GHENT UNIVERSITY

# Study Programme

Academic year 2026-2027

Faculty of Engineering and Architecture

Master of Science in Electromechanical Engineering -- Maritime Engineering

Language of instruction: English

Programme version 12

## 1 General Courses 36 credits

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

## 2 Courses Related to the Main Subject 36 credits

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|---|---|---|---|---|---|---|---|
| 1 | E055080 | Ship Resistance and Propulsion<br>*Guillaume Delefortrie -- Department of Civil Engineering* | 6 | | 1 | A:2 | 180 |
| 2 | E055070 | Ship and Marine Structures<br>*Philippe Rigo -- Department of Civil Engineering* | 6 | | 1 | A:2 | 180 |
| 3 | E055020 | Marine Hydrostatics and Stability<br>*Evert Lataire -- Department of Civil Engineering* | 6 | | 1 | A:1 | 180 |
| 4 | E044311 | Structural Stability<br>*Robby Caspeele -- Department of Structural Engineering and Building Materials* | 6 | | 2 | A:1 | 180 |
| 5 | E056600 | Construction Techniques<br>*Wim De Waele -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | 2 | B:2 | 90 |
| 6 | E055060 | Ship Manoeuvring and Seakeeping Behaviour of Floating Structures<br>*Guillaume Delefortrie -- Department of Civil Engineering* | 6 | | 2 | A:1 | 180 |
| 7 | E054670 | Design of Maritime Structures<br>*Evert Lataire -- Department of Civil Engineering* | 3 | | 2 | B:1 | 90 |

