Study Programme

Academic year 2025-2026

Faculty of Engineering and Architecture

Master of Science in Chemical Engineering

Language of instruction: Dutch

Programme version 17

1 General Courses — 60 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E071200	Unit Operations in Chemical Industry	6	1		A:1	180
		Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering					
2	E071131	Sustainable Chemical Production Processes	6	1		B:1	180
		Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering					
3	E068900	Structure and Dynamics of Polymers	6	1		A:1	180
		Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering					
4	E048500	Thermal Machines	6	1		B:2	180
		Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering					
5	E072110	Chemical Reactors: Fundamentals and Applications	6	2		A:2	180
		Paul Van Steenberge -- Department of Materials, Textiles and Chemical Engineering					
6	E073760	Chemical Process Design	6	1		A:2	180
		Georgios Bellos -- Department of Materials, Textiles and Chemical Engineering					
7	E071140	Catalysis and Kinetics	6	1		B:2	180
		Mark Saeys -- Department of Materials, Textiles and Chemical Engineering					
8	E071170	Process Control [en]	6	1		A:2	180
		Dana Copot -- Department of Electromechanical, Systems and Metal Engineering					
9	E073720	Industrial Project	6	2		A:1	180
		Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering					
10	E072302	Safety, Health and Environmental Management	3	2		B:2	90
		Paul Van Steenberge -- Department of Materials, Textiles and Chemical Engineering					
11	E071190	Process Intensification [en]	3	2		A:2	90
		Yi Ouyang -- Department of Materials, Textiles and Chemical Engineering					

2 Elective Courses — 36 credits

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

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	E073770	Process Safety: Reactor Technology, Intrinsic Hazards and Process Safety Hazard Analysis	3				90
		Paul Van Steenberge -- Department of Materials, Textiles and Chemical Engineering					
2	E021525	Statistical Physics	3			A:2	90
		Louis Vanduyfhuys -- Department of Applied Physics					
3	E071230	Advanced Catalysts Characterisation [en]	3			A:2	90
4	E064950	Polymer Reaction Engineering [en]	6			A:2	180
		Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering					
5	E074200	Kinetic Modelling and Simulation [en]	6			A:1	180
		Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering					
6	E071181	Chemistry of Industrial Processes [en]	6			B:2	180
7	E071341	Molecular Modelling of Industrial Processes [en]	6			A:2	180
		Veronique Van Speybroeck -- Department of Applied Physics					

| 8 | E040533 | Computational Fluid Dynamics in Chemical Technology [en] | 3 | | | A:2 | 90 |

Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering

2.2 Broadening Elective Courses   18 credits

Subscribe to at most 18 credit units from no less than 1 and no more than 9 modules from the following list. Subject to approval by the faculty.

2.2.1 Cluster Analytical Chemistry

Nr	Course		CRDT	Ref	MT1	Session	Study
1	I003079	Chemical Structure Determination [en]	4			A:1	120

Christian Stevens -- Department of Green Chemistry and Technology

2	E070650	Advanced Instrumental Techniques for Chemical Analysis [en]	3			A:1	90

Laszlo Vincze -- Department of Chemistry

3	C004159	Advanced X-ray Spectroscopy [en]	3			A:2	90

Laszlo Vincze -- Department of Chemistry

4	C004157	Principle and Applications of Stable Isotope Analysis [en]	3			A:2	90

Frank Vanhaecke -- Department of Chemistry

2.2.2 Cluster Artificial Intelligence

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E016350	Artificial Intelligence [en]	3			B:2	90

Aleksandra Pizurica -- Department of Telecommunications and Information Processing

2	E061330	Machine Learning [en]	6			B:1	180

Joni Dambre -- Department of Electronics and Information Systems

3	E045240	Computational Fluid Dynamics	6				180

Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering

4	I001280	Experimental Design [en]	3			A:2	75

Stijn Luca -- Department of Data Analysis and Mathematical Modelling

5	E005220	Linear Systems [en]	6			A:1	180

Gert De Cooman -- Department of Electronics and Information Systems

2.2.3 Cluster Energy Engineering

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E051540	Explosions and Industrial Fire Safety [en]	6			A:1	180

Filip Verplaetsen -- Department of Structural Engineering and Building Materials

2	E045930	Modelling of Turbulence and Combustion [en]	3			A:1	90

Alexander Snegirev -- Department of Structural Engineering and Building Materials

