

Faculty of Engineering and Architecture

Master of Science in Industrial Engineering and Operations Research

Language of instruction: Dutch

Programme version 16

1 General Courses 66 credits

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|---|------|-----|-----|---------|-------|
| 1 | E004255 Operations Research Models and Methods El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:1 | 180 |
| 2 | E005741 Simulation of Stochastic Systems Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:1 | 180 |
| 3 | E018321 Algorithmic Programming Birger Raa -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:1 | 180 |
| 4 | E076951 Engineering Economy Sofie Verbrugge -- Department of Information Technology | 6 | | 1 | B:1 | 180 |
| 5 | E004241 Industrial Systems Modelling and Optimization El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:2 | 180 |
| 6 | E076341 Information Technology for Industrial Engineering Michiel Vlamincx -- Department of Telecommunications and Information Processing | 3 | | 1 | B:2 | 90 |
| 7 | E004153 Heuristics and Search Methods Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design | 3 | | 1 | B:1 | 90 |
| 8 | E076221 Manufacturing Planning and Control Birger Raa -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:1 | 180 |
| 9 | E076380 Methods Engineering and Work Measurement Dieter Claeyss -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:2 | 180 |
| 10 | E060240 Quality Engineering and Industrial Statistics Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:2 | 180 |
| 11 | E004701 Design of Manufacturing and Service Operations Dieter Claeyss -- Department of Industrial Systems Engineering and Product Design | 6 | | 1 | B:1 | 180 |
| 12 | E076251 Supply Chain Engineering Birger Raa -- Department of Industrial Systems Engineering and Product Design | 6 | | 2 | B:1 | 180 |

2 Elective Courses 30 credits

Subscribe to 30 credit units from no less than 1 and no more than 2 modules from the following list. Subject to approval by the faculty.
Students take either 15 credit units from module 2.1 (in-depth elective courses) or the Minor Artificial Intelligence of at least 18 credit units. Supplement with course units from the other modules.

2.1 In-depth Elective Courses

Subscribe to no less than 15 credit units from the following list. Subject to approval by the faculty.

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | E004720 Network Modelling and Design Mario Pickavet -- Department of Information Technology | 4 | | | A:2 | 120 |
| 2 | E007920 Computer Control of Industrial Processes [en] Clara-Mihaela Ionescu -- Department of Electromechanical, Systems and Metal Engineering | 6 | | | A:1 | 180 |
| 3 | E011320 Queueing Theory Joris Walraevens -- Department of Telecommunications and Information Processing | 6 | | | C:1 | 180 |
| 4 | E061330 Machine Learning Joni Dambre -- Department of Electronics and Information Systems | 6 | | | A:1 | 180 |
| 5 | E019331 ICT and Mechatronics Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering | 6 | | | B:2 | 180 |

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|----|---------|---|---|--|-----|-----|
| 6 | E007120 | Modelling and Control of Dynamic Systems Mia Loccufier -- Department of Electromechanical, Systems and Metal Engineering | 6 | | A:2 | 180 |
| 7 | E003710 | Game Theory and Multiagent Systems [en] Heidi Steendam -- Department of Telecommunications and Information Processing | 6 | | A:1 | 180 |
| 8 | E003422 | Fundamentals of Statistical Sensor Processing [en] Hiep Luong -- Department of Telecommunications and Information Processing | 6 | | A:1 | 180 |
| 9 | E018240 | Big Data Technology [en] Dieter De Witte -- Department of Electronics and Information Systems | 4 | | A:1 | 120 |
| 10 | E084460 | Design of Urban Services [en] Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design | 6 | | A:2 | 180 |

2.2 Minor Artificial Intelligence

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 | E061330 Machine Learning [en] Joni Dambre -- Department of Electronics and Information Systems | 6 | | | B:1 | 180 |
| 2 | E016340 Probabilistic Graphical Models [en] Aleksandra Pizurica -- Department of Telecommunications and Information Processing | 4 | | | A:2 | 120 |
| 3 | E018230 Recommender Systems [en] Toon De Pessemier -- Department of Information Technology | 6 | | | A:2 | 180 |
| 4 | E003710 Game Theory and Multiagent Systems [en] Heidi Steendam -- Department of Telecommunications and Information Processing | 6 | | | A:1 | 180 |
| 5 | E061370 Data Visualization for and with AI [en] Jefrey Lijffijt -- Department of Electronics and Information Systems | 3 | | | A:1 | 90 |
| 6 | E018240 Big Data Technology [en] Dieter De Witte -- Department of Electronics and Information Systems | 4 | | | A:1 | 120 |
| 7 | E018250 Big Data Algorithms [en] Dieter De Witte -- Department of Electronics and Information Systems | 3 | | | A:2 | 90 |

2.3 Broadening Elective Courses

Subscribe to no more than 15 credit units from the following list. Subject to approval by the faculty.

