Study Programme

Academic year 2026-2027

Faculty of Engineering and Architecture

Master of Science in Electrical Engineering -- Communication and Information Technology

Language of instruction: English

Programme version 10

1 General Courses — 36 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E022230	Antennas and Propagation	6		1	A:1	180
		Hendrik Rogier -- Department of Information Technology					
2	E031251	Design Methodology for FPGAs	6		1	A:1	180
		Dirk Stroobandt -- Department of Electronics and Information Systems					
3	E033021	Electromagnetic-aware High Frequency Design	6		1	A:1	180
		Hendrik Rogier -- Department of Information Technology					
4	E033640	High-speed Electronics	6		1	A:2	180
		Johan Bauwelinck -- Department of Information Technology					
5	E003600	Information Theory	6		1	B:2	180
		Heidi Steendam -- Department of Telecommunications and Information Processing					
6	E012130	Modulation and Detection	6		2	B:1	180
		Nele Noels -- Department of Telecommunications and Information Processing					

2 Courses Related to the Main Subject — 48 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E019370	Robotics	6		1	A:1	180
		Tony Belpaeme -- Department of Electronics and Information Systems					
2	E012320	Mobile and Broadband Access Networks	6		1	B:2	180
		Ingrid Moerman -- Department of Information Technology					
3	E033702	Hardware-design Project	6		1	A:2	180
		Ioulia Tzouvadaki -- Department of Electronics and Information Systems					
4	E011322	Queueing Analysis and Simulation	6		2	A:1	180
		Joris Walraevens -- Department of Telecommunications and Information Processing					

2.1 Master's Dissertation

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

3 Elective Courses — 36 credits

Subscribe to 36 credit units from 1 path from the following list. Subject to approval by the faculty.
Divided as:
- 12 credit units in year 1,
- 24 credit units in year 2.

3.1 Elective Courses: Path 1 — 36 credits

Subscribe to 36 credit units from no less than 2 and no more than 3 modules from the following list. Subject to approval by the faculty.

3.1.1 Elective Courses Communication and Information Technology

Subscribe to no less than 16 credit units from the following list. Subject to approval by the faculty.
The Research Internship (E099400) cannot be combined with Industry Internship Engineering and Architecture (E099300).

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E061330	Machine Learning	6			B:1	180
		Joni Dambre -- Department of Electronics and Information Systems					

Nr	Course		CRDT	Ref	MT1	Session	Study
2	E011610	Performance Analysis of Telecommunication Systems	4			A:1	120
		Sabine Wittevrongel -- Department of Telecommunications and Information Processing					
3	E033620	High Frequency Systems	6			A:1	180
		Johan Bauwelinck -- Department of Information Technology					
4	E019170	Internet of Things	6			A:1	180
		Jeroen Hoebeke -- Department of Information Technology					
5	E010310	Image Processing [nl]	6			A:1	180
		Bart Goossens -- Department of Telecommunications and Information Processing					
6	E031440	VLSI Technology and Design	6			A:1	180
		Jan Doutreloigne -- Department of Electronics and Information Systems					
7	E003422	Fundamentals of Statistical Sensor Processing	6			A:1	180
		Hiep Luong -- Department of Telecommunications and Information Processing					
8	E033631	Applied High Frequency Design	6			A:1	180
		Guy Torfs -- Department of Information Technology					
9	E017930	Parallel and Distributed Software Systems	6			A:1	180
		Jan Fostier -- Department of Information Technology					
10	E003710	Game Theory and Multiagent Systems	6			A:1	180
		Heidi Steendam -- Department of Telecommunications and Information Processing					
11	E012802	Broadband cable-TV and in-home networks	4			A:1[a]	120
		Margot Deruyck -- Department of Information Technology					
12	E017920	Design of Multimedia Applications	6			A:2	180
		Glenn Van Wallendael -- Department of Electronics and Information Systems					
13	E030320	Avionics: Electronics	4			A:2	120
		Dries Vande Ginste -- Department of Information Technology					
14	E022020	Audio Engineering	4			A:2	120
		Dick Botteldooren -- Department of Information Technology					
15	E010220	Speech Processing	4			A:2	120
		Kris Demuynck -- Department of Electronics and Information Systems					
16	E004720	Network Modelling and Design	4			B:2	120
		Mario Pickavet -- Department of Information Technology					
17	E004120	Optimisation Techniques	6				180
		Ljubomir Jovanov -- Department of Telecommunications and Information Processing					
18	E031341	Digital Building Blocks [nl]	6			A:2	180
		Jan Doutreloigne -- Department of Electronics and Information Systems					
19	E019130	Multimedia Techniques [nl]	6			A:2	180
		Peter Lambert -- Department of Electronics and Information Systems					
20	E022250	Bioelectromagnetism	4			B:2	120
		Wout Joseph -- Department of Information Technology					
21	E012420	Optical Communication Systems	6			A:2	180
		Geert Morthier -- Department of Information Technology					
22	E030220	Advanced Analog Design	6			A:1	180
		Guy Torfs -- Department of Information Technology					
23	E012210	Advanced Modulation and Coding	4			A:2	120
		Heidi Steendam -- Department of Telecommunications and Information Processing					
24	E034500	Sustainable Computing	3			A:2	90
		Lieven Eeckhout -- Department of Electronics and Information Systems					
25	E099400	Research Internship	6			A:J	180
		Patrick Segers -- Department of Electronics and Information Systems					

