Study Programme

Academic year 2024-2025

Faculty of Engineering and Architecture

Master of Science in Industrial Engineering and Operations Research -- Manufacturing and Supply Chain Engineering

Language of instruction: English

Programme version 3

1 General Courses					36 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E004255	Operations Research Models and Methods	6		1	A:1	180
		El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
2	E005741	Simulation of Stochastic Systems	6		1	A:1	180
		Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
3	E018321	Algorithmic Programming	6		1	A:1	180
		Pieter Leyman -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
4	E076951	Engineering Economy	6		1	A:1	180
		Sofie Verbrugge -- Department of Information Technology					
		Indicative price: € 60					
5	E004241	Industrial Systems Modelling and Optimization	6		1	A:2	180
		El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
6	E076341	Information Technology for Industrial Engineering	3		1	A:2	90
		Michiel Vlaminck -- Department of Telecommunications and Information Processing					
		Indicative price: € 0					
7	E004153	Heuristics and Search Methods	3		2	A:1	90
		Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					

2 Courses Related to the Main Subject					30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E076221	Manufacturing Planning and Control	6		1	A:1	180
		Birger Raa -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
2	E076380	Methods Engineering and Work Measurement	6		1	A:2	180
		Dieter Claeys -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 50					
3	E060240	Quality Engineering and Industrial Statistics	6		1	A:2	180
		Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 50					
4	E004701	Design of Manufacturing and Service Operations	6		2	A:1	180
		Dieter Claeys -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					
5	E076251	Supply Chain Engineering	6		2	A:1	180
		Birger Raa -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: € 0					

3 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.

3.1 In-depth Elective Courses and Minor   15 credits

3.1.1 Elective Courses Manufacturing and Supply Chain

Subscribe to at least 15 credit units from the from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E003710	Game Theory and Multiagent Systems	6			A:1	180
		Heidi Steendam -- Department of Telecommunications and Information Processing					
		Indicative price: € 0					
2	E007920	Computer Control of Industrial Processes	6			A:1	180
		Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering					
		Indicative price: € 0					
3	E061330	Machine Learning	6			B:1	180
		Joni Dambre -- Department of Electronics and Information Systems					
		Indicative price: € 0					
4	E003422	Fundamentals of Statistical Sensor Processing	6			A:1	180
		Hiep Luong -- Department of Telecommunications and Information Processing					
		Indicative price: € 0					
5	E084390	Traffic Flow Modelling	6			A:1	180
		Dieter Fiems -- Department of Telecommunications and Information Processing					
		Indicative price: € 0					
6	E084470	Computational Aspects of Transport and Mobility	4			A:1	120
		Pieter Audenaert -- Department of Information Technology					
		Indicative price: € 20					
7	E011320	Queueing Theory	6			A:1	180
		Joris Walraevens -- Department of Telecommunications and Information Processing					
		Indicative price: € 10					
8	E019331	ICT and Mechatronics	6			A:2	180
		Guillaume Crevecoeur -- Department of Electromechanical, Systems and Metal Engineering					
		Indicative price: unknown					
9	E004720	Network Modelling and Design	4			B:2	120
		Mario Pickavet -- Department of Information Technology					
		Indicative price: € 30					
10	E003110	Applied Probability [nl]	3			A:2	90
		Sabine Wittevrongel -- Department of Telecommunications and Information Processing					
		Indicative price: € 8					
11	E007120	Modelling and Control of Dynamic Systems [nl]	6			A:2	180
		Mia Loccufier -- Department of Electromechanical, Systems and Metal Engineering					
		Indicative price: € 12					
12	E018240	Big Data Technology	4			A:1	120
		Dieter De Witte -- Department of Electronics and Information Systems					
		Indicative price: € 0					
13	E084460	Design of Urban Services	6			A:2	180
		Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design					
		Indicative price: unknown					

