

Faculty of Engineering and Architecture

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

Language of instruction: English

Programme version 11

1 General Courses 36 credits

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

2 Courses Related to the Main Subject 36 credits

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

Subscribe to 24 credit units from no less than 2 and no more than 3 modules from the following list. Subject to approval by the faculty.

- Subscribe to at least 6 credit units Elective Social Courses
- and subscribe to at least 6 credit units Elective Courses Electromechanical Engineering/Faculty

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>	6			A:J	180
2	E037810 Safety of Electrical and Mechanical Installations [nl] <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
3	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	4			A:2	120
4	K001339 Sustainability Thinking [nl] <i>Thomas Block -- Department of Political Sciences</i>	5	UKV		A:J	150
5	E078310 Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:1	90
6	E078320 Sustainable Use of Materials: Plastics and Derived Materials [nl] <i>Lode Daelemaans -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:2	90
7	E078010 Technology and Environment <i>Luc Martens -- Department of Information Technology</i>	3			A:1	90
8	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120
9	E092100 Biosystems [nl] <i>Pascal Verdonck -- Department of Electronics and Information Systems</i>	3			A:1	90
10	E075310 Ethics, Engineering and Society [nl] <i>Seppe Segers -- Department of Philosophy and Moral Sciences</i>	3			A:2	90
11	E075060 Philosophy and Science [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>	3			A:1	90
12	E076320 The Information Society and ICT [nl] <i>Erik Mannens -- Department of Electronics and Information Systems</i>	3			A:1	90
13	A001900 Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i>	3			A:1	90
14	H001977 Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i>	3	UKV		A:J	90
15	A005503 Context and Nuance. A Critical Reflection on Current Topics [nl] <i>Stef Craps -- Department of Literary Studies</i>	6	UKV		A:1	180
16	E076450 Basic Entrepreneurship [nl] <i>Yannick Dillen -- Department of Marketing, Innovation and Organisation</i>	3	UKV		A:1	90
17	E076431 Introduction to Entrepreneurship <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3			A:1	90
18	E076460 Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120
19	E076471 Dare to Start <i>Frank Gielen -- Department of Information Technology</i>	3			A:2	90
20	E076621 Principles of Law and Construction Law [nl] <i>Jelle Laverge -- Department of Architecture and Urban Planning</i>	3			A:1	90
21	E076520 Commercial Law [nl] <i>Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i>	3			A:1	90
22	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i>	6			A:1	180
23	H002169 Powerful Learning Environments [nl] <i>Bram De Wever -- Department of Educational Studies</i>	6			A:1	180
24	H002196 Classroom Management and Reflection [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	4			A:2	120
25	H002197 The Teacher within School and Society [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	4			A:1	120
26	H002198 Psychology of Adolescence [nl] <i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i>	4			A:1	120
27	F000083 Macroeconomics [nl] <i>Freddy Heylen -- Department of Economics</i>	6			A:1	180

28	H001010	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i>	5		Z:1	150
29	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>	4		C:2	120
30	A003001	Academic English <i>Geert Jacobs -- Department of Linguistics</i>	3	UKV	B:1, A:2	90
31	E075800	Communication [nl] <i>Leen Pollefliet -- Department of Information Technology</i>	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>	3			A:2	90
2	E045930 Modelling of Turbulence and Combustion <i>Alexander Snegirev -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
3	E061960 Aeroplanes <i>Benoît Marinus -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
4	E038320 Nuclear Reactor Technology <i>Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering</i>	6			(A:2) ^d	180
5	E038030 Nuclear Reactor Theory: part 2 <i>Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering</i>	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>	6			A:2 ^a	180
7	E055320 Ship Behaviour in Shallow and Confined Water <i>Guillaume Delefortrie -- Department of Civil Engineering</i>	3			A:2	90
8	E040560 Fluid Mechanics <i>Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
9	E004160 Numerical Optimisation <i>Jolan Wauters -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
10	F000845 Business Administration [nl] <i>Mirjam Knockaert -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120
11	F000551 Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>	4			C:2	120
12	E051610 Passive Fire Protection <i>Emmanuel Annerel -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
13	E051540 Explosions and Industrial Fire Safety <i>Filip Verplaetsen -- Department of Structural Engineering and Building Materials</i>	6			A:1	180
14	B001375 Energy Law [nl] <i>Frederik Vandendriessche -- Department of European, Public and International Law</i>	4			A:2	120
15	E053642 Railway Technology Fundamentals <i>Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
16	E053643 Advanced Railway Technology <i>Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
17	E053620 Railroads [nl] <i>Jan Mys -- Department of Civil Engineering</i>	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

