

Faculty of Engineering and Architecture

Master of Science in Electromechanical Engineering -- Mechanical Construction

Language of instruction: English

Programme version 12

1 General Courses 36 credits

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

2 Courses Related to the Main Subject 36 credits

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|---|------|-----|-----|---------|-------|
| 1 | E043070 Materials Selection in Mechanical Design Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | 1 | B:2 | 180 |
| 2 | E041200 Mechanics of Electromechanical Constructions and Finite Elements Magd Abdel Wahab -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | 1 | A:2 | 180 |
| 3 | E060122 Manufacturing and Total Quality Assurance Wim De Waele -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | | 1 | A:1 | 180 |
| 4 | E032322 Sensor Based Measurement Systems Herbert De Smet -- Department of Electronics and Information Systems Indicative price: € 0 | 3 | | 2 | A:2 | 90 |
| 5 | E042910 Mechanical Material Modelling Wim Van Paepegem -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 20 | 3 | | 2 | A:1 | 90 |
| 6 | E042730 Fracture Mechanics Wim De Waele -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | | 2 | A:1 | 90 |
| 7 | E056600 Construction Techniques Wim De Waele -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | | 2 | B:2 | 90 |

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|---|---------|--|---|---|-----|-----|
| 8 | E061322 | Machine Design Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | 2 | A:1 | 180 |
|---|---------|--|---|---|-----|-----|

3 Elective Courses

24 credits

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

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] Patrick Segers -- Department of Electronics and Information Systems Indicative price: unknown | 6 | | | A:J | 180 |
| 2 | E098010 Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing Indicative price: € 50 | 6 | | | A:J | 180 |
| 3 | E098010 Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing Indicative price: € 50 | 3 | | | B:J | 90 |
| 4 | E037810 Safety of Electrical and Mechanical Installations [nl] Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | | A:2 | 90 |
| 5 | E039060 Sustainable Energy and Rational Use of Energy Jeroen Beeckman -- Department of Electronics and Information Systems Indicative price: € 7 | 4 | | | A:2 | 120 |
| 6 | E078310 Sustainable Use of Materials: Metals [nl] Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 8 | 3 | | | A:1 | 90 |
| 7 | E078320 Sustainable Use of Materials: Plastics and Derived Materials [nl] Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 3 | | | A:2 | 90 |
| 8 | E078010 Technology and Environment Luc Martens -- Department of Information Technology Indicative price: € 0 | 3 | | | A:1 | 90 |
| 9 | E078752 Water and Air Quality Management Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 4 | | | A:2 | 120 |
| 10 | E092100 Biosystems [nl] Pascal Verdonck -- Department of Electronics and Information Systems Indicative price: unknown | 3 | | | A:1 | 90 |
| 11 | E075310 Ethics, Engineering and Society [nl] Seppe Segers -- Department of Philosophy and Moral Sciences Indicative price: unknown | 3 | | | A:2 | 90 |
| 12 | C004009 History and Philosophy of Sciences [nl] Maarten Van Dyck -- Department of Philosophy and Moral Sciences Indicative price: € 0 | 3 | | | A:1 | 90 |
| 13 | E076320 The Information Society and ICT [nl] Erik Mannens -- Department of Electronics and Information Systems Indicative price: unknown | 3 | | | A:2 | 90 |
| 14 | A001900 Introduction to Psychology [nl] Wim Notebaert -- Department of Experimental Psychology Indicative price: unknown | 3 | | | A:1 | 90 |
| 15 | H001977 Coaching and Diversity [nl] Elisabeth De Schauwer -- Department of Special Education | 3 | UKV | | A:J | 90 |

