	E045240 Computational Fluid Dynamics <i>Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 75</a>	6			A:2	180
5	E039110 Technical Thermodynamics [nl] <i>Michel De Paepe -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 50</a>	6			A:1	180

#### 2.2.1.1.4 Cluster Materials

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E064961 Polymer Processing and Circularity <i>Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
2	E065340 Micro-analysis and Structure Determination in Materials Science <i>Roumen Petrov -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6			A:1	180
3	E066170 Physical Materials Science <i>Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6			C:1	180
4	C004145 Functional Ceramics <i>Klaartje De Buysser -- Department of Chemistry</i> <a href="#">Indicative price: € 7</a>	3			B:2	90
5	C004142 Surface Topology, Internal Structure and Composition <i>Mieke Adriaens -- Department of Chemistry</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
6	C004140 Nanomaterials Chemistry <i>Pascal Van Der Voort -- Department of Chemistry</i> <a href="#">Indicative price: € 100</a>	6			A:1	180
7	C004157 Principle and Applications of Stable Isotope Analysis <i>Pascal Boeckx -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 0</a>	3			A:2	90
8	C004155 Analytical Methods for Material Characterization <i>Mieke Adriaens -- Department of Chemistry</i> <a href="#">Indicative price: € 0</a>	9			A:1	270

#### 2.2.1.1.5 Cluster Technology

Nr	Course	CRDT	Ref	MT1	Session	Study
1	I002700 Clean Technology <i>Sophie Huysveld -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: unknown</a>	5			A:1	150
2	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 7</a>	4			A:2	120
3	I002618 Process Engineering 2 <i>Paul Van der Meeren -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 10</a>	5			A:1	150

4	I002934	Technology of Plant-based Foods <i>Koen Dewettinck -- Department of Food Technology, Safety and Health</i> <a href="#">Indicative price: € 0</a>	5			A:2	150
5	I002677	Thermochemical Conversion of Biomass [nl] <i>Frederik Ronsse -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 0</a>	4			A:2	120
6	E065472	Metal Extraction and Recycling <i>Inge Bellemans -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
7	E073770	Process Safety: Reactor Technology, Intrinsic Hazards and Process Safety Hazard Analysis <i>Paul Van Steenberghe -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	3				90
8	I002776	Processes in Practice <i>Eveline Volcke -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 2</a>	3			A:1	90
9	I002752	Advanced Wastewater Treatment Process Design <i>Eveline Volcke -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 0</a>	3			A:1	90
10	I002507	Environmental Technology: Solid Waste Streams [nl] <i>Frederik Ronsse -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 0</a>	4			A:2	120
11	I002683	Environmental Technology: Soil [nl] <i>Ellen Van De Vijver -- Department of Environment</i> <a href="#">Indicative price: € 0</a>	5			A:1	150
12	I002682	Environmental Technology: Air [nl] <i>Christophe Walgraeve -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: € 70</a>	5			A:1	150
13	E064761	Textile Functionalization <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:2	180

#### 2.2.1.1.6 Cluster Research Internship

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E099400 Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	6			A:J	180
2	E099400 Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	3			B:J	90

#### 2.2.1.2 Elective Social Courses

Subscribe to no less than 6 credit units from the following list. Subject to approval by the faculty.  
Students may apply for another elective social course, given a clear motivation and after approval by the faculty (exceptionally, as a rule a course from the list below is followed).

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E099300 Industry Internship Engineering and Architecture [en, nl] <i>Patrick Segers -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	6			A:J	180
2	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 50</a>	6			A:J	180
3	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 50</a>	3			B:J	90
4	E037810 Safety of Electrical and Mechanical Installations [nl] <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3			A:2	90
5	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 7</a>	4			A:2	120

6	E078310	Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 8</a>	3		A:1	90
7	E078320	Sustainable Use of Materials: Plastics and Derived Materials [nl] <i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	3		A:2	90
8	E078010	Technology and Environment <i>Luc Martens -- Department of Information Technology</i> <a href="#">Indicative price: € 0</a>	3		A:1	90
9	E078752	Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	4		A:2	120
10	E092100	Biosystems [nl] <i>Pascal Verdonck -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	3		A:1	90
11	E075310	Ethics, Engineering and Society [nl] <i>Seppe Segers -- Department of Philosophy and Moral Sciences</i> <a href="#">Indicative price: unknown</a>	3		A:2	90
12	C004009	History and Philosophy of Sciences [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i> <a href="#">Indicative price: € 0</a>	3		A:1 <sup>a</sup>	90
13	E076320	The Information Society and ICT [nl] <i>Erik Mannens -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	3		A:2	90
14	A001900	Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i> <a href="#">Indicative price: unknown</a>	3		A:1	90
15	H001977	Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i> <a href="#">Indicative price: € 0</a>	3	UKV	A:J	90
16	A005503	Context and Nuance. A Critical Reflection on Current Topics [nl] <i>Stef Craps -- Department of Literary Studies</i> <a href="#">Indicative price: € 0</a>	6	UKV	A:1	180
17	E076450	Basic Entrepreneurship [nl] <i>Yannick Dillen -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: unknown</a>	3	UKV	A:1	90
18	A005646	Introduction to Corporate Law [nl] <i>Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i> <a href="#">Indicative price: unknown</a>	3		A:1	90
19	E076460	Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: unknown</a>	4		A:2	120
20	E076471	Dare to Start <i>Wouter Haerick -- Department of Information Technology</i> <a href="#">Indicative price: unknown</a>	3		A:2	90
21	E076621	Principles of Law and Construction Law [nl] <i>Jelle Laverge -- Department of Architecture and Urban Planning</i> <a href="#">Indicative price: unknown</a>	3		A:1	90
22	E076951	Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i> <a href="#">Indicative price: € 60</a>	6		A:1	180
23	E076431	Introduction to Entrepreneurship <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 33</a>	3		A:1	90
24	H002169	Powerful Learning Environments [nl] <i>Bram De Wever -- Department of Educational Studies</i> <a href="#">Indicative price: € 50</a>	6		A:1	180
25	H002196	Classroom Management and Reflection [nl] <i>Tijs Rotsaert -- Department of Educational Studies</i> <a href="#">Indicative price: € 50</a>	4		A:2	120