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

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
1	E076221 Manufacturing Planning and Control <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i>	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>	6			A:1	180
3	E060240 Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i>	6			A:2	180
4	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i>	6			A:1	180

3.2.2 Minor Environment and Sustainable Development

Subscribe to 24 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>	5			A:1	125
2	E065410 Sustainability of Materials <i>Nele De Belie -- Department of Structural Engineering and Building Materials</i>	4			A:2	120
3	E078910 Environmental Impact of Radiation and Noise	3				90
4	I002700 Clean Technology <i>Sophie Huysveld -- Department of Green Chemistry and Technology</i>	5			A:1	150
5	E065460 Rational Use of Materials <i>Tom Depover -- Department of Materials, Textiles and Chemical Engineering</i>	5			A:1	150
6	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120
7	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	4			A:2	120
8	E078061 Introduction to Environmental Risk Assessment <i>Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology</i>	3			A:1	90
9	I002606 Environmental Risk Assessment <i>Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology</i>	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>	5	a		A:2	150
2	E092662 From Genome to Organism <i>Fransiska Malfait -- Department of Biomolecular Medicine</i>	3	a		A:1	90
3	E074011 Quantitative Cell and Tissue Analysis <i>An Hendrix -- Department of Human Structure and Repair</i>	6	a		A:1	180
4	E063671 Biomaterials and Tissue Engineering <i>Ruslan Dmitriev -- Department of Human Structure and Repair</i>	5			A:1	150
5	E063682 Biomechanics <i>Charlotte Debbaut -- Department of Electronics and Information Systems</i>	6			A:1	180
6	E010371 Medical Imaging <i>Stefaan Vandenberghe -- Department of Electronics and Information Systems</i>	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>	6	a		A:1	180
2	E076380 Methods Engineering and Work Measurement <i>Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i>	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>	6	a		A:2	180

4	E005770	Total Plant Automation	6	a		180
5	E066662	Environmentally Assisted Degradation of Materials <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	6	b	A:2	180
6	E066270	Metal Processing and Technology <i>Roumen Petrov -- Department of Electromechanical, Systems and Metal Engineering</i>	6	b	A:2	180
7	E900069	Composites <i>Wim Van Paepegem -- Department of Materials, Textiles and Chemical Engineering</i>	6	b	A:1	180
8	E043070	Materials Selection in Mechanical Design <i>Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering</i>	6	b	B:2	180
9	E061322	Machine Design <i>Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering</i>	6	c	A:1	180
10	E037121	Displacement Pumps, Compressors and IC Engine Fundamentals <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i>	6	c	A:1	180
11	E037221	IC Engines: advanced design and research <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i>	3	c	A:2	90
12	E061621	Automotive Technology <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i>	3	c	A:2	90
13	E007920	Computer Control of Industrial Processes <i>Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i>	6	c	A:1	180
14	E008420	Servo Systems and Industrial Robots <i>Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering</i>	3	c	A:1	90
15	E030520	Power Electronics <i>Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering</i>	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>	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>	6			A:1	180
3	E060240 Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i>	6			A:2	180
4	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i>	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>	5			A:1	125
2	E065410 Sustainability of Materials <i>Nele De Belie -- Department of Structural Engineering and Building Materials</i>	4			A:2	120
3	E078910 Environmental Impact of Radiation and Noise	3				90
4	I002700 Clean Technology <i>Sophie Huysveld -- Department of Green Chemistry and Technology</i>	5			A:1	150
5	E065460 Rational Use of Materials <i>Tom Depover -- Department of Materials, Textiles and Chemical Engineering</i>	5			A:1	150
6	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120
7	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	4			A:2	120
8	E078061 Introduction to Environmental Risk Assessment <i>Karel De Schampheleere -- Department of Animal Sciences and Aquatic Ecology</i>	3			A:1	90