## 3 Elective Courses 24 credits

Subscribe to 24 credit units from 1 elective path from the following list. Subject to approval by the faculty.
- 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]<br>*Patrick Segers -- Department of Electronics and Information Systems* | 6 | | A:J | 180 |
| 2 | E098010 | Integrated Portfolio [en, nl]<br>*Hiep Luong -- Department of Telecommunications and Information Processing* | 6 | | A:J | 180 |
| 3 | E098010 | Integrated Portfolio [en, nl]<br>*Hiep Luong -- Department of Telecommunications and Information Processing* | 3 | | B:J | 90 |
| 4 | E037810 | Safety of Electrical and Mechanical Installations [nl]<br>*Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | A:2 | 90 |
| 5 | E039060 | Sustainable Energy and Rational Use of Energy<br>*Filip Strubbe -- Department of Electronics and Information Systems* | 4 | | A:2 | 120 |
| 6 | E078310 | Sustainable Use of Materials: Metals [nl]<br>*Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering* | 3 | | A:1 | 90 |
| 7 | E078320 | Sustainable Use of Materials: Plastics and Derived Materials [nl]<br>*Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering* | 3 | | A:2 | 90 |
| 8 | E078010 | Technology and Environment<br>*Luc Martens -- Department of Information Technology* | 3 | | A:1 | 90 |
| 9 | E078752 | Water and Air Quality Management<br>*Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering* | 4 | | A:2 | 120 |
| 10 | E092100 | Biosystems [nl]<br>*Pascal Verdonck -- Department of Electronics and Information Systems* | 3 | | A:1 | 90 |
| 11 | E075310 | Ethics, Engineering and Society [nl]<br>*Seppe Segers -- Department of Philosophy and Moral Sciences* | 3 | | A:2 | 90 |
| 12 | C004009 | History and Philosophy of Sciences<br>*Maarten Van Dyck -- Department of Philosophy and Moral Sciences* | 3 | | | 90 |
| 13 | E076320 | The Information Society and ICT [nl]<br>*Erik Mannens -- Department of Electronics and Information Systems* | 3 | | A:2 | 90 |
| 14 | A001900 | Introduction to Psychology [nl]<br>*Wim Notebaert -- Department of Experimental Psychology* | 3 | | A:1 | 90 |
| 15 | H001977 | Coaching and Diversity [nl]<br>*Elisabeth De Schauwer -- Department of Special Education* | 3 | UKV | A:J | 90 |
| 16 | A005503 | Context and Nuance. A Critical Reflection on Current Topics [nl]<br>*July De Wilde -- Department of Translation, Interpreting and Communication* | 6 | UKV | A:1 | 180 |
| 17 | E076450 | Basic Entrepreneurship | 3 | UKV | | 90 |
| 18 | A005646 | Introduction to Business Law [nl]<br>*Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law* | 3 | | A:1 | 90 |
| 19 | E076460 | Dare to Venture | 4 | | | 120 |
| 20 | E076471 | Dare to Start<br>*Wouter Haerick -- Department of Information Technology* | 3 | | A:2 | 90 |
| 21 | E076621 | Principles of Law and Construction Law [nl]<br>*Jelle Laverge -- Department of Architecture and Urban Planning* | 3 | | A:1 | 90 |
| 22 | E076951 | Engineering Economy<br>*Sofie Verbrugge -- Department of Information Technology* | 6 | | A:1 | 180 |
| 23 | E076431 | Introduction to Entrepreneurship | 3 | | | 90 |
| 24 | H002169 | Powerful Learning Environments [nl]<br>*Bram De Wever -- Department of Educational Studies* | 6 | | A:1 | 180 |
| 25 | H002196 | Classroom Management and Reflection [nl]<br>*Tijs Rotsaert -- Department of Educational Studies* | 4 | | A:2 | 120 |
| 26 | H002197 | The Teacher within School and Society [nl]<br>*Melissa Tuytens -- Department of Educational Studies* | 4 | | A:1 | 120 |
| 27 | H002198 | Psychology of Adolescence [nl]<br>*Wim Beyers -- Department of Developmental, Personality and Social Psychology* | 4 | | A:1 | 120 |
| 28 | F000083 | Macroeconomics [nl]<br>*Freddy Heylen -- Department of Economics* | 6 | | A:1 | 180 |
| 29 | H001010 | Introduction Industrial Psychology [nl]<br>*Bart Wille -- Department of Developmental, Personality and Social Psychology* | 5 | | C:1 | 150 |
| 30 | F000551 | Business Skills<br>*Mieke Audenaert -- Department of Marketing, Innovation and Organisation* | 4 | | C:2 | 120 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 31 | A003001 | Academic English<br>*Geert Jacobs -- Department of Linguistics* | 3 | UKV | | B:1, A:2 | 90 |
| 32 | E075800 | Communication [nl]<br>*Leen Pollefliet -- Department of Information Technology* | 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<br>*Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 2 | E045930 | Modelling of Turbulence and Combustion<br>*Bart Merci -- Department of Structural Engineering and Building Materials* | 3 | | | A:1 | 90 |
| 3 | E061960 | Aeroplanes<br>*Benoît Marinus -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 4 | E038320 | Nuclear Reactor Technology<br>*Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | A:2[a] | 180 |
| 5 | E038030 | Nuclear Reactor Theory: part 2<br>*Matthias Vanderhaegen -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:1 | 90 |
| 6 | E028330 | Thermal-hydraulics and Safety Analysis of Nuclear Systems<br>*Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | (A:2)[d] | 180 |
| 7 | E055320 | Ship Behaviour in Shallow and Confined Water<br>*Guillaume Delefortrie -- Department of Civil Engineering* | 3 | | | A:2 | 90 |
| 8 | E040560 | Fluid Mechanics<br>*Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:1 | 90 |
| 9 | E004160 | Numerical Optimisation | 3 | | | | 90 |
| 10 | F000845 | Business Administration [nl]<br>*Mirjam Knockaert -- Department of Marketing, Innovation and Organisation* | 4 | | | A:2 | 120 |
| 11 | F000551 | Business Skills<br>*Mieke Audenaert -- Department of Marketing, Innovation and Organisation* | 4 | | | C:2 | 120 |
| 12 | E051610 | Passive Fire Protection<br>*Emmanuel Annerel -- Department of Structural Engineering and Building Materials* | 3 | | | A:1 | 90 |
| 13 | E051540 | Explosions and Industrial Fire Safety<br>*Filip Verplaetsen -- Department of Structural Engineering and Building Materials* | 6 | | | A:1 | 180 |
| 14 | B001375 | Energy Law [nl]<br>*Frederik Vandendriessche -- Department of European, Public and International Law* | 4 | | | A:2 | 120 |
| 15 | E053642 | Railway Technology Fundamentals<br>*Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 16 | E053643 | Advanced Railway Technology<br>*Hendrik Bonne -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 17 | E053620 | Railroads [nl]<br>*Jan Mys -- Department of Civil Engineering* | 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<br>*Birger Raa -- Department of Industrial Systems Engineering and Product Design* | 6 | a | | A:1 | 180 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | E004255 | Operations Research Models and Methods<br>*El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design* | 6 | | | A:1 | 180 |
| 3 | E060240 | Quality Engineering and Industrial Statistics<br>*Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design* | 6 | | | A:2 | 180 |
| 4 | E076951 | Engineering Economy<br>*Sofie Verbrugge -- Department of Information Technology* | 6 | | | A:1 | 180 |