| | | | | | | |
|----|---------|---|---|-----|----------|-----|
| | | Indicative price: € 0 | | | | |
| 16 | A005503 | Context and Nuance. A Critical Reflection on Current Topics [nl] Stef Craps -- Department of Literary Studies Indicative price: € 0 | 6 | UKV | A:1 | 180 |
| 17 | E076450 | Basic Entrepreneurship [nl] Yannick Dillen -- Department of Marketing, Innovation and Organisation Indicative price: unknown | 3 | UKV | A:1 | 90 |
| 18 | A005646 | Introduction to Corporate Law [nl] Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law Indicative price: unknown | 3 | | A:1 | 90 |
| 19 | E076460 | Dare to Venture Johan Verrue -- Department of Marketing, Innovation and Organisation Indicative price: unknown | 4 | | A:2 | 120 |
| 20 | E076471 | Dare to Start Frank Gielen -- Department of Information Technology Indicative price: unknown | 3 | | A:2 | 90 |
| 21 | E076621 | Principles of Law and Construction Law [nl] Jelle Laverge -- Department of Architecture and Urban Planning Indicative price: unknown | 3 | | A:1 | 90 |
| 22 | E076951 | Engineering Economy Sofie Verbrugge -- Department of Information Technology Indicative price: € 60 | 6 | | A:1 | 180 |
| 23 | E076431 | Introduction to Entrepreneurship Petra Andries -- Department of Marketing, Innovation and Organisation Indicative price: € 33 | 3 | | A:1 | 90 |
| 24 | H002169 | Powerful Learning Environments [nl] Bram De Wever -- Department of Educational Studies Indicative price: € 50 | 6 | | A:1 | 180 |
| 25 | H002196 | Classroom Management and Reflection [nl] Melissa Tuytens -- Department of Educational Studies Indicative price: € 50 | 4 | | A:2 | 120 |
| 26 | H002197 | The Teacher within School and Society [nl] Melissa Tuytens -- Department of Educational Studies Indicative price: € 50 | 4 | | A:1 | 120 |
| 27 | H002198 | Psychology of Adolescence [nl] Wim Beyers -- Department of Developmental, Personality and Social Psychology Indicative price: € 51 | 4 | | A:1 | 120 |
| 28 | F000083 | Macroeconomics [nl] Freddy Heylen -- Department of Economics Indicative price: € 65 | 6 | | A:1 | 180 |
| 29 | H001010 | Introduction Industrial Psychology [nl] Bart Wille -- Department of Developmental, Personality and Social Psychology Indicative price: € 45 | 5 | | A:2 | 150 |
| 30 | F000551 | Business Skills Mieke Audenaert -- Department of Marketing, Innovation and Organisation Indicative price: € 46 | 4 | | C:2 | 120 |
| 31 | A003001 | Academic English Geert Jacobs -- Department of Linguistics Indicative price: € 0 | 3 | UKV | B:1, A:2 | 90 |
| 32 | E075800 | Communication [nl] Leen Pollefliet -- Department of Information Technology Indicative price: € 68 | 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 Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering | 3 | | | A:2 | 90 |

| | | | | | |
|----|---------|--|---|--------------------|-----|
| | | Indicative price: € 0 | | | |
| 2 | E045930 | Modelling of Turbulence and Combustion Alexander Snegirev -- Department of Structural Engineering and Building Materials Indicative price: unknown | 3 | A:1 | 90 |
| 3 | E061960 | Aeroplanes Benoît Marinus -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 20 | 3 | A:1 | 90 |
| 4 | E038320 | Nuclear Reactor Technology Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | A:2 ^a | 180 |
| 5 | E038030 | Nuclear Reactor Theory: part 2 Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | A:1 | 90 |
| 6 | E028330 | Thermal-hydraulics and Safety Analysis of Nuclear Systems Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | (A:2) ^d | 180 |
| 7 | E055320 | Ship Behaviour in Shallow and Confined Water Guillaume Delefortrie -- Department of Civil Engineering Indicative price: € 25 | 3 | A:2 | 90 |
| 8 | E040560 | Fluid Mechanics Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | A:1 | 90 |
| 9 | E004160 | Numerical Optimisation Jolan Wauters -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | A:1 | 90 |
| 10 | F000845 | Business Administration [nl] Mirjam Knockaert -- Department of Marketing, Innovation and Organisation Indicative price: € 35 | 4 | A:2 | 120 |
| 11 | F000551 | Business Skills Mieke Audenaert -- Department of Marketing, Innovation and Organisation Indicative price: € 46 | 4 | C:2 | 120 |
| 12 | E051610 | Passive Fire Protection Emmanuel Annerel -- Department of Structural Engineering and Building Materials Indicative price: unknown | 3 | A:1 | 90 |
| 13 | E051540 | Explosions and Industrial Fire Safety Filip Verplaetsen -- Department of Structural Engineering and Building Materials Indicative price: unknown | 6 | A:1 | 180 |
| 14 | B001375 | Energy Law [nl] Frederik Vandendriessche -- Department of European, Public and International Law Indicative price: € 45 | 4 | A:2 | 120 |
| 15 | E053642 | Railway Technology Fundamentals Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 5 | 3 | A:1 | 90 |
| 16 | E053643 | Advanced Railway Technology Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 5 | 3 | A:2 | 90 |
| 17 | E053620 | Railroads [nl] Jan Mys -- Department of Civil Engineering Indicative price: unknown | 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 Birger Raa -- Department of Industrial Systems Engineering and Product Design Indicative price: € 0 | 6 | a | | A:1 | 180 |
| 2 | E004255 Operations Research Models and Methods El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design Indicative price: € 0 | 6 | | | A:1 | 180 |
| 3 | E060240 Quality Engineering and Industrial Statistics Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design Indicative price: € 50 | 6 | | | A:2 | 180 |
| 4 | E076951 Engineering Economy Sofie Verbrugge -- Department of Information Technology Indicative price: € 60 | 6 | | | A:1 | 180 |