9	I002606	Environmental Risk Assessment <i>Karel De Schampelaere -- Department of Animal Sciences and Aquatic Ecology</i>	5			A:1	150
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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>	5	a		A:2	150
2	E092662 From Genome to Organism <i>Fransiska Malfait -- Department of Biomolecular Medicine</i>	3	a		A:1	90
3	E074011 Quantitative Cell and Tissue Analysis <i>An Hendrix -- Department of Human Structure and Repair</i>	6	a		A:1	180
4	E063671 Biomaterials and Tissue Engineering <i>Ruslan Dmitriev -- Department of Human Structure and Repair</i>	5			A:1	150
5	E063682 Biomechanics <i>Charlotte Debbaut -- Department of Electronics and Information Systems</i>	6			A:1	180
6	E010371 Medical Imaging <i>Stefaan Vandenbergh -- Department of Electronics and Information Systems</i>	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>	6			A:1	180
2	E017930 Parallel and Distributed Software Systems <i>Jan Fostier -- Department of Information Technology</i>	6			A:1	180
3	E017920 Design of Multimedia Applications <i>Glenn Van Wallendael -- Department of Electronics and Information Systems</i>	6			A:2	180
4	E012320 Mobile and Broadband Access Networks <i>Mario Pickavet -- Department of Information Technology</i>	6			B:2	180
5	E003600 Information Theory <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i>	6			B:2	180
6	E011322 Queueing Analysis and Simulation <i>Joris Walraevens -- Department of Telecommunications and Information Processing</i>	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>	6			A:1	180
2	E033021 Electromagnetic-aware High Frequency Design <i>Hendrik Rogier -- Department of Information Technology</i>	6			A:1	180
3	E012130 Modulation and Detection <i>Nele Noels -- Department of Telecommunications and Information Processing</i>	6			B:1	180
4	E003600 Information Theory <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i>	6			B:2	180
5	E031251 Design Methodology for FPGAs <i>Dirk Stroobandt -- Department of Electronics and Information Systems</i>	6			A:1	180
6	E033640 High-speed Electronics <i>Johan Bauwelinck -- Department of Information Technology</i>	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>	6			B:1	180
2	E068900 Structure and Dynamics of Polymers <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i>	6			B:1	180
3	E064961 Polymer Processing and Circularity <i>Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering</i>	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>	6		A:1	180
5	E066662	Environmentally Assisted Degradation of Materials <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	6		A:2	180
6	E066020	Microstructure of Materials [nl] <i>Marcel Sluiter -- Department of Electromechanical, Systems and Metal Engineering</i>	6		A:2	180
7	E064761	Textile Functionalization <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i>	6		(A:2) ^c	180
8	E069041	Bio-based and Synthetic Fibres <i>Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering</i>	6		A:1	180

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>René Bos -- Department of Materials, Textiles and Chemical Engineering</i>	6		B:1	180
2	E071200	Unit Operations in Chemical Industry <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i>	6		B:1	180
3	E045910	Heat Engineering and Mass Transport [nl] <i>Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering</i>	6		A:1	180
4	E073760	Chemical Process Design <i>Philip De Smedt -- Department of Materials, Textiles and Chemical Engineering</i>	6		B:2	180
5	E007920	Computer Control of Industrial Processes <i>Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i>	6		A:1	180
6	E071131	Sustainable Chemical Production Processes <i>Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering</i>	6		A:1	180
7	E071181	Chemistry of Industrial Processes <i>Maarten Sabbe -- Department of Materials, Textiles and Chemical Engineering</i>	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>	6		A:2	180
2	E030660	Lasers <i>Geert Morthier -- Department of Information Technology</i>	4		A:1	120
3	E030761	Microphotonics <i>Dries Van Thourhout -- Department of Information Technology</i>	6		A:1	180
4	E024800	Optical Materials <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	6		A:1	180
5	E008446	Sensors, Actuators and Electronic Microsystems <i>Herbert De Smet -- Department of Electronics and Information Systems</i>	6		A:2	180
6	E030721	Laboratories in Photonics Research <i>Alberto Curto -- Department of Information Technology</i>	6		A:2	180
7	E031521	Physics of Semiconductor Technologies and Devices <i>Geert Van Steenberge -- Department of Electronics and Information Systems</i>	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>	6		A:1	180
2	E024641	Physics of Semiconductor Devices <i>Benoit Bakeroort -- Department of Electronics and Information Systems</i>	6		B:2	180
3	E065340	Micro-analysis and Structure Determination in Materials Science <i>Roumen Petrov -- Department of Electromechanical, Systems and Metal Engineering</i>	6		A:1	180
4	E026221	Plasma Physics <i>Geert Verdoolaege -- Department of Applied Physics</i>	6		A:1	180
5	E029040	Physical Chemistry <i>Iwan Moreels -- Department of Chemistry</i>	6		B:2	180

