

Faculty of Engineering and Architecture

Master of Science in Industrial Engineering and Operations Research -- Transport and Mobility Engineering

Language of instruction: English

Programme version 4

## 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: € 60</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: € 219</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		1	A:2	90

## 2 Courses Related to the Main Subject 30 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E084390 Traffic Flow Modelling <i>Dieter Fiems -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 0</a>	6		1	A:1	180
2	E084460 Design of Urban Services <i>Sidharta Gautama -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: unknown</a>	6		1	A:2	180
3	E084480 Advanced Topics in Traffic and Logistics <i>Ivana Semanjski -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 345</a>	4		1	A:2	120
4	C004177 Spatiotemporal Analysis and Modelling <i>Nico Van de Weghe -- Department of Geography</i> <a href="#">Indicative price: € 0</a>	5		2	A:1	150
5	C003534 Urban Mobility and Logistics <i>Giovanni Circella -- Department of Geography</i> <a href="#">Indicative price: € 0</a>	5		2	A:1	150
6	E084470 Computational Aspects of Transport and Mobility <i>Pieter Audenaert -- Department of Information Technology</i> <a href="#">Indicative price: € 20</a>	4		2	A:1	120

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:

- 8 credit units in year 1
- 22 credit units in year 2

### 3.1 In-depth Elective Courses and Minor

15 credits

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

Students take either 15 credit units from module 3.1.1 (elective courses) or the Minor Artificial Intelligence of at least 18 credit units.

#### 3.1.1 Elective Courses Transport and Mobility

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 <i>Heidi Steendam -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
2	E032600 Advanced Linear Process Control <i>Clara Ionescu -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 0</a>	6			(A:1) <sup>c</sup>	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	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
6	E004720 Network Modelling and Design <i>Mario Pickavet -- Department of Information Technology</i> <a href="#">Indicative price: € 30</a>	4			B:2	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	E003110 Applied Probability [nl] <i>Sabine Wittevrongel -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 8</a>	3			A:2	90
9	E076221 Manufacturing Planning and Control <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	6			A:1	180
10	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			A:2	180
11	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			A:2	180
12	E007120 Modelling and Control of Dynamic Systems [nl] <i>Mia Locuffier -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 12</a>	6			A:2	180
13	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

#### 3.1.2 Minor Artificiële intelligentie

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 Pessemer -- Department of Information Technology</i> <a href="#">Indicative price: € 0</a>	6	A:2	180
4	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
5	E061370	Data Visualization for and with AI <i>Jefrey Lijffijt -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	3	A:1	90
6	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
7	E018250	Big Data Algorithms <i>Dieter De Witte -- Department of Electronics and Information Systems</i> <a href="#">Indicative price: € 0</a>	3	A:2	90
8	E016350	Artificial Intelligence <i>Aleksandra Pizurica -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 75</a>	3	B:2	90

3.2 15 credits

Subscribe to 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 Transport and Mobility Engineering

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	E037830 Basics of Health and Safety at Work for Engineers [nl] <i>Sofie Van Volsen -- Department of Industrial Systems Engineering and Product Design</i> <a href="#">Indicative price: € 0</a>	3			A:1	90
7	E076820 Project Management <i>Mario Vanhoucke -- Department of Business Informatics and Operations Management</i> <a href="#">Indicative price: € 75</a>	6			A:2	180
8	E037810 Safety of Electrical and Mechanical Installations [nl] <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i> <a href="#">Indicative price: € 30</a>	3			A:2	90
9	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
10	B001514 Transport Economics and Policy <i>Frank Witlox -- Department of Geography</i> <a href="#">Indicative price: unknown</a>	3			A:1	90
11	F000892 Innovation Management <i>Katrien Verleye -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 55</a>	3			A:2	90
12	F001022 Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: unknown</a>	4			A:2	120

13	F000750	Labour and Employment [nl] <i>Stijn Baert -- Department of Economics</i> <a href="#">Indicative price: € 9</a>	6		A:1	180
14	F000083	Macroeconomics [nl] <i>Freddy Heylen -- Department of Economics</i> <a href="#">Indicative price: € 65</a>	6		A:1	180
15	H001010	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i> <a href="#">Indicative price: € 55</a>	5		C:1	150
16	A005646	Introduction to Corporate 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
17	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i> <a href="#">Indicative price: € 46</a>	4		C:2	120
18	F000132	Corporate Finance <i>Virginie Mataire -- Department of Accounting, Corporate Finance and Taxation</i> <a href="#">Indicative price: € 59</a>	6		A:2	180
19	F000683	Investment Analysis <i>Michael Frömmel -- Department of Economics</i> <a href="#">Indicative price: € 30</a>	6		A:1	180
20	F000778	Business Process Management <i>Michaël Verdonck -- Department of Business Informatics and Operations Management</i> <a href="#">Indicative price: € 0</a>	4		A:2	120
21	H001977	Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i> <a href="#">Indicative price: € 0</a>	3	UKV	A:J	90
22	E078310	Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 8</a>	3		A:1	90
23	E078320	Sustainable Use of Materials: Plastics and Derived Materials [nl] <i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i> <a href="#">Indicative price: € 15</a>	3		A:2	90
24	E078010	Technology and Environment <i>Luc Martens -- Department of Information Technology</i> <a href="#">Indicative price: € 0</a>	3		A:1	90
25	A001900	Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i> <a href="#">Indicative price: unknown</a>	3		A:1	90
26	D002354	Movement and Sports: Now and Later [nl] <i>Veerle Segers -- Department of Movement and Sports Sciences</i> <a href="#">Indicative price: € 50</a>	3	UKV	A:2	90
27	K001298	Sustainable Development <i>Bernard Mazijn -- Department of Conflict and Development Studies</i> <a href="#">Indicative price: unknown</a>	5		A:2	150
28	C004545	Bayesian Statistics <i>Koen De Turck -- Department of Telecommunications and Information Processing</i> <a href="#">Indicative price: € 0</a>	5		A:2	150
29	E084710	Planning Theory: Contemporary Challenges <i>Tim Devos -- Department of Civil Engineering</i> <a href="#">Indicative price: € 0</a>	4		A:2	120
30	E086621	Planning and Transition: Mobility <i>Koos Fransen -- Department of Civil Engineering</i> <a href="#">Indicative price: unknown</a>	3		A:1	90

### 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 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 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 2026-2027	f: annually, from 2027-2028	i: annually, from 2028-2029
b: tri-annually	d: bi-annually, from 2026-2027	g: bi-annually, from 2027-2028	j: bi-annually, from 2028-2029
	e: tri-annually, from 2026-2027	h: tri-annually, from 2027-2028	k: tri-annually, from 2028-2029

### 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.