3.1.2 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]	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 [nl]	3		A:2	90
		Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering				
5	E039060	Sustainable Energy and Rational Use of Energy	4		A:2	120
		Filip Strubbe -- Department of Electronics and Information Systems				
6	E078310	Sustainable Use of Materials: Metals [nl]	3		A:1	90
		Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering				
7	E078320	Sustainable Use of Materials: Plastics and Derived Materials [nl]	3		A:2	90
		Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering				
8	E078010	Technology and Environment	3		A:1	90
		Luc Martens -- Department of Information Technology				
9	E078752	Water and Air Quality Management	4		A:2	120
		Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering				
10	E092100	Biosystems [nl]	3		A:1	90
		Pascal Verdonck -- Department of Electronics and Information Systems				
11	E075310	Ethics, Engineering and Society [nl]	3		A:2	90
		Seppe Segers -- Department of Philosophy and Moral Sciences				
12	C004009	History and Philosophy of Sciences [nl]	3		B:2	90
		Maarten Van Dyck -- Department of Philosophy and Moral Sciences				
13	E076320	The Information Society and ICT	3			90
		Erik Mannens -- Department of Electronics and Information Systems				
14	A001900	Introduction to Psychology [nl]	3		A:1	90
		Wim Notebaert -- Department of Experimental Psychology				
15	H001977	Coaching and Diversity [nl]	3	UKV	A:J	90
		Elisabeth De Schauwer -- Department of Special Education				
16	A005503	Context and Nuance. A Critical Reflection on Current Topics [nl]	6	UKV	A:1	180
		July De Wilde -- Department of Translation, Interpreting and Communication				
17	F001021	Basic Entrepreneurship [nl]	3	UKV	A:1	90
		Evy Van Lancker -- Department of Marketing, Innovation and Organisation				
18	A005646	Introduction to Business Law [nl]	3		A:1	90
		Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law				
19	F001022	Dare to Venture	4		A:2	120
		Johan Verrue -- Department of Marketing, Innovation and Organisation				
20	E076471	Dare to Start	3		A:2	90
		Wouter Haerick -- Department of Information Technology				
21	E076621	Principles of Law and Construction Law [nl]	3		A:1	90
		Jelle Laverge -- Department of Architecture and Urban Planning				
22	E076951	Engineering Economy	6		A:1	180
		Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design				
23	F001020	Introduction to Entrepreneurship	3		A:1	90
		Petra Andries -- Department of Marketing, Innovation and Organisation				
24	H002476	Powerful Learning Environments [nl]	6		A:1	180
		Bram De Wever -- Department of Educational Studies				
25	H002477	The Teacher within Class, School and Society [nl]	6		A:2	180
		Melissa Tuytens -- Department of Educational Studies				
26	H002478	The Student: Development and Motivation [nl]	6		A:1	180
		Wim Beyers -- Department of Developmental, Personality and Social Psychology				
27	F000083	Macroeconomics [nl]	6		A:1	180
		Freddy Heylen -- Department of Economics				
28	H001010	Introduction Industrial Psychology [nl]	5		C:1	150
		Bart Wille -- Department of Developmental, Personality and Social Psychology				
29	F000551	Business Skills	4		C:2	120
		Mieke Audenaert -- Department of Marketing, Innovation and Organisation				
30	A003001	Academic English	3	UKV	B:1, A:2	90
		Geert Jacobs -- Department of Linguistics				
31	E075800	Communication [nl]	3		A:1	90