3	E038320	Nuclear Reactor Technology [en]	6			(A:2)[d]	180

Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering

4	E035421	Sustainable Energy [en]	3			A:1	90

Jan Mertens -- Department of Electromechanical, Systems and Metal Engineering

5	E039110	Technical Thermodynamics	6			A:1	180

Michel De Paepe -- Department of Electromechanical, Systems and Metal Engineering

2.2.4 Cluster Environmental Engineering

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C004164	Chemical Risk Assessment [en]	3			A:2	90

Marc Elskens -- Vrije Universiteit Brussel

2	I690011	End-of-Life Management of Packaging [en]	5			A:J	150

Steven De Meester -- Department of Green Chemistry and Technology

3	I002752	Advanced Wastewater Treatment Process Design [en]	3			A:1	90

Eveline Volcke -- Department of Green Chemistry and Technology

4	I003060	Sustainable Systems Engineering [en]	5			A:1	150

Sophie Huysveld -- Department of Green Chemistry and Technology

5	I002754	Environmental Chemistry: Organic Polluents	3			A:1	90

Christophe Walgraeve -- Department of Green Chemistry and Technology

6	C002275	Environmental Law	5			A:1	125

Hendrik Schoukens -- Department of European, Public and International Law

7	I002682	Environmental Technology: Air	5			A:1	150

Christophe Walgraeve -- Department of Green Chemistry and Technology

Nr	Course		CRDT	Ref	MT1	Session	Study
8	I002683	Environmental Technology: Soil	5			A:1	150
		Ellen Van De Vijver -- Department of Environment					
9	I002507	Environmental Technology: Solid Waste Streams	4			A:2	120
		Frederik Ronsse -- Department of Green Chemistry and Technology					
10	I002679	Green Chemistry of Renewable Resources [en]	4			A:1	120
		Sven Mangelinckx -- Department of Green Chemistry and Technology					
11	E065472	Metal Extraction and Recycling [en, nl]	6			A:2, B:2	180
		Inge Bellemans -- Department of Materials, Textiles and Chemical Engineering					
12	I002677	Thermochemical Conversion of Biomass	4			A:2	120
		Stef Ghysels -- Department of Green Chemistry and Technology					

2.2.5 Cluster Materials and Nanochemistry

Nr	Course		CRDT	Ref	MT1	Session	Study
1	C002965	Advanced Polymer Chemistry [en]	3			A:1	75
		Filip Du Prez -- Department of Organic Chemistry					
2	C004155	Analytical Methods for Material Characterization [en]	9			A:1	270
		Mieke Adriaens -- Department of Chemistry					
3	E066662	Environmentally Assisted Degradation of Materials [nl, en]	6			B:2, A:2	180
		Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering					
4	C004145	Functional Ceramics [en]	4			A:2	110
		Klaartje De Buysser -- Department of Chemistry					
5	C004141	Materials Physics [en]	6			A:1	180
		Zeger Hens -- Department of Chemistry					
6	E065340	Micro-analysis and Structure Determination in Materials Science [en]	6			A:2	180
		Hossein Beladi -- Department of Electromechanical, Systems and Metal Engineering					
7	C004140	Nanomaterials Chemistry [en]	6			A:1	180
		Klaartje De Buysser -- Department of Chemistry					
8	E064961	Polymer Processing and Circularity [en]	6			A:2	180
		Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering					
9	C004142	Surface Topology, Internal Structure and Composition [en]	6			A:1	180
		Mieke Adriaens -- Department of Chemistry					
10	E064761	Textile Functionalization [en]	6			A:2	180
		Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering					
11	C004144	Topics in Nanoscience [en]	4			A:2	120
		Pieter Geiregat -- Department of Chemistry					
12	E024730	Complex Materials and Rheology [en]	6			A:2	180
		Flavio Marchesini de Oliveira -- Department of Materials, Textiles and Chemical Engineering					

2.2.6 Cluster Operations Management

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E076221	Manufacturing Planning and Control [en]	6	a		A:1	180
		Birger Raa -- Department of Industrial Systems Engineering and Product Design					
2	E004255	Operations Research Models and Methods [en]	6			A:1	180
		El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design					
3	E076820	Project Management [en]	6			A:2	180
		Mario Vanhoucke -- Department of Business Informatics and Operations Management					
4	E060240	Quality Engineering and Industrial Statistics [nl, en]	6			B:2, A:2	180
		Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design					

