

Faculty of Engineering and Architecture

Master of Science in Electromechanical Engineering -- Control Engineering and Automation

Language of instruction: English

Programme version 12

## 1 General Courses 36 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E036130 <b>Controlled Electrical Drives</b> <i>Frederik De Belie -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	B:1	180
2	E037321 <b>Turbomachines</b> <i>Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	B:1	180
3	E037121 <b>Displacement Pumps, Compressors and IC Engine Fundamentals</b> <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
4	E019331 <b>ICT and Mechatronics</b> <i>Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6		1	A:2	180
5	E040670 <b>Mechanical Vibrations</b> <i>Mia Loccufer -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 12</a>	6		1	B:2	180
6	E076221 <b>Manufacturing Planning and Control</b> <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		2	A:1	180

## 2 Courses Related to the Main Subject 36 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E005220 <b>Linear Systems</b> <i>Gert De Cooman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6		1	A:2	180
2	E007920 <b>Computer Control of Industrial Processes</b> <i>Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
3	E005722 <b>Modelling and Simulation of Dynamical Systems</b> <i>Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		1	A:2	180
4	E036900 <b>Dynamics of Electrical Machines and Drives</b> <i>Frederik De Belie -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6		2	A:1	180
5	E004021 <b>Nonlinear Systems</b> <i>Jasper De Bock -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 65</a>	6		2	B:1	180
6	E008420 <b>Servo Systems and Industrial Robots</b> <i>Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3		2	A:1	90
7	E030520 <b>Power Electronics</b> <i>Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering</i>	3		2	A:2	90

## 3 Elective Courses

24 credits

Subscribe to 24 credit units from 1 path from the following list. Subject to approval by the faculty.

Distributed as follows:

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

## 3.1 Elective Courses: Path 1

## 3.1.1 Elective Social Courses

Subscribe to no less than 6 credit units from the following list. Subject to approval by the faculty.

The course 'Safety of Electrical and Mechanical Installations' is compulsory.

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

### 3.1.2 Elective Courses Electromechanical Engineering/Faculty

Subscribe to at least 6 credit units from no less than 1 and no more than 2 modules from the following list. Subject to approval by the faculty.

#### 3.1.2.1 Elective Courses Electromechanical Engineering

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E061621 Automotive Technology <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3			A:2	90

2	E045930	Modelling of Turbulence and Combustion <i>Alexander Snegirev -- Department of Structural Engineering and Building Materials</i> <a href="#">Indicative price: unknown</a>	3	A:1	90
3	E061960	Aeroplanes <i>Benoit Marinus -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 20</a>	3	A:1	90
4	E038320	Nuclear Reactor Technology <i>Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6	A:2 <sup>a</sup>	180
5	E038030	Nuclear Reactor Theory: part 2 <i>Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3	A:1	90
6	E028330	Thermal-hydraulics and Safety Analysis of Nuclear Systems <i>Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6	(A:2) <sup>d</sup>	180
7	E055320	Ship Behaviour in Shallow and Confined Water <i>Guillaume Delefortrie -- Department of Civil Engineering</i> <a href="#">Indicative price: € 25</a>	3	A:2	90
8	E040560	Fluid Mechanics <i>Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3	A:1	90
9	E004160	Numerical Optimisation <i>Jolan Wauters -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3	A:1	90
10	F000845	Business Administration [nl] <i>Mirjam Knockaert -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 35</a>	4	A:2	120
11	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 46</a>	4	C:2	120
12	E051610	Passive Fire Protection <i>Emmanuel Annerel -- Department of Structural Engineering and Building Materials</i> <a href="#">Indicative price: unknown</a>	3	A:1	90
13	E051540	Explosions and Industrial Fire Safety <i>Filip Verplaetsen -- Department of Structural Engineering and Building Materials</i> <a href="#">Indicative price: unknown</a>	6	A:1	180
14	B001375	Energy Law [nl] <i>Frederik Vandendriessche -- Department of European, Public and International Law</i> <a href="#">Indicative price: € 45</a>	4	A:2	120
15	E053642	Railway Technology Fundamentals <i>Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 5</a>	3	A:1	90
16	E053643	Advanced Railway Technology <i>Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 5</a>	3	A:2	90
17	E053620	Railroads [nl] <i>Jan Mys -- Department of Civil Engineering</i> <a href="#">Indicative price: unknown</a>	3	A:2	90

### 3.1.2.2 Elective Courses Faculty of Engineering and Architecture

Subscribe to course units from the study programmes of the Faculty of Engineering and Architecture. Subject to approval by the faculty.