Nr	Course		CRDT	Ref	MT1	Session	Study
32	E037830	Basics of Health and Safety at Work for Engineers [nl]	3			A:1	90
		Sofie Van Volsem -- Department of Industrial Systems Engineering and Product Design					

3.1.3 Elective Courses Ghent University

Subscribe to no more than 16 credit units from the programmes of Ghent University, including the <u>Ghent University Elective Courses.</u>
Subject to approval by the faculty.

3.2 Elective Courses: Path 2   36 credits

Subscribe to 36 credit units from 3 modules from the following list. Subject to approval by the faculty.

3.2.1 Elective Courses Communication and Information Technology

Subscribe to no less than 12 credit units from the following list. Subject to approval by the faculty.
The Research Internship (E099400) cannot be combined with Industry Internship Engineering and Architecture (E099300).

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E061330	Machine Learning	6			B:1	180
		Joni Dambre -- Department of Electronics and Information Systems					
2	E011610	Performance Analysis of Telecommunication Systems	4			A:1	120
		Sabine Wittevrongel -- Department of Telecommunications and Information Processing					
3	E033620	High Frequency Systems	6			A:1	180
		Johan Bauwelinck -- Department of Information Technology					
4	E019170	Internet of Things	6			A:1	180
		Jeroen Hoebeke -- Department of Information Technology					
5	E010310	Image Processing [nl]	6			A:1	180
		Bart Goossens -- Department of Telecommunications and Information Processing					
6	E031440	VLSI Technology and Design	6			A:1	180
		Jan Doutreloigne -- Department of Electronics and Information Systems					
7	E003422	Fundamentals of Statistical Sensor Processing	6			A:1	180
		Hiep Luong -- Department of Telecommunications and Information Processing					
8	E033631	Applied High Frequency Design	6			A:1	180
		Guy Torfs -- Department of Information Technology					
9	E017930	Parallel and Distributed Software Systems	6			A:1	180
		Jan Fostier -- Department of Information Technology					
10	E003710	Game Theory and Multiagent Systems	6			A:1	180
		Heidi Steendam -- Department of Telecommunications and Information Processing					
11	E012802	Broadband cable-TV and in-home networks	4			A:1[a]	120
		Margot Deruyck -- Department of Information Technology					
12	E017920	Design of Multimedia Applications	6			A:2	180
		Glenn Van Wallendael -- Department of Electronics and Information Systems					
13	E030320	Avionics: Electronics	4			A:2	120
		Dries Vande Ginste -- Department of Information Technology					
14	E022020	Audio Engineering	4			A:2	120
		Dick Botteldooren -- Department of Information Technology					
15	E010220	Speech Processing	4			A:2	120
		Kris Demuynck -- Department of Electronics and Information Systems					
16	E004720	Network Modelling and Design	4			B:2	120
		Mario Pickavet -- Department of Information Technology					
17	E004120	Optimisation Techniques	6				180
		Ljubomir Jovanov -- Department of Telecommunications and Information Processing					
18	E031341	Digital Building Blocks [nl]	6			A:2	180
		Jan Doutreloigne -- Department of Electronics and Information Systems					
19	E019130	Multimedia Techniques [nl]	6			A:2	180
		Peter Lambert -- Department of Electronics and Information Systems					
20	E022250	Bioelectromagnetism	4			B:2	120
		Wout Joseph -- Department of Information Technology					
21	E012420	Optical Communication Systems	6			A:2	180
		Geert Morthier -- Department of Information Technology					
22	E030220	Advanced Analog Design	6			A:1	180
		Guy Torfs -- Department of Information Technology					
23	E012210	Advanced Modulation and Coding	4			A:2	120
		Heidi Steendam -- Department of Telecommunications and Information Processing					