### 3.2.2 Minor Environment and Sustainable Development

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|---|---|---|---|---|---|---|---|
| 1 | C002275 | Environmental Law [nl]<br>*Hendrik Schoukens -- Department of European, Public and International Law* | 5 | | | A:1 | 125 |
| 2 | I002700 | Clean Technology | 5 | | | | 150 |
| 3 | E065460 | Rational Use of Materials<br>*Tom Depover -- Department of Materials, Textiles and Chemical Engineering* | 5 | | | A:1 | 150 |
| 4 | E078752 | Water and Air Quality Management<br>*Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering* | 4 | | | A:2 | 120 |
| 5 | E039060 | Sustainable Energy and Rational Use of Energy<br>*Filip Strubbe -- Department of Electronics and Information Systems* | 4 | | | A:2 | 120 |
| 6 | E078061 | Introduction to Environmental Risk Assessment<br>*Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology* | 3 | | | A:1 | 90 |
| 7 | I002606 | Environmental Risk Assessment<br>*Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology* | 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<br>*Patrick Segers -- Department of Electronics and Information Systems* | 5 | a | | A:2 | 150 |
| 2 | E092662 | From Genome to Organism<br>*Fransiska Malfait -- Department of Biomolecular Medicine* | 3 | a | | A:1 | 90 |
| 3 | E074011 | Quantitative Cell and Tissue Analysis<br>*An Hendrix -- Department of Human Structure and Repair* | 6 | a | | A:1 | 180 |
| 4 | E063671 | Biomaterials and Tissue Engineering<br>*Ruslan Dmitriev -- Department of Human Structure and Repair* | 5 | | | A:1 | 150 |
| 5 | E063682 | Biomechanics<br>*Charlotte Debbaut -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 6 | E010371 | Medical Imaging<br>*Stefaan Vandenberghe -- Department of Electronics and Information Systems* | 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<br>*Birger Raa -- Department of Industrial Systems Engineering and Product Design* | 6 | a | | A:1 | 180 |
| 2 | E076380 | Methods Engineering and Work Measurement<br>*Dieter Claeys -- Department of Industrial Systems Engineering and Product Design* | 6 | a | | A:2 | 180 |
| 3 | E060240 | Quality Engineering and Industrial Statistics<br>*Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design* | 6 | a | | A:2 | 180 |
| 4 | E066662 | Environmentally Assisted Degradation of Materials<br>*Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering* | 6 | b | | A:2 | 180 |
| 5 | E066270 | Metal Processing and Technology<br>*Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering* | 6 | b | | A:2 | 180 |
| 6 | E900069 | Composites<br>*Wim Van Paepegem -- Department of Materials, Textiles and Chemical Engineering* | 6 | b | | A:1 | 180 |
| 7 | E043070 | Materials Selection in Mechanical Design | 6 | b | | | 180 |
| 8 | E061322 | Machine Design<br>*Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering* | 6 | c | | A:1 | 180 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | E037121 | Displacement Pumps, Compressors and IC Engine Fundamentals | 6 | c | | | 180 |
| 10 | E037221 | IC Engines: advanced design and research<br>*Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering* | 3 | c | | A:2 | 90 |
| 11 | E061621 | Automotive Technology<br>*Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering* | 3 | c | | A:2 | 90 |
| 12 | E007920 | Computer Control of Industrial Processes | 6 | c | | | 180 |
| 13 | E008420 | Servo Systems and Industrial Robots<br>*Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering* | 3 | c | | A:1 | 90 |
| 14 | E030520 | Power Electronics<br>*Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering* | 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<br>*Birger Raa -- Department of Industrial Systems Engineering and Product Design* | 6 | a | | A:1 | 180 |
| 2 | E004255 | Operations Research Models and Methods<br>*El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design* | 6 | | | A:1 | 180 |
| 3 | E060240 | Quality Engineering and Industrial Statistics<br>*Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design* | 6 | | | A:2 | 180 |
| 4 | E076951 | Engineering Economy<br>*Sofie Verbrugge -- Department of Information Technology* | 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<br>*Patrick Segers -- Department of Electronics and Information Systems* | 5 | a | | A:2 | 150 |