3.1.2 Minor Artifical Intelligence

Subscribe to no less than 18 and no more than 22 credit units from the following list. Subject to approval by the faculty.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E061330	Machine Learning	6			B:1	180
		Joni Dambre -- Department of Electronics and Information Systems					
		Indicative price: € 0					
2	E016340	Probabilistic Graphical Models	4			A:2	120
		Aleksandra Pizurica -- Department of Telecommunications and Information Processing					
		Indicative price: € 0					
3	E018230	Recommender Systems	6			A:2	180
		Toon De Pessemier -- Department of Information Technology					

Nr	Course		CRDT	Ref	MT1	Session	Study
4	E003710	Game Theory and Multiagent Systems	6			A:1	180

Heidi Steendam -- Department of Telecommunications and Information Processing
Indicative price: € 0

| 5 | E061370 | Data Visualization for and with AI | 3 | | | A:1 | 90 |

Jefrey Lijffijt -- Department of Electronics and Information Systems
Indicative price: € 0

| 6 | E018240 | Big Data Technology | 4 | | | A:1 | 120 |

Dieter De Witte -- Department of Electronics and Information Systems
Indicative price: € 0

| 7 | E018250 | Big Data Algorithms | 3 | | | A:2 | 90 |

Dieter De Witte -- Department of Electronics and Information Systems
Indicative price: € 0

3.1.3 Minor Automotive Production Engineering

Subscribe to no less than 18 and no more than 24 credit units from the following list, with
• no less than 6 credit units from the courses with reference b,
• no less than 6 credit units from the courses with reference c.
Subject to approval by the faculty.
Only subscribe to courses with reference b or c.

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
Indicative price: € 0

| 2 | E076380 | Methods Engineering and Work Measurement | 6 | a | | A:2 | 180 |

Dieter Claeys -- Department of Industrial Systems Engineering and Product Design
Indicative price: € 50

| 3 | E060240 | Quality Engineering and Industrial Statistics | 6 | a | | A:2 | 180 |

Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design
Indicative price: € 50

| 4 | E066662 | Environmentally Assisted Degradation of Materials | 6 | b | | A:2 | 180 |

Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering
Indicative price: € 10

| 5 | E066270 | Metal Processing and Technology | 6 | b | | A:2 | 180 |

Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: unknown

| 6 | E900069 | Composites | 6 | b | | A:1 | 180 |

Wim Van Paepegem -- Department of Materials, Textiles and Chemical Engineering
Indicative price: € 20

| 7 | E043070 | Materials Selection in Mechanical Design | 6 | b | | B:2 | 180 |

Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: unknown

| 8 | E061322 | Machine Design | 6 | c | | A:1 | 180 |

Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: unknown

| 9 | E037121 | Displacement Pumps, Compressors and IC Engine Fundamentals | 6 | c | | A:1 | 180 |

Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: € 0

| 10 | E037221 | IC Engines: advanced design and research | 3 | c | | A:2 | 90 |

Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: € 0

| 11 | E061621 | Automotive Technology | 3 | c | | A:2 | 90 |

Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: € 0

| 12 | E007920 | Computer Control of Industrial Processes | 6 | c | | A:1 | 180 |

Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: € 0

| 13 | E008420 | Servo Systems and Industrial Robots | 3 | c | | A:1 | 90 |

Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering
Indicative price: € 0

| 14 | E030520 | Power Electronics | 3 | c | | A:2 | 90 |

Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering

3.2 Broadening Elective Courses   15 credits

Subscribe to at most 15 credit units from no less than 1 and no more than 2 modules from the following list. Subject to approval by the faculty.