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | E099300 Industry Internship Engineering and Architecture [en, nl] Patrick Segers -- Department of Electronics and Information Systems | 6 | | | A:J | 180 |
| 2 | E099400 Research Internship [en] Patrick Segers -- Department of Electronics and Information Systems | 6 | | | A:J | 180 |
| 3 | E099400 Research Internship [en] Patrick Segers -- Department of Electronics and Information Systems | 3 | | | B:J | 90 |
| 4 | E098010 Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing | 6 | | | A:J | 180 |
| 5 | E098010 Integrated Portfolio [en, nl] Hiep Luong -- Department of Telecommunications and Information Processing | 3 | | | B:J | 90 |
| 6 | E076820 Project Management [en] Mario Vanhoucke -- Department of Business Informatics and Operations Management | 6 | | | A:2 | 180 |
| 7 | E037810 Safety of Electrical and Mechanical Installations Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering | 3 | | | A:2 | 90 |
| 8 | E076320 The Information Society and ICT Erik Mannens -- Department of Electronics and Information Systems | 3 | | | A:2 | 90 |
| 9 | F000627 Transport Economics Jochen Maes -- Department of Economics | 6 | | | A:2 | 180 |
| 10 | F000892 Innovation Management [en] Katrien Verleye -- Department of Marketing, Innovation and Organisation | 3 | | | A:2 | 90 |
| 11 | E076460 Dare to Venture [en] Johan Verrue -- Department of Marketing, Innovation and Organisation | 4 | | | A:2 | 120 |
| 12 | F000224 Labour and Employment Stijn Baert -- Department of Economics | 5 | | | A:1 | 150 |
| 13 | F000083 Macroeconomics Freddy Heylen -- Department of Economics | 6 | | | A:1 | 180 |
| 14 | H001010 Introduction Industrial Psychology Bart Wille -- Department of Developmental, Personality and Social Psychology | 5 | | | A:2 | 150 |

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|----|---------|--|---|-----|-----|-----|
| 15 | A005646 | Introduction to Corporate Law Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law | 3 | | A:1 | 90 |
| 16 | F000551 | Business Skills [en] Mieke Audenaert -- Department of Marketing, Innovation and Organisation | 4 | | C:2 | 120 |
| 17 | F000132 | Corporate Finance [en] Virginie Mataigne -- Department of Accounting, Corporate Finance and Taxation | 6 | | A:2 | 180 |
| 18 | F000683 | Investment Analysis [en] Michael Frömmel -- Department of Economics | 6 | | A:1 | 180 |
| 19 | F000778 | Business Process Management [en] Frederik Gailly -- Department of Business Informatics and Operations Management | 4 | | A:2 | 120 |
| 20 | H001977 | Coaching and Diversity Elisabeth De Schauwer -- Department of Special Education | 3 | UKV | A:J | 90 |
| 21 | E078310 | Sustainable Use of Materials: Metals Kim Verbeke -- Department of Materials, Textiles and Chemical Engineering | 3 | | A:1 | 90 |
| 22 | E078320 | Sustainable Use of Materials: Plastics and Derived Materials Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering | 3 | | A:2 | 90 |
| 23 | E078010 | Technology and Environment [en] Luc Martens -- Department of Information Technology | 3 | | A:1 | 90 |
| 24 | A001900 | Introduction to Psychology Wim Notebaert -- Department of Experimental Psychology | 3 | | A:1 | 90 |
| 25 | D002354 | Movement and Sports: Now and Later Veerle Segers -- Department of Movement and Sports Sciences | 3 | UKV | A:2 | 90 |
| 26 | K001298 | Sustainable Development [en] Bernard Mazijn -- Department of Conflict and Development Studies | 5 | | A:2 | 150 |
| 27 | C004545 | Bayesian Statistics [en] Koen De Turck -- Department of Telecommunications and Information Processing | 5 | | A:2 | 150 |

2.4 Elective Courses Faculty

Subscribe to no more than 15 credit units of technical courses from the other programmes Master of Science in Engineering (with the exception of Architecture) of the Faculty of Engineering and Architecture. Subject to approval by the faculty.

3 Master's Dissertation 24 credits

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

Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the course name, using the following ISO codes:

| | | | | | | |
|---------------|-------------|-------------|---------------|----------------|----------------------|-------------|
| bg: Bulgarian | de: German | es: Spanish | ja: Japanese | pl: Polish | sh: Croatian/Serbian | zh: Chinese |
| cs: Czech | el: Greek | fr: French | nl: Dutch | pt: Portuguese | sl: Slovene | |
| da: Danish | en: English | it: Italian | no: Norwegian | ru: Russian | sv: Swedish | |

Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.

When a semester is shown in brackets, the course is not offered this year in the specific offering.

The offering frequency and first year of offering are indicated by the following codes:

| | | | |
|-----------------|---------------------------------|---------------------------------|---------------------------------|
| a: bi-annually | c: annually, from 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 |