| 2 | E092662 | From Genome to Organism<br>*Fransiska Malfait -- Department of Biomolecular Medicine* | 3 | a | | A:1 | 90 |
| 3 | E074011 | Quantitative Cell and Tissue Analysis<br>*An Hendrix -- Department of Human Structure and Repair* | 6 | a | | A:1 | 180 |
| 4 | E063671 | Biomaterials and Tissue Engineering<br>*Ruslan Dmitriev -- Department of Human Structure and Repair* | 5 | | | A:1 | 150 |
| 5 | E063682 | Biomechanics<br>*Charlotte Debbaut -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 6 | E010371 | Medical Imaging<br>*Stefaan Vandenberghe -- Department of Electronics and Information Systems* | 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<br>*Lieven Eeckhout -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 2 | E017930 | Parallel and Distributed Software Systems<br>*Jan Fostier -- Department of Information Technology* | 6 | | | A:1 | 180 |
| 3 | E017920 | Design of Multimedia Applications<br>*Glenn Van Wallendael -- Department of Electronics and Information Systems* | 6 | | | A:2 | 180 |
| 4 | E012320 | Mobile and Broadband Access Networks<br>*Ingrid Moerman -- Department of Information Technology* | 6 | | | B:2 | 180 |
| 5 | E003600 | Information Theory<br>*Heidi Steendam -- Department of Telecommunications and Information Processing* | 6 | | | B:2 | 180 |
| 6 | E011322 | Queueing Analysis and Simulation<br>*Joris Walraevens -- Department of Telecommunications and Information Processing* | 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<br>*Hendrik Rogier -- Department of Information Technology* | 6 | | | A:1 | 180 |
| 2 | E033021 | Electromagnetic-aware High Frequency Design<br>*Hendrik Rogier -- Department of Information Technology* | 6 | | | A:1 | 180 |
| 3 | E012130 | Modulation and Detection<br>*Nele Noels -- Department of Telecommunications and Information Processing* | 6 | | | B:1 | 180 |
| 4 | E003600 | Information Theory<br>*Heidi Steendam -- Department of Telecommunications and Information Processing* | 6 | | | B:2 | 180 |
| 5 | E031251 | Design Methodology for FPGAs<br>*Dirk Stroobandt -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 6 | E033640 | High-speed Electronics<br>*Johan Bauwelinck -- Department of Information Technology* | 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<br>*Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | B:1 | 180 |
| 2 | E068900 | Structure and Dynamics of Polymers<br>*Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | B:1 | 180 |
| 3 | E064961 | Polymer Processing and Circularity<br>*Dagmar D'hooge -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | A:2 | 180 |
| 4 | E065340 | Micro-analysis and Structure Determination in Materials Science<br>*Hossein Beladi -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | A:2 | 180 |
| 5 | E066662 | Environmentally Assisted Degradation of Materials<br>*Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | A:2 | 180 |
| 6 | E066020 | Microstructure of Materials [nl]<br>*Marcel Sluiter -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | A:2 | 180 |
| 7 | E064761 | Textile Functionalization<br>*Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | A:2 | 180 |
| 8 | E069041 | Bio-based and Synthetic Fibres<br>*Karen De Clerck -- Department of Materials, Textiles and Chemical Engineering* | 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<br>*Paul Van Steenberge -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | | 180 |
| 2 | E071200 | Unit Operations in Chemical Industry<br>*Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | B:1 | 180 |
| 3 | E045910 | Heat Engineering and Mass Transport<br>*Geraldine Heynderickx -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | | 180 |
| 4 | E073760 | Chemical Process Design<br>*Georgios Bellos -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | B:2 | 180 |
| 5 | E007920 | Computer Control of Industrial Processes | 6 | | | | 180 |
| 6 | E071131 | Sustainable Chemical Production Processes<br>*Kevin Van Geem -- Department of Materials, Textiles and Chemical Engineering* | 6 | | | A:1 | 180 |
| 7 | E071181 | Chemistry of Industrial Processes | 6 | | | B:2 | 180 |