3.2.1 Broadening Elective Courses

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	E099400	Research Internship *Patrick Segers -- Department of Electronics and Information Systems* Indicative price: unknown	6			A:J	180
3	E099400	Research Internship *Patrick Segers -- Department of Electronics and Information Systems* Indicative price: unknown	3			B:J	90
4	E098010	Integrated Portfolio [en, nl] *Hiep Luong -- Department of Telecommunications and Information Processing* Indicative price: € 50	6			A:J	180
5	E098010	Integrated Portfolio [en, nl] *Hiep Luong -- Department of Telecommunications and Information Processing* Indicative price: € 50	3			B:J	90
6	E076820	Project Management *Mario Vanhoucke -- Department of Business Informatics and Operations Management* Indicative price: € 75	6			A:2	180
7	E037810	Safety of Electrical and Mechanical Installations [nl] *Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering* Indicative price: unknown	3			A:2	90
8	E076320	The Information Society and ICT [nl] *Erik Mannens -- Department of Electronics and Information Systems* Indicative price: unknown	3			A:2	90
9	F000627	Transport Economics [nl] *Jochen Maes -- Department of Economics* Indicative price: € 69	6			A:2	180
10	F000892	Innovation Management *Katrien Verleye -- Department of Marketing, Innovation and Organisation* Indicative price: € 55	3			A:2	90
11	E076460	Dare to Venture *Johan Verrue -- Department of Marketing, Innovation and Organisation* Indicative price: unknown	4			A:2	120
12	F000224	Labour and Employment [nl] *Stijn Baert -- Department of Economics* Indicative price: € 9	5			A:1	150
13	F000083	Macroeconomics [nl] *Freddy Heylen -- Department of Economics* Indicative price: € 65	6			A:1	180
14	H001010	Introduction Industrial Psychology [nl] *Bart Wille -- Department of Developmental, Personality and Social Psychology* Indicative price: € 45	5			A:2	150
15	A005646	Introduction to Business Law [nl] *Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law* Indicative price: unknown	3			A:1	90
16	F000551	Business Skills *Mieke Audenaert -- Department of Marketing, Innovation and Organisation* Indicative price: € 46	4			C:2	120
17	F000132	Corporate Finance *Virginie Mataigne -- Department of Accounting, Corporate Finance and Taxation* Indicative price: € 59	6			A:2	180
18	F000683	Investment Analysis *Michael Frömmel -- Department of Economics*	6			A:1	180

Nr		Course	CRDT	Ref	MT1	Session	Study
19	F000778	Business Process Management	4			A:2	120

Michaël Verdonck -- Department of Business Informatics and Operations Management
Indicative price: € 0

| 20 | H001977 | Coaching and Diversity [nl] | 3 | UKV | | A:J | 90 |

Elisabeth De Schauwer -- Department of Special Education
Indicative price: € 0

| 21 | E078310 | Sustainable Use of Materials: Metals [nl] | 3 | | | A:1 | 90 |

Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering
Indicative price: € 8

| 22 | E078320 | Sustainable Use of Materials: Plastics and Derived Materials [nl] | 3 | | | A:2 | 90 |

Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering
Indicative price: € 0

| 23 | E078010 | Technology and Environment | 3 | | | A:1 | 90 |

Luc Martens -- Department of Information Technology
Indicative price: € 0

| 24 | A001900 | Introduction to Psychology [nl] | 3 | | | A:1 | 90 |

Wim Notebaert -- Department of Experimental Psychology
Indicative price: unknown

| 25 | D002354 | Movement and Sports: Now and Later [nl] | 3 | UKV | | A:2 | 90 |

Veerle Segers -- Department of Movement and Sports Sciences
Indicative price: € 50

| 26 | K001298 | Sustainable Development | 5 | | | A:2 | 150 |

Bernard Mazijn -- Department of Conflict and Development Studies
Indicative price: unknown

| 27 | C004545 | Bayesian Statistics | 5 | | | A:2 | 150 |

Koen De Turck -- Department of Telecommunications and Information Processing
Indicative price: € 0

3.2.2 Elective Courses Faculty

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

4 Master's Dissertation   24 credits

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

Indicative price: unknown

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 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 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.