Nr	Course		CRDT	Ref	MT1	Session	Study
24	E034500	Sustainable Computing	3			A:2	90
		Lieven Eeckhout -- Department of Electronics and Information Systems					
25	E099400	Research Internship	6			A:J	180
		Patrick Segers -- Department of Electronics and Information Systems					

3.2.2 Minors

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

3.2.2.1 Minor Operations Management

Subscribe to 18 credit units from the following list, with 6 credit units with reference a.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E076221	Manufacturing Planning and Control	6	a		A:1	180
		Birger Raa -- Department of Industrial Systems Engineering and Product Design					
2	E004255	Operations Research Models and Methods	6			A:1	180
		El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design					
3	E060240	Quality Engineering and Industrial Statistics	6			A:2	180
		Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design					
4	E076951	Engineering Economy	6			A:1	180
		Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design					

3.2.2.2 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	5	a		A:2	150
		Patrick Segers -- Department of Electronics and Information Systems					
2	E092662	From Genome to Organism	3	a		A:1	90
		Fransiska Malfait -- Department of Biomolecular Medicine					
3	E074011	Quantitative Cell and Tissue Analysis	6	a		A:1	180
		An Hendrix -- Department of Human Structure and Repair					
4	E063671	Biomaterials and Tissue Engineering	5			A:1	150
		Ruslan Dmitriev -- Department of Human Structure and Repair					
5	E063682	Biomechanics	6			A:1	180
		Charlotte Debbaut -- Department of Electronics and Information Systems					
6	E010371	Medical Imaging	6			A:1	180
		Stefaan Vandenberghe -- Department of Electronics and Information Systems					

3.2.2.3 Minor Photonics Engineering

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	E030610	Photonics [nl]	6			A:2	180
		Günther Roelkens -- Department of Information Technology					
2	E030660	Lasers	4			A:1	120
		Geert Morthier -- Department of Information Technology					
3	E030761	Microphotonics	6			A:1	180
		Dries Van Thourhout -- Department of Information Technology					
4	E024800	Optical Materials	6			A:1	180
		Jeroen Beeckman -- Department of Electronics and Information Systems					
5	E008446	Sensors, Actuators and Electronic Microsystems	6			A:2	180
		Herbert De Smet -- Department of Electronics and Information Systems					
6	E030721	Laboratories in Photonics Research	6			A:2	180
		Alberto Curto -- Department of Information Technology					
7	E031521	Physics of Semiconductor Technologies and Devices	4			A:2	120
		Geert Van Steenberge -- Department of Electronics and Information Systems					

3.2.3 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]	6			A:J	180
		Patrick Segers -- Department of Electronics and Information Systems					