### 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]<br>*Henk Vrielinck -- Department of Solid State Sciences* | 6 | | | A:1 | 180 |
| 2 | E024641 | Physics of Semiconductor Devices<br>*Benoit Bakeroot -- Department of Electronics and Information Systems* | 6 | | | B:2 | 180 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | E065340 | Micro-analysis and Structure Determination in Materials Science<br>*Hossein Beladi -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | A:2 | 180 |
| 4 | E026221 | Plasma Physics<br>*Geert Verdoolaege -- Department of Applied Physics* | 6 | | | A:1 | 180 |
| 5 | E029040 | Physical Chemistry<br>*Iwan Moreels -- Department of Chemistry* | 6 | | | B:2 | 180 |
| 6 | E025010 | Atomic and Molecular Physics<br>*Veronique Van Speybroeck -- Department of Applied Physics* | 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<br>*Jan Mertens -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | | 90 |
| 2 | E037621 | Gas Turbines<br>*Ward De Paepe -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:1 | 90 |
| 3 | E037121 | Displacement Pumps, Compressors and IC Engine Fundamentals | 6 | | | | 180 |
| 4 | E039060 | Sustainable Energy and Rational Use of Energy<br>*Filip Strubbe -- Department of Electronics and Information Systems* | 4 | | | A:2 | 120 |
| 5 | E037820 | Technology of Electrical Installations<br>*Peter Sergeant -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 6 | E038020 | Nuclear Reactor Theory: part 1<br>*Greet Maenhout -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:1 | 90 |
| 7 | E028700 | Thermal Installations | 6 | | | | 180 |
| 8 | E035050 | Operational Aspects of Electrical Power Systems<br>*Lieven Vandevelde -- Department of Electromechanical, Systems and Metal Engineering* | 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<br>*Gert De Cooman -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 2 | E004021 | Nonlinear Systems<br>*Jasper De Bock -- Department of Electronics and Information Systems* | 6 | | | B:1 | 180 |
| 3 | E019331 | ICT and Mechatronics<br>*Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering* | 6 | | | A:2 | 180 |
| 4 | E008420 | Servo Systems and Industrial Robots<br>*Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:1 | 90 |
| 5 | E007920 | Computer Control of Industrial Processes | 6 | | | | 180 |
| 6 | E030520 | Power Electronics<br>*Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 7 | E005722 | Modelling and Simulation of Dynamical Systems<br>*Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering* | 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]<br>*Günther Roelkens -- Department of Information Technology* | 6 | | | A:2 | 180 |
| 2 | E030660 | Lasers<br>*Geert Morthier -- Department of Information Technology* | 4 | | | A:1 | 120 |
| 3 | E030761 | Microphotonics<br>*Dries Van Thourhout -- Department of Information Technology* | 6 | | | A:1 | 180 |
| 4 | E024800 | Optical Materials<br>*Jeroen Beeckman -- Department of Electronics and Information Systems* | 6 | | | A:1 | 180 |
| 5 | E008446 | Sensors, Actuators and Electronic Microsystems<br>*Herbert De Smet -- Department of Electronics and Information Systems* | 6 | | | A:2 | 180 |
| 6 | E030721 | Laboratories in Photonics Research<br>*Alberto Curto -- Department of Information Technology* | 6 | | | A:2 | 180 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7 | E031521 | Physics of Semiconductor Technologies and Devices<br>*Geert Van Steenberge -- Department of Electronics and Information Systems* | 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]<br>*Hendrik Schoukens -- Department of European, Public and International Law* | 5 | | | A:1 | 125 |
| 2 | I002700 | Clean Technology | 5 | | | | 150 |
| 3 | E065460 | Rational Use of Materials<br>*Tom Depover -- Department of Materials, Textiles and Chemical Engineering* | 5 | | | A:1 | 150 |
| 4 | E078752 | Water and Air Quality Management<br>*Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering* | 4 | | | A:2 | 120 |
| 5 | E039060 | Sustainable Energy and Rational Use of Energy<br>*Filip Strubbe -- Department of Electronics and Information Systems* | 4 | | | A:2 | 120 |
| 6 | E078061 | Introduction to Environmental Risk Assessment<br>*Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology* | 3 | | | A:1 | 90 |