3.2.2 Minor Environment and Sustainable Development

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | C002275 Environmental Law [nl] Hendrik Schoukens -- Department of European, Public and International Law Indicative price: € 0 | 5 | | | A:1 | 125 |
| 2 | I002700 Clean Technology Sophie Huysveld -- Department of Green Chemistry and Technology Indicative price: unknown | 5 | | | A:1 | 150 |
| 3 | E065460 Rational Use of Materials Tom Depover -- Department of Materials, Textiles and Chemical Engineering Indicative price: unknown | 5 | | | A:1 | 150 |
| 4 | E078752 Water and Air Quality Management Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 4 | | | A:2 | 120 |
| 5 | E039060 Sustainable Energy and Rational Use of Energy Jeroen Beeckman -- Department of Electronics and Information Systems Indicative price: € 7 | 4 | | | A:2 | 120 |
| 6 | E078061 Introduction to Environmental Risk Assessment Karel De Schampelaere -- Department of Animal Sciences and Aquatic Ecology Indicative price: € 0 | 3 | | | A:1 | 90 |
| 7 | I002606 Environmental Risk Assessment Karel De Schampelaere -- Department of Animal Sciences and Aquatic Ecology Indicative price: € 0 | 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 Patrick Segers -- Department of Electronics and Information Systems Indicative price: € 80 | 5 | a | | A:2 | 150 |
| 2 | E092662 From Genome to Organism Fransiska Malfait -- Department of Biomolecular Medicine Indicative price: unknown | 3 | a | | A:1 | 90 |
| 3 | E074011 Quantitative Cell and Tissue Analysis Andre Skirtach -- Department of Biotechnology Indicative price: unknown | 6 | a | | A:1 | 180 |
| 4 | E063671 Biomaterials and Tissue Engineering Peter Dubrueel -- Department of Organic Chemistry Indicative price: unknown | 5 | | | A:1 | 150 |
| 5 | E063682 Biomechanics Charlotte Debbaut -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:1 | 180 |
| 6 | E010371 Medical Imaging Stefaan Vandenberghe -- Department of Electronics and Information Systems Indicative price: unknown | 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 Birger Raa -- Department of Industrial Systems Engineering and Product Design Indicative price: € 0 | 6 | a | | A:1 | 180 |
| 2 | E076380 Methods Engineering and Work Measurement Dieter Claeys -- Department of Industrial Systems Engineering and Product Design Indicative price: € 50 | 6 | a | | A:2 | 180 |
| 3 | E060240 Quality Engineering and Industrial Statistics Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design Indicative price: € 50 | 6 | a | | A:2 | 180 |
| 4 | E066662 Environmentally Assisted Degradation of Materials Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 10 | 6 | b | | A:2 | 180 |
| 5 | E066270 Metal Processing and Technology Tuan Nguyen Minh -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | b | | A:2 | 180 |
| 6 | E900069 Composites Wim Van Paepegem -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 20 | 6 | b | | A:1 | 180 |
| 7 | E043070 Materials Selection in Mechanical Design Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | b | | B:2 | 180 |
| 8 | E061322 Machine Design Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | c | | A:1 | 180 |
| 9 | E037121 Displacement Pumps, Compressors and IC Engine Fundamentals Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | c | | A:1 | 180 |
| 10 | E037221 IC Engines: advanced design and research Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | c | | A:2 | 90 |
| 11 | E061621 Automotive Technology Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | c | | A:2 | 90 |
| 12 | E007920 Computer Control of Industrial Processes Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | c | | A:1 | 180 |
| 13 | E008420 Servo Systems and Industrial Robots Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | c | | A:1 | 90 |
| 14 | E030520 Power Electronics Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 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 Birger Raa -- Department of Industrial Systems Engineering and Product Design Indicative price: € 0 | 6 | a | | A:1 | 180 |
| 2 | E004255 Operations Research Models and Methods El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design Indicative price: € 0 | 6 | | | A:1 | 180 |