6	E025010	Atomic and Molecular Physics <i>Veronique Van Speybroeck -- Department of Applied Physics</i>	6		A:1	180
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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>	3			A:1	90
2	E037621 Gas Turbines <i>Ward De Paepe -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
3	E037121 Displacement Pumps, Compressors and IC Engine Fundamentals <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i>	6			A:1	180
4	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	4			A:2	120
5	E036111 Electrical Drives [nl] <i>Luc Dupré -- Department of Electromechanical, Systems and Metal Engineering</i>	6			A:2	180
6	E037820 Technology of Electrical Installations <i>Peter Sergeant -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
7	E038020 Nuclear Reactor Theory: part 1 <i>Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90
8	E028700 Thermal Installations <i>Michel De Paepe -- Department of Electromechanical, Systems and Metal Engineering</i>	6			A:1	180
9	E035050 Operational Aspects of Electrical Power Systems <i>Lieven Vandevelde -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90

3.3.2 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>	6			A:J	180
2	E037810 Safety of Electrical and Mechanical Installations [nl] <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
3	E039060 Sustainable Energy and Rational Use of Energy <i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>	4			A:2	120
4	K001339 Sustainability Thinking [nl] <i>Thomas Block -- Department of Political Sciences</i>	5	UKV		A:J	150
5	E078310 Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:1	90
6	E078320 Sustainable Use of Materials: Plastics and Derived Materials [nl] <i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:2	90
7	E078010 Technology and Environment <i>Luc Martens -- Department of Information Technology</i>	3			A:1	90
8	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120
9	E092100 Biosystems [nl] <i>Pascal Verdonck -- Department of Electronics and Information Systems</i>	3			A:1	90
10	E075310 Ethics, Engineering and Society [nl] <i>Seppe Segers -- Department of Philosophy and Moral Sciences</i>	3			A:2	90
11	E075060 Philosophy and Science [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>	3			A:1	90
12	E076320 The Information Society and ICT [nl] <i>Erik Mannens -- Department of Electronics and Information Systems</i>	3			A:1	90
13	A001900 Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i>	3			A:1	90
14	H001977 Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i>	3	UKV		A:J	90

15	A005503	Context and Nuance. A Critical Reflection on Current Topics [nl] <i>Stef Craps -- Department of Literary Studies</i>	6	UKV	A:1	180
16	E076450	Basic Entrepreneurship [nl] <i>Yannick Dillen -- Department of Marketing, Innovation and Organisation</i>	3	UKV	A:1	90
17	E076431	Introduction to Entrepreneurship <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3		A:1	90
18	E076460	Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>	4		A:2	120
19	E076471	Dare to Start <i>Frank Gielen -- Department of Information Technology</i>	3		A:2	90
20	E076621	Principles of Law and Construction Law [nl] <i>Jelle Laverge -- Department of Architecture and Urban Planning</i>	3		A:1	90
21	E076520	Commercial Law [nl] <i>Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i>	3		A:1	90
22	E076951	Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i>	6		A:1	180
23	H002169	Powerful Learning Environments [nl] <i>Bram De Wever -- Department of Educational Studies</i>	6		A:1	180
24	H002196	Classroom Management and Reflection [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	4		A:2	120
25	H002197	The Teacher within School and Society [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	4		A:1	120
26	H002198	Psychology of Adolescence [nl] <i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i>	4		A:1	120
27	F000083	Macroeconomics [nl] <i>Freddy Heylen -- Department of Economics</i>	6		A:1	180
28	H001010	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i>	5		Z:1	150
29	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>	4		C:2	120
30	A003001	Academic English <i>Geert Jacobs -- Department of Linguistics</i>	3	UKV	B:1, A:2	90
31	E075800	Communication [nl] <i>Leen Pollefliet -- Department of Information Technology</i>	3		A:1	90

4 Master's Dissertation 24 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E091103 Master's Dissertation	24		2	B: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 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 2024-2025	f: annually, from 2025-2026	i: annually, from 2026-2027
b: tri-annually	d: bi-annually, from 2024-2025	g: bi-annually, from 2025-2026	j: bi-annually, from 2026-2027
	e: tri-annually, from 2024-2025	h: tri-annually, from 2025-2026	k: tri-annually, from 2026-2027