| 7 | I002606 | Environmental Risk Assessment<br>*Karel De Schamphelaere -- Department of Animal Sciences and Aquatic Ecology* | 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]<br>*Patrick Segers -- Department of Electronics and Information Systems* | 6 | | | A:J | 180 |
| 2 | E098010 | Integrated Portfolio [en, nl]<br>*Hiep Luong -- Department of Telecommunications and Information Processing* | 6 | | | A:J | 180 |
| 3 | E098010 | Integrated Portfolio [en, nl]<br>*Hiep Luong -- Department of Telecommunications and Information Processing* | 3 | | | B:J | 90 |
| 4 | E037810 | Safety of Electrical and Mechanical Installations [nl]<br>*Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering* | 3 | | | A:2 | 90 |
| 5 | E039060 | Sustainable Energy and Rational Use of Energy<br>*Filip Strubbe -- Department of Electronics and Information Systems* | 4 | | | A:2 | 120 |
| 6 | E078310 | Sustainable Use of Materials: Metals [nl]<br>*Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering* | 3 | | | A:1 | 90 |
| 7 | E078320 | Sustainable Use of Materials: Plastics and Derived Materials [nl]<br>*Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering* | 3 | | | A:2 | 90 |
| 8 | E078010 | Technology and Environment<br>*Luc Martens -- Department of Information Technology* | 3 | | | A:1 | 90 |
| 9 | E078752 | Water and Air Quality Management<br>*Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering* | 4 | | | A:2 | 120 |
| 10 | E092100 | Biosystems [nl]<br>*Pascal Verdonck -- Department of Electronics and Information Systems* | 3 | | | A:1 | 90 |
| 11 | E075310 | Ethics, Engineering and Society [nl]<br>*Seppe Segers -- Department of Philosophy and Moral Sciences* | 3 | | | A:2 | 90 |
| 12 | C004009 | History and Philosophy of Sciences<br>*Maarten Van Dyck -- Department of Philosophy and Moral Sciences* | 3 | | | | 90 |
| 13 | E076320 | The Information Society and ICT [nl]<br>*Erik Mannens -- Department of Electronics and Information Systems* | 3 | | | A:2 | 90 |
| 14 | A001900 | Introduction to Psychology [nl]<br>*Wim Notebaert -- Department of Experimental Psychology* | 3 | | | A:1 | 90 |
| 15 | H001977 | Coaching and Diversity [nl]<br>*Elisabeth De Schauwer -- Department of Special Education* | 3 | UKV | | A:J | 90 |
| 16 | A005503 | Context and Nuance. A Critical Reflection on Current Topics [nl]<br>*July De Wilde -- Department of Translation, Interpreting and Communication* | 6 | UKV | | A:1 | 180 |
| 17 | E076450 | Basic Entrepreneurship | 3 | UKV | | | 90 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18 | A005646 | Introduction to Business Law [nl]<br>*Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law* | 3 | | | A:1 | 90 |
| 19 | E076460 | Dare to Venture | 4 | | | | 120 |
| 20 | E076471 | Dare to Start<br>*Wouter Haerick -- Department of Information Technology* | 3 | | | A:2 | 90 |
| 21 | E076621 | Principles of Law and Construction Law [nl]<br>*Jelle Laverge -- Department of Architecture and Urban Planning* | 3 | | | A:1 | 90 |
| 22 | E076951 | Engineering Economy<br>*Sofie Verbrugge -- Department of Information Technology* | 6 | | | A:1 | 180 |
| 23 | E076431 | Introduction to Entrepreneurship | 3 | | | | 90 |
| 24 | H002169 | Powerful Learning Environments [nl]<br>*Bram De Wever -- Department of Educational Studies* | 6 | | | A:1 | 180 |
| 25 | H002196 | Classroom Management and Reflection [nl]<br>*Tijs Rotsaert -- Department of Educational Studies* | 4 | | | A:2 | 120 |
| 26 | H002197 | The Teacher within School and Society [nl]<br>*Melissa Tuytens -- Department of Educational Studies* | 4 | | | A:1 | 120 |
| 27 | H002198 | Psychology of Adolescence [nl]<br>*Wim Beyers -- Department of Developmental, Personality and Social Psychology* | 4 | | | A:1 | 120 |
| 28 | F000083 | Macroeconomics [nl]<br>*Freddy Heylen -- Department of Economics* | 6 | | | A:1 | 180 |
| 29 | H001010 | Introduction Industrial Psychology [nl]<br>*Bart Wille -- Department of Developmental, Personality and Social Psychology* | 5 | | | C:1 | 150 |
| 30 | F000551 | Business Skills<br>*Mieke Audenaert -- Department of Marketing, Innovation and Organisation* | 4 | | | C:2 | 120 |
| 31 | A003001 | Academic English<br>*Geert Jacobs -- Department of Linguistics* | 3 | UKV | | B:1, A:2 | 90 |
| 32 | E075800 | Communication [nl]<br>*Leen Pollefliet -- Department of Information Technology* | 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 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 |