| | | | | | | | |
|---|---------|--|---|--|--|-----|-----|
| 3 | E060240 | Quality Engineering and Industrial Statistics Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design Indicative price: € 50 | 6 | | | A:2 | 180 |
| 4 | E076951 | Engineering Economy Sofie Verbrugge -- Department of Information Technology Indicative price: € 60 | 6 | | | A:1 | 180 |

3.3.1.2 Minor Biosystems

Subscribe to no less than 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 Patrick Segers -- Department of Electronics and Information Systems Indicative price: € 80 | 5 | a | | A:2 | 150 |
| 2 | E092662 | From Genome to Organism Fransiska Malfait -- Department of Biomolecular Medicine Indicative price: unknown | 3 | a | | A:1 | 90 |
| 3 | E074011 | Quantitative Cell and Tissue Analysis Andre Skirtach -- Department of Biotechnology Indicative price: unknown | 6 | a | | A:1 | 180 |
| 4 | E063671 | Biomaterials and Tissue Engineering Peter Dubrueel -- Department of Organic Chemistry Indicative price: unknown | 5 | | | A:1 | 150 |
| 5 | E063682 | Biomechanics Charlotte Debbaut -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:1 | 180 |
| 6 | E010371 | Medical Imaging Stefaan Vandenberghe -- Department of Electronics and Information Systems Indicative price: unknown | 6 | | | A:1 | 180 |

3.3.1.3 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 Lieven Eeckhout -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:1 | 180 |
| 2 | E017930 | Parallel and Distributed Software Systems Filip De Turck -- Department of Information Technology Indicative price: unknown | 6 | | | A:1 | 180 |
| 3 | E017920 | Design of Multimedia Applications Glenn Van Wallendael -- Department of Electronics and Information Systems Indicative price: € 123 | 6 | | | A:2 | 180 |
| 4 | E012320 | Mobile and Broadband Access Networks Mario Pickavet -- Department of Information Technology Indicative price: € 30 | 6 | | | B:2 | 180 |
| 5 | E003600 | Information Theory Heidi Steendam -- Department of Telecommunications and Information Processing Indicative price: € 13 | 6 | | | B:2 | 180 |
| 6 | E011322 | Queueing Analysis and Simulation Joris Walraevens -- Department of Telecommunications and Information Processing Indicative price: € 10 | 6 | | | A:1 | 180 |

3.3.1.4 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 Hendrik Rogier -- Department of Information Technology Indicative price: € 10 | 6 | | | A:1 | 180 |
| 2 | E033021 | Electromagnetic-aware High Frequency Design Hendrik Rogier -- Department of Information Technology Indicative price: € 10 | 6 | | | A:1 | 180 |

| | | | | | | | |
|---|---------|---|---|--|--|-----|-----|
| 3 | E012130 | Modulation and Detection Nele Noels -- Department of Telecommunications and Information Processing Indicative price: € 10 | 6 | | | B:1 | 180 |
| 4 | E003600 | Information Theory Heidi Steendam -- Department of Telecommunications and Information Processing Indicative price: € 13 | 6 | | | B:2 | 180 |
| 5 | E031251 | Design Methodology for FPGAs Dirk Stroobandt -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:1 | 180 |
| 6 | E033640 | High-speed Electronics Johan Bauwelinck -- Department of Information Technology Indicative price: € 15 | 6 | | | A:2 | 180 |