### 3.1.3 Elective Courses Ghent University

Subscribe to course units from the programmes of Ghent University including the Ghent University Elective Courses. Subject to approval by the faculty.

[List of Ghent University Elective Courses](#)

## 3.2 Elective Courses: Path 2

### 3.2.1 Minor Operations Management

Subscribe to 24 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
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1	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		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

### 3.2.2 Minor Environment and Sustainable Development

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 Schampelaere -- 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 Schampelaere -- Department of Animal Sciences and Aquatic Ecology</i> <a href="#">Indicative price: € 0</a>	5			A:1	150

### 3.2.3 Minor Biosystems

Subscribe to 24 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 Dubrueel -- Department of Organic Chemistry</i> <a href="#">Indicative price: unknown</a>	5			A:1	150
5	E063682 Biomechanics <i>Charlotte Debbaud -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
6	E010371 Medical Imaging <i>Stefaan Vandenberghhe -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	6			A:1	180

### 3.2.4 Minor Automotive Production Engineering

Subscribe to 24 credit units from the following list, with  
• no less than 6 credit units from the courses with reference a,

- no less than 6 credit units from the courses with reference b.  
Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	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		A:1	180
2	E076380 Methods Engineering and Work Measurement <i>Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 50</a>	6	a		A:2	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		A:2	180
4	E066662 Environmentally Assisted Degradation of Materials <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 10</a>	6	b		A:2	180
5	E066270 Metal Processing and Technology <i>Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6	b		A:2	180
6	E900069 Composites <i>Wim Van Paeppegem -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 20</a>	6	b		A:1	180
7	E043070 Materials Selection in Mechanical Design <i>Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6	b		B:2	180
8	E061322 Machine Design <i>Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6	c		A:1	180
9	E037121 Displacement Pumps, Compressors and IC Engine Fundamentals <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6	c		A:1	180
10	E037221 IC Engines: advanced design and research <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3	c		A:2	90
11	E061621 Automotive Technology <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3	c		A:2	90
12	E007920 Computer Control of Industrial Processes <i>Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6	c		A:1	180
13	E008420 Servo Systems and Industrial Robots <i>Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3	c		A:1	90
14	E030520 Power Electronics <i>Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3	c		A:2	90

### 3.3 Elective Courses: Path 3

Subscribe to 24 credit units from 2 modules from the following list. Subject to approval by the faculty.

#### 3.3.1 Elective Courses: Minors

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

##### 3.3.1.1 Minor Operations Management

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 Raa -- 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

### 3.3.1.2 Minor Environment and Sustainable Development

[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

### 3.3.1.3 Minor Biosystems

[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 Dubrueel -- 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

### 3.3.1.4 Minor Computer Science Engineering

[Subscribe to 18 credit units from the following list. Subject to approval by the faculty.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E034140 Parallel Computer Systems <i>Lieven Eeckhout -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
2	E017930 Parallel and Distributed Software Systems <i>Filip De Turck -- Department of Information Technology</i>	6			A:1	180

		<a href="#">Indicative price: unknown</a>				
3	E017920	Design of Multimedia Applications <i>Glenn Van Wallendael -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 123</a>	6		A:2	180
4	E012320	Mobile and Broadband Access Networks <i>Ingrid Moerman -- Department of Information Technology</i> <a href="#">Indicative price: € 30</a>	6		B:2	180
5	E003600	Information Theory <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 13</a>	6		B:2	180
6	E011322	Queueing Analysis and Simulation <i>Joris Walraevens -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 10</a>	6		A:1	180

### 3.3.1.5 Minor Electronics and ICT

[Subscribe to 18 credit units from the following list. Subject to approval by the faculty.](#)

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E022230	Antennas and Propagation <i>Hendrik Rogier -- Department of Information Technology</i> <a href="#">Indicative price: € 10</a>	6			A:1	180
2	E033021	Electromagnetic-aware High Frequency Design <i>Hendrik Rogier -- Department of Information Technology</i> <a href="#">Indicative price: € 10</a>	6			A:1	180
3	E012130	Modulation and Detection <i>Nele Noels -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 10</a>	6			B:1	180
4	E003600	Information Theory <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 13</a>	6			B:2	180
5	E031251	Design Methodology for FPGAs <i>Dirk Stroobandt -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
6	E033640	High-speed Electronics <i>Johan Bauwelink -- Department of Information Technology</i> <a href="#">Indicative price: € 15</a>	6			A:2	180

