



## 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 <i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
2	E005741	Simulation of Stochastic Systems <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
3	E018321	Algorithmic Programming <i>Pieter Leyman -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
4	E076951	Engineering Economy <i>Sofie Verbrugge -- Department of Information Technology</i> <a href="#">Indicative price: € 60</a>	6		1	A:1	180
5	E004241	Industrial Systems Modelling and Optimization <i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		1	A:2	180
6	E076341	Information Technology for Industrial Engineering <i>Michiel Vlaminck -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 0</a>	3		1	A:2	90
7	E004153	Heuristics and Search Methods <i>Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	3		2	A:1	90

2 Courses Related to the Main Subject						30 credits	
Nr	Course		CRDT	Ref	MT1	Session	Study
1	E076221	Manufacturing Planning and Control <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
2	E076380	Methods Engineering and Work Measurement <i>Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 50</a>	6		1	A:2	180
3	E060240	Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 50</a>	6		1	A:2	180
4	E004701	Design of Manufacturing and Service Operations <i>Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		2	A:1	180
5	E076251	Supply Chain Engineering <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6		2	A:1	180

3 Elective Courses	30 credits
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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.

Divided as:

- 9 credit units in year 1
- 21 credit units in year 2

### 3.1 In-depth Elective Courses and Minor

15 credits

Subscribe to at least 15 credit units from 1 module from the following list. Subject to approval by the faculty.

Students take either 15 credit units from module 3.1.1 (elective courses) or 1 minor of at least 18 credit units (Minor Artificial Intelligence or Minor Automotive Production Engineering).

#### 3.1.1 Elective Courses Manufacturing and Supply Chain

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

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

#### 3.1.2 Minor Artificial 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 <i>Joni Dambre -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	6			B:1	180
2	E016340	Probabilistic Graphical Models <i>Aleksandra Pizurica -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 0</a>	4			A:2	120
3	E018230	Recommender Systems <i>Toon De Pessemier -- Department of Information Technology</i>	6			A:2	180

[Indicative price: € 0](#)

4	E003710	Game Theory and Multiagent Systems <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i> <a href="#"><u>Indicative price: € 0</u></a>	6	A:1	180
5	E061370	Data Visualization for and with AI <i>Jefrey Lijffijt -- Department of Electronics and Information Systems</i> <a href="#"><u>Indicative price: € 0</u></a>	3	A:1	90
6	E018240	Big Data Technology <i>Dieter De Witte -- Department of Electronics and Information Systems</i> <a href="#"><u>Indicative price: € 0</u></a>	4	A:1	120
7	E018250	Big Data Algorithms <i>Dieter De Witte -- Department of Electronics and Information Systems</i> <a href="#"><u>Indicative price: € 0</u></a>	3	A:2	90

### 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 <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#"><u>Indicative price: € 0</u></a>	6	a		A:1	180
2	E076380	Methods Engineering and Work Measurement <i>Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i> <a href="#"><u>Indicative price: € 50</u></a>	6	a		A:2	180
3	E060240	Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i> <a href="#"><u>Indicative price: € 50</u></a>	6	a		A:2	180
4	E066662	Environmentally Assisted Degradation of Materials <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#"><u>Indicative price: € 10</u></a>	6	b		A:2	180
5	E066270	Metal Processing and Technology <i>Leo Kestens -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: unknown</u></a>	6	b		A:2	180
6	E900069	Composites <i>Wim Van Paepengem -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#"><u>Indicative price: € 20</u></a>	6	b		A:1	180
7	E043070	Materials Selection in Mechanical Design <i>Stijn Hertelé -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: unknown</u></a>	6	b		B:2	180
8	E061322	Machine Design <i>Dieter Fauconnier -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: unknown</u></a>	6	c		A:1	180
9	E037121	Displacement Pumps, Compressors and IC Engine Fundamentals <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: € 0</u></a>	6	c		A:1	180
10	E037221	IC Engines: advanced design and research <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: € 0</u></a>	3	c		A:2	90
11	E061621	Automotive Technology <i>Sebastian Verhelst -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: € 0</u></a>	3	c		A:2	90
12	E007920	Computer Control of Industrial Processes <i>Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: € 0</u></a>	6	c		A:1	180
13	E008420	Servo Systems and Industrial Robots <i>Frederik Ostyn -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#"><u>Indicative price: € 0</u></a>	3	c		A:1	90
14	E030520	Power Electronics <i>Hendrik Vansompel -- Department of Electromechanical, Systems and Metal Engineering</i>	3	c		A:2	90

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

[Indicative price: € 30](#)

19	F000778	Business Process Management <i>Michaël Verdonck -- Department of Business Informatics and Operations Management</i>	4		A:2	120
20	H001977	Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i>	3	UKV	A:J	90
21	E078310	Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	3		A:1	90
22	E078320	Sustainable Use of Materials: Plastics and Derived Materials [nl] <i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i>	3		A:2	90
23	E078010	Technology and Environment <i>Luc Martens -- Department of Information Technology</i>	3		A:1	90
24	A001900	Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i>	3		A:1	90
25	D002354	Movement and Sports: Now and Later [nl] <i>Veerle Segers -- Department of Movement and Sports Sciences</i>	3	UKV	A:2	90
26	K001298	Sustainable Development <i>Bernard Mazijn -- Department of Conflict and Development Studies</i>	5		A:2	150
27	C004545	Bayesian Statistics <i>Koen De Turck -- Department of Telecommunications and Information Processing</i>	5		A:2	150

### 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 <a href="#">Indicative price: unknown</a>	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.