2.2.7

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E099400	Research Internship [en]	6			A:J	180
		Patrick Segers -- Department of Electronics and Information Systems					
2	E099400	Research Internship [en]	3			B:J	90
		Patrick Segers -- Department of Electronics and Information Systems					

2.2.8 Elective Social Courses

Nr	Course	CRDT	Ref	MT1	Session	Study

1	E099300	Industry Internship Engineering and Architecture [en, nl]	6		A:J	180
		Patrick Segers -- Department of Electronics and Information Systems				
2	E098010	Integrated Portfolio [en, nl]	6		A:J	180
		Hiep Luong -- Department of Telecommunications and Information Processing				
3	E098010	Integrated Portfolio [en, nl]	3		B:J	90
		Hiep Luong -- Department of Telecommunications and Information Processing				
4	E037810	Safety of Electrical and Mechanical Installations	3		A:2	90
		Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering				
5	E039060	Sustainable Energy and Rational Use of Energy [en]	4		A:2	120
		Filip Strubbe -- Department of Electronics and Information Systems				
6	E078310	Sustainable Use of Materials: Metals	3		A:1	90
		Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering				
7	E078320	Sustainable Use of Materials: Plastics and Derived Materials	3		A:2	90
		Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering				
8	E078010	Technology and Environment [en]	3		A:1	90
		Luc Martens -- Department of Information Technology				
9	E078752	Water and Air Quality Management [en]	4		A:2	120
		Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering				
10	E092100	Biosystems	3		A:1	90
		Pascal Verdonck -- Department of Electronics and Information Systems				
11	E075310	Ethics, Engineering and Society	3		A:2	90
		Seppe Segers -- Department of Philosophy and Moral Sciences				
12	C004009	History and Philosophy of Sciences	3		B:2	90
		Maarten Van Dyck -- Department of Philosophy and Moral Sciences				
13	E076320	The Information Society and ICT	3		A:2	90
		Erik Mannens -- Department of Electronics and Information Systems				
14	A001900	Introduction to Psychology	3		A:1	90
		Wim Notebaert -- Department of Experimental Psychology				
15	H001977	Coaching and Diversity	3	UKV	A:J	90
		Elisabeth De Schauwer -- Department of Special Education				
16	A005503	Context and Nuance. A Critical Reflection on Current Topics	6	UKV	A:1	180
		July De Wilde -- Department of Translation, Interpreting and Communication				
17	F001021	Basic Entrepreneurship	3	UKV	A:1	90
		Evy Van Lancker -- Department of Marketing, Innovation and Organisation				
18	A005646	Introduction to Corporate Law	3		A:1	90
		Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law				
19	F001022	Dare to Venture [en]	4		A:2	120
		Johan Verrue -- Department of Marketing, Innovation and Organisation				
20	E076471	Dare to Start [en]	3		A:2	90
		Wouter Haerick -- Department of Information Technology				
21	E076621	Principles of Law and Construction Law	3		A:1	90
		Jelle Laverge -- Department of Architecture and Urban Planning				
22	E076951	Engineering Economy [en]	6		A:1	180
		Sofie Verbrugge -- Department of Information Technology				
23	F001020	Introduction to Entrepreneurship [en]	3		A:1	90
		Petra Andries -- Department of Marketing, Innovation and Organisation				
24	H002476	Powerful Learning Environments	6		A:1	180
		Bram De Wever -- Department of Educational Studies				
25	H002477	The Teacher within Class, School and Society	6		A:2	180
		Melissa Tuytens -- Department of Educational Studies				
26	H002478	The Student: Development and Motivation	6		A:1	180
		Wim Beyers -- Department of Developmental, Personality and Social Psychology				
27	F000083	Macroeconomics	6		A:1	180
		Freddy Heylen -- Department of Economics				
28	H001010	Introduction Industrial Psychology	5		C:1	150
		Bart Wille -- Department of Developmental, Personality and Social Psychology				
29	F000551	Business Skills [en]	4		C:2	120
		Mieke Audenaert -- Department of Marketing, Innovation and Organisation				

30	A003001	Academic English [en]	3	UKV		B:1, A:2	90
		Geert Jacobs -- Department of Linguistics					
31	E075800	Communication	3			A:1	90
		Leen Pollefliet -- Department of Information Technology					
32	E037830	Basics of Health and Safety at Work for Engineers	3			A:1	90
		Sofie Van Volsem -- Department of Industrial Systems Engineering and Product Design					

2.2.9 Elective Courses Ghent University

3 Master's Dissertation   24 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E091103	Master's Dissertation	24		2	A:J	720

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