### 3.3.1.6 Minor Materials Engineering

[Subscribe to 18 credit units from the following list. Subject to approval by the faculty.](#)

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E042740	Fracture and Deformation Behaviour of Materials <i>Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6			B:1	180
2	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			B:1	180
3	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
4	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
5	E066662	Environmentally Assisted Degradation of Materials <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 10</a>	6			A:2	180
6	E066020	Microstructure of Materials [nl] <i>Marcel Sluiter -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	6			A:2	180
7	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



8	E069041	Bio-based and Synthetic Fibres <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
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### 3.3.1.7 Minor Chemical Engineering

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

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	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			B:1	180
2	E071200	Unit Operations in Chemical Industry <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6			B:1	180
3	E045910	Heat Engineering and Mass Transport [nl] <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6			A:1	180
4	E073760	Chemical Process Design <i>Georgios Bellos -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6			B:2	180
5	E007920	Computer Control of Industrial Processes <i>Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
6	E071131	Sustainable Chemical Production Processes <i>Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: unknown</a>	6			A:1	180
7	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

### 3.3.1.8 Minor Photonics Engineering

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

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	E030610	Photonics [nl] <i>Günther Roelkens -- Department of Information Technology</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
2	E030660	Lasers <i>Geert Morthier -- Department of Information Technology</i> <a href="#">Indicative price: € 10</a>	4			A:1	120
3	E030761	Microphotonics <i>Dries Van Thourhout -- Department of Information Technology</i> <a href="#">Indicative price: € 10</a>	6			A:1	180
4	E024800	Optical Materials <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 7</a>	6			A:1	180
5	E008446	Sensors, Actuators and Electronic Microsystems <i>Herbert De Smet -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
6	E030721	Laboratories in Photonics Research <i>Alberto Curto -- Department of Information Technology</i> <a href="#">Indicative price: € 0</a>	6			A:2	180
7	E031521	Physics of Semiconductor Technologies and Devices <i>Geert Van Steenberghe -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: unknown</a>	4			A:2	120

### 3.3.1.9 Minor Materials Physics

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

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	E024610	Solid-state Physics and Semiconductors I [nl] <i>Henk Vrielinck -- Department of Solid State Sciences</i> <a href="#">Indicative price: € 8</a>	6			A:1	180
2	E024641	Physics of Semiconductor Devices <i>Benoit Bakeroot -- Department of Electronics and Information Systems</i>	6			B:2	180

[Indicative price: € 10](#)

3	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
4	E026221	Plasma Physics <i>Geert Verdoolaeye -- Department of Applied Physics</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
5	E029040	Physical Chemistry <i>Iwan Moreels -- Department of Chemistry</i> <a href="#">Indicative price: € 0</a>	6			B:2	180
6	E025010	Atomic and Molecular Physics <i>Veronique Van Speybroeck -- Department of Applied Physics</i> <a href="#">Indicative price: € 10</a>	6			A:1	180

### 3.3.1.10 Minor Power Engineering

[Subscribe to 18 credit units from the following list. Subject to approval by the faculty.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E035421 Sustainable Energy <i>Jan Mertens -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3			A:1	90
2	E037621 Gas Turbines <i>Ward De Paepe -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3			A:1	90
3	E037121 Displacement Pumps, Compressors and IC Engine Fundamentals <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
4	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
5	E037820 Technology of Electrical Installations <i>Peter Sergeant -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 90</a>	3			A:2	90
6	E038020 Nuclear Reactor Theory: part 1 <i>Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: unknown</a>	3			A:1	90
7	E028700 Thermal Installations <i>Michel De Paepe -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 50</a>	6			A:1	180
8	E035050 Operational Aspects of Electrical Power Systems <i>Lieven Vandevelde -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	3			A:2	90

### 3.3.2

[Subscribe to 6 credit units from the following list. Subject to approval by the faculty.](#)

The course 'Safety of Electrical and Mechanical Installations' is compulsory.

[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>	4			A:2	120

		<a href="#">Indicative price: € 7</a>			
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>Seppie 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>	4		A:2 120

		<a href="#">Indicative price: € 50</a>				
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

#### 4 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.