3.3.1.5 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 Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | | B:1 | 180 |
| 2 | E068900 | Structure and Dynamics of Polymers Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 6 | | | B:1 | 180 |
| 3 | E064961 | Polymer Processing and Circularity Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 6 | | | A:2 | 180 |
| 4 | E065340 | Micro-analysis and Structure Determination in Materials Science Roumen Petrov -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | | A:1 | 180 |
| 5 | E066662 | Environmentally Assisted Degradation of Materials Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 10 | 6 | | | A:2 | 180 |
| 6 | E066020 | Microstructure of Materials [nl] Marcel Sluiter -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | | A:2 | 180 |
| 7 | E064761 | Textile Functionalization Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 6 | | | A:2 | 180 |
| 8 | E069041 | Bio-based and Synthetic Fibres Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 6 | | | A:1 | 180 |

3.3.1.6 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 Paul Van Steenberghe -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 6 | | | B:1 | 180 |
| 2 | E071200 | Unit Operations in Chemical Industry Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering Indicative price: unknown | 6 | | | B:1 | 180 |
| 3 | E045910 | Heat Engineering and Mass Transport [nl] Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering Indicative price: unknown | 6 | | | A:1 | 180 |
| 4 | E073760 | Chemical Process Design Georgios Bellos -- Department of Materials, Textiles and Chemical Engineering Indicative price: unknown | 6 | | | B:2 | 180 |
| 5 | E007920 | Computer Control of Industrial Processes Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | | | A:1 | 180 |
| 6 | E071131 | Sustainable Chemical Production Processes Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering | 6 | | | A:1 | 180 |

[Indicative price: unknown](#)

7 E071181 Chemistry of Industrial Processes 6 B:2 180
Maarten Sabbe -- Department of Materials, Textiles and Chemical Engineering

[Indicative price: € 0](#)

3.3.1.7 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] Henk Vrielinck -- Department of Solid State Sciences Indicative price: € 8 | 6 | | | A:1 | 180 |
| 2 | E024641 Physics of Semiconductor Devices Benoit Bakeroot -- Department of Electronics and Information Systems Indicative price: € 10 | 6 | | | B:2 | 180 |
| 3 | E065340 Micro-analysis and Structure Determination in Materials Science Roumen Petrov -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | | A:1 | 180 |
| 4 | E026221 Plasma Physics Geert Verdoolaege -- Department of Applied Physics Indicative price: € 0 | 6 | | | A:1 | 180 |
| 5 | E029040 Physical Chemistry Iwan Moreels -- Department of Chemistry Indicative price: € 0 | 6 | | | B:2 | 180 |
| 6 | E025010 Atomic and Molecular Physics Veronique Van Speybroeck -- Department of Applied Physics Indicative price: € 10 | 6 | | | A:1 | 180 |

3.3.1.8 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 Jan Mertens -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | | A:1 | 90 |
| 2 | E037621 Gas Turbines Ward De Paepe -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | | A:1 | 90 |
| 3 | E037121 Displacement Pumps, Compressors and IC Engine Fundamentals Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | | | A:1 | 180 |
| 4 | E039060 Sustainable Energy and Rational Use of Energy Jeroen Beeckman -- Department of Electronics and Information Systems Indicative price: € 7 | 4 | | | A:2 | 120 |
| 5 | E037820 Technology of Electrical Installations Peter Sergeant -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 90 | 3 | | | A:2 | 90 |
| 6 | E038020 Nuclear Reactor Theory: part 1 Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | | A:1 | 90 |
| 7 | E028700 Thermal Installations Michel De Paepe -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 50 | 6 | | | A:1 | 180 |
| 8 | E035050 Operational Aspects of Electrical Power Systems Lieven Vandeveldel -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | | | A:2 | 90 |