26	H002197	The Teacher within School and Society [nl] <i>Melissa Tuytens -- Department of Educational Studies</i> <a href="#">Indicative price: € 50</a>	4			A:1	120
27	H002198	Psychology of Adolescence [nl] <i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i> <a href="#">Indicative price: € 51</a>	4			A:1	120
28	F000083	Macroeconomics [nl] <i>Freddy Heylen -- Department of Economics</i> <a href="#">Indicative price: € 65</a>	6			A:1	180
29	H001010	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i> <a href="#">Indicative price: € 45</a>	5			A:2	150
30	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 46</a>	4			C:2	120
31	A003001	Academic English <i>Geert Jacobs -- Department of Linguistics</i> <a href="#">Indicative price: € 0</a>	3	UKV		B:1, A:2	90
32	E075800	Communication [nl] <i>Leen Pollefliet -- Department of Information Technology</i> <a href="#">Indicative price: € 68</a>	3			A:1	90

### 2.2.1.3 Elective Courses Ghent University

Subscribe to no more than 12 credit units from Elective Courses Ghent University. Subject to approval by the faculty.  
[List of Ghent University Elective Courses](#)

### 2.2.2 Broadening Elective Courses: Option 2

18 credits

Subscribe to at most 18 credit units from 1 minor from the following list. Subject to approval by the faculty.

#### 2.2.2.1

Subscribe to 18 credit units from the following list, with 6 credit units with reference a. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E076221 Manufacturing Planning and Control <i>Birger Raai -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6	a		A:1	180
2	E004255 Operations Research Models and Methods <i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
3	E060240 Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 50</a>	6			A:2	180
4	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i> <a href="#">Indicative price: € 60</a>	6			A:1	180

#### 2.2.2.2

Subscribe to 18 credit units from the following list, with no less than 8 credit units with reference a. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E092623 Modelling of Physiological Systems <i>Patrick Segers -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 80</a>	5	a		A:2	150
2	E092662 From Genome to Organism <i>Fransiska Malfait -- Department of Biomolecular Medicine</i> <a href="#">Indicative price: unknown</a>	3	a		A:1	90
3	E074011 Quantitative Cell and Tissue Analysis <i>Andre Skirtach -- Department of Biotechnology</i> <a href="#">Indicative price: unknown</a>	6	a		A:1	180
4	E063671 Biomaterials and Tissue Engineering <i>Peter Dubruel -- Department of Organic Chemistry</i> <a href="#">Indicative price: unknown</a>	5			A:1	150
5	E063682 Biomechanics <i>Charlotte Debbaut -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:1	180

6	E010371	Medical Imaging <i>Stefaan Vandenberghe -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	6			A:1	180
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### 2.2.2.3

Subscribe to 18 credit units from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C002275 Environmental Law [nl] <i>Hendrik Schoukens -- Department of European, Public and International Law</i> <a href="#">Indicative price: € 0</a>	5			A:1	125
2	I002700 Clean Technology <i>Sophie Huysveld -- Department of Green Chemistry and Technology</i> <a href="#">Indicative price: unknown</a>	5			A:1	150
3	E065460 Rational Use of Materials <i>Tom Depover -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	5			A:1	150
4	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	4			A:2	120
5	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 7</a>	4			A:2	120
6	E078061 Introduction to Environmental Risk Assessment <i>Karel De Schampheleere -- Department of Animal Sciences and Aquatic Ecology</i> <a href="#">Indicative price: € 0</a>	3			A:1	90
7	I002606 Environmental Risk Assessment <i>Karel De Schampheleere -- Department of Animal Sciences and Aquatic Ecology</i> <a href="#">Indicative price: € 0</a>	5			A:1	150

## 3 Master's Dissertation

24 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E091103 Master's Dissertation <a href="#">Indicative price: unknown</a>	24		2	B:J	720

## 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.