#	Code	Course	Credits			
2	E098010	Integrated Portfolio [en, nl] *Hiep Luong -- Department of Telecommunications and Information Processing*	6		A:J	180
3	E098010	Integrated Portfolio [en, nl] *Hiep Luong -- Department of Telecommunications and Information Processing*	3		B:J	90
4	E037810	Safety of Electrical and Mechanical Installations [nl] *Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering*	3		A:2	90
5	E039060	Sustainable Energy and Rational Use of Energy *Filip Strubbe -- Department of Electronics and Information Systems*	4		A:2	120
6	E078310	Sustainable Use of Materials: Metals [nl] *Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering*	3		A:1	90
7	E078320	Sustainable Use of Materials: Plastics and Derived Materials [nl] *Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering*	3		A:2	90
8	E078010	Technology and Environment *Luc Martens -- Department of Information Technology*	3		A:1	90
9	E078752	Water and Air Quality Management *Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering*	4		A:2	120
10	E092100	Biosystems [nl] *Pascal Verdonck -- Department of Electronics and Information Systems*	3		A:1	90
11	E075310	Ethics, Engineering and Society [nl] *Seppe Segers -- Department of Philosophy and Moral Sciences*	3		A:2	90
12	C004009	History and Philosophy of Sciences [nl] *Maarten Van Dyck -- Department of Philosophy and Moral Sciences*	3		B:2	90
13	E076320	The Information Society and ICT *Erik Mannens -- Department of Electronics and Information Systems*	3			90
14	A001900	Introduction to Psychology [nl] *Wim Notebaert -- Department of Experimental Psychology*	3		A:1	90
15	H001977	Coaching and Diversity [nl] *Elisabeth De Schauwer -- Department of Special Education*	3	UKV	A:J	90
16	A005503	Context and Nuance. A Critical Reflection on Current Topics [nl] *July De Wilde -- Department of Translation, Interpreting and Communication*	6	UKV	A:1	180
17	F001021	Basic Entrepreneurship [nl] *Evy Van Lancker -- Department of Marketing, Innovation and Organisation*	3	UKV	A:1	90
18	A005646	Introduction to Business Law [nl] *Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law*	3		A:1	90
19	F001022	Dare to Venture *Johan Verrue -- Department of Marketing, Innovation and Organisation*	4		A:2	120
20	E076471	Dare to Start *Wouter Haerick -- Department of Information Technology*	3		A:2	90
21	E076621	Principles of Law and Construction Law [nl] *Jelle Laverge -- Department of Architecture and Urban Planning*	3		A:1	90
22	E076951	Engineering Economy *Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design*	6		A:1	180
23	F001020	Introduction to Entrepreneurship *Petra Andries -- Department of Marketing, Innovation and Organisation*	3		A:1	90
24	H002476	Powerful Learning Environments [nl] *Bram De Wever -- Department of Educational Studies*	6		A:1	180
25	H002477	The Teacher within Class, School and Society [nl] *Melissa Tuytens -- Department of Educational Studies*	6		A:2	180
26	H002478	The Student: Development and Motivation [nl] *Wim Beyers -- Department of Developmental, Personality and Social Psychology*	6		A:1	180
27	F000083	Macroeconomics [nl] *Freddy Heylen -- Department of Economics*	6		A:1	180
28	H001010	Introduction Industrial Psychology [nl] *Bart Wille -- Department of Developmental, Personality and Social Psychology*	5		C:1	150
29	F000551	Business Skills *Mieke Audenaert -- Department of Marketing, Innovation and Organisation*	4		C:2	120
30	A003001	Academic English *Geert Jacobs -- Department of Linguistics*	3	UKV	B:1, A:2	90

31	E075800	Communication [nl]	3		A:1	90
32	E037830	Basics of Health and Safety at Work for Engineers [nl]	3		A:1	90
		Sofie Van Volsem -- Department of Industrial Systems Engineering and Product Design				

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 2027-2028	f: annually, from 2028-2029	i: annually, from 2029-2030
b: tri-annually	d: bi-annually, from 2027-2028	g: bi-annually, from 2028-2029	j: bi-annually, from 2029-2030
	e: tri-annually, from 2027-2028	h: tri-annually, from 2028-2029	k: tri-annually, from 2029-2030