3.3.1.9 Minor Control Engineering and Automation

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

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | E005220 Linear Systems Gert De Cooman -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:2 | 180 |

| | | | | | | | |
|---|---------|--|---|--|--|-----|-----|
| 2 | E004021 | Nonlinear Systems Jasper De Bock -- Department of Electronics and Information Systems Indicative price: € 65 | 6 | | | B:1 | 180 |
| 3 | E019331 | ICT and Mechatronics Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 6 | | | A:2 | 180 |
| 4 | E008420 | Servo Systems and Industrial Robots Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 3 | | | A:1 | 90 |
| 5 | E007920 | Computer Control of Industrial Processes Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | | | A:1 | 180 |
| 6 | E030520 | Power Electronics Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | | A:2 | 90 |
| 7 | E005722 | Modelling and Simulation of Dynamical Systems Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering Indicative price: € 0 | 6 | | | A:2 | 180 |

3.3.1.10 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] Günther Roelkens -- Department of Information Technology Indicative price: € 0 | 6 | | | A:2 | 180 |
| 2 | E030660 Lasers Geert Morthier -- Department of Information Technology Indicative price: € 10 | 4 | | | A:1 | 120 |
| 3 | E030761 Microphotonics Dries Van Thourhout -- Department of Information Technology Indicative price: € 10 | 6 | | | A:1 | 180 |
| 4 | E024800 Optical Materials Jeroen Beeckman -- Department of Electronics and Information Systems Indicative price: € 7 | 6 | | | A:1 | 180 |
| 5 | E008446 Sensors, Actuators and Electronic Microsystems Herbert De Smet -- Department of Electronics and Information Systems Indicative price: € 0 | 6 | | | A:2 | 180 |
| 6 | E030721 Laboratories in Photonics Research Alberto Curto -- Department of Information Technology Indicative price: € 0 | 6 | | | A:2 | 180 |
| 7 | E031521 Physics of Semiconductor Technologies and Devices Geert Van Steenberge -- Department of Electronics and Information Systems Indicative price: unknown | 4 | | | A:2 | 120 |

3.3.1.11

[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] Hendrik Schoukens -- Department of European, Public and International Law Indicative price: € 0 | 5 | | | A:1 | 125 |
| 2 | I002700 Clean Technology Sophie Huysveld -- Department of Green Chemistry and Technology Indicative price: unknown | 5 | | | A:1 | 150 |
| 3 | E065460 Rational Use of Materials Tom Depover -- Department of Materials, Textiles and Chemical Engineering Indicative price: unknown | 5 | | | A:1 | 150 |
| 4 | E078752 Water and Air Quality Management Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 4 | | | A:2 | 120 |
| 5 | E039060 Sustainable Energy and Rational Use of Energy Jeroen Beeckman -- Department of Electronics and Information Systems | 4 | | | A:2 | 120 |

[Indicative price: € 7](#)

| | | | | | | |
|---|---------|---|---|--|-----|-----|
| 6 | E078061 | Introduction to Environmental Risk Assessment Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology Indicative price: € 0 | 3 | | A:1 | 90 |
| 7 | I002606 | Environmental Risk Assessment Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology Indicative price: € 0 | 5 | | A:1 | 150 |

3.3.2 Elective Social Courses

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] Patrick Segers -- Department of Electronics and Information Systems Indicative price: unknown | 6 | | A:J | 180 |
| 2 | E098010 | Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing Indicative price: € 50 | 6 | | A:J | 180 |
| 3 | E098010 | Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing Indicative price: € 50 | 3 | | B:J | 90 |
| 4 | E037810 | Safety of Electrical and Mechanical Installations [nl] Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering Indicative price: unknown | 3 | | A:2 | 90 |
| 5 | E039060 | Sustainable Energy and Rational Use of Energy Jeroen Beeckman -- Department of Electronics and Information Systems Indicative price: € 7 | 4 | | A:2 | 120 |
| 6 | E078310 | Sustainable Use of Materials: Metals [nl] Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 8 | 3 | | A:1 | 90 |
| 7 | E078320 | Sustainable Use of Materials: Plastics and Derived Materials [nl] Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 3 | | A:2 | 90 |
| 8 | E078010 | Technology and Environment Luc Martens -- Department of Information Technology Indicative price: € 0 | 3 | | A:1 | 90 |
| 9 | E078752 | Water and Air Quality Management Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering Indicative price: € 0 | 4 | | A:2 | 120 |
| 10 | E092100 | Biosystems [nl] Pascal Verdonck -- Department of Electronics and Information Systems Indicative price: unknown | 3 | | A:1 | 90 |
| 11 | E075310 | Ethics, Engineering and Society [nl] Seppe Segers -- Department of Philosophy and Moral Sciences Indicative price: unknown | 3 | | A:2 | 90 |
| 12 | C004009 | History and Philosophy of Sciences [nl] Maarten Van Dyck -- Department of Philosophy and Moral Sciences Indicative price: € 0 | 3 | | A:1 | 90 |
| 13 | E076320 | The Information Society and ICT [nl] Erik Mannens -- Department of Electronics and Information Systems Indicative price: unknown | 3 | | A:2 | 90 |
| 14 | A001900 | Introduction to Psychology [nl] Wim Notebaert -- Department of Experimental Psychology Indicative price: unknown | 3 | | A:1 | 90 |
| 15 | H001977 | Coaching and Diversity [nl] Elisabeth De Schauwer -- Department of Special Education Indicative price: € 0 | 3 | UKV | A:J | 90 |
| 16 | A005503 | Context and Nuance. A Critical Reflection on Current Topics [nl] Stef Craps -- Department of Literary Studies | 6 | UKV | A:1 | 180 |

| | | | | | | |
|----|---------|---|---|-----|----------|-----|
| | | Indicative price: € 0 | | | | |
| 17 | E076450 | Basic Entrepreneurship [nl] Yannick Dillen -- Department of Marketing, Innovation and Organisation Indicative price: unknown | 3 | UKV | A:1 | 90 |
| 18 | A005646 | Introduction to Corporate Law [nl] Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law Indicative price: unknown | 3 | | A:1 | 90 |
| 19 | E076460 | Dare to Venture Johan Verrue -- Department of Marketing, Innovation and Organisation Indicative price: unknown | 4 | | A:2 | 120 |
| 20 | E076471 | Dare to Start Frank Gielen -- Department of Information Technology Indicative price: unknown | 3 | | A:2 | 90 |
| 21 | E076621 | Principles of Law and Construction Law [nl] Jelle Laverge -- Department of Architecture and Urban Planning Indicative price: unknown | 3 | | A:1 | 90 |
| 22 | E076951 | Engineering Economy Sofie Verbrugge -- Department of Information Technology Indicative price: € 60 | 6 | | A:1 | 180 |
| 23 | E076431 | Introduction to Entrepreneurship Petra Andries -- Department of Marketing, Innovation and Organisation Indicative price: € 33 | 3 | | A:1 | 90 |
| 24 | H002169 | Powerful Learning Environments [nl] Bram De Wever -- Department of Educational Studies Indicative price: € 50 | 6 | | A:1 | 180 |
| 25 | H002196 | Classroom Management and Reflection [nl] Melissa Tuytens -- Department of Educational Studies Indicative price: € 50 | 4 | | A:2 | 120 |
| 26 | H002197 | The Teacher within School and Society [nl] Melissa Tuytens -- Department of Educational Studies Indicative price: € 50 | 4 | | A:1 | 120 |
| 27 | H002198 | Psychology of Adolescence [nl] Wim Beyers -- Department of Developmental, Personality and Social Psychology Indicative price: € 51 | 4 | | A:1 | 120 |
| 28 | F000083 | Macroeconomics [nl] Freddy Heylen -- Department of Economics Indicative price: € 65 | 6 | | A:1 | 180 |
| 29 | H001010 | Introduction Industrial Psychology [nl] Bart Wille -- Department of Developmental, Personality and Social Psychology Indicative price: € 45 | 5 | | A:2 | 150 |
| 30 | F000551 | Business Skills Mieke Audenaert -- Department of Marketing, Innovation and Organisation Indicative price: € 46 | 4 | | C:2 | 120 |
| 31 | A003001 | Academic English Geert Jacobs -- Department of Linguistics Indicative price: € 0 | 3 | UKV | B:1, A:2 | 90 |
| 32 | E075800 | Communication [nl] Leen Pollefliet -- Department of Information Technology Indicative price: € 68 | 3 | | A:1 | 90 |

4 Master's Dissertation

24 credits

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | E091103 Master's Dissertation Indicative price: unknown | 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.