

Faculty of Engineering and Architecture  
Master of Science in Civil Engineering

Language of instruction: English

Programme version 12

## 1 General Courses 64 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E044940 FEM and Constitutive Material Laws in Structural Engineering <i>Diego Lorenzo Allaix -- Department of Structural Engineering and Building Materials</i>	3		1	B:1	90
2	E040661 Structural Dynamics <i>Mia Loccupfier -- Department of Electromechanical, Systems and Metal Engineering</i>	5		1	B:1	150
3	E045621 Groundwater and Contaminant Flow <i>Herman Peiffer -- Department of Civil Engineering</i>	4		1	B:1	120
4	E044311 Structural Stability <i>Robby Caspele -- Department of Structural Engineering and Building Materials</i>	6		1	A:1	180
5	E045860 Water Management and Environment <i>Tom De Mulder -- Department of Civil Engineering</i>	5		1	B:1	150
6	E052621 Concrete Structures: Prestressed Concrete and Slabs <i>Roman Wan-Wendner -- Department of Structural Engineering and Building Materials</i>	6		1	A:2	180
7	E054820 Inland Waterways and Locks <i>Tom De Mulder -- Department of Civil Engineering</i>	6		1	B:2	180
8	E052210 Geotechnics <i>Mahya Roustaei Hossein Abadi -- Department of Civil Engineering</i>	5		1	B:2	150
9	E053560 Specialised Road Engineering and Mobility <i>Pieter De Winne -- Department of Civil Engineering</i>	5		1	B:2	150
10	E050923 Structural Reliability and Risk Analysis <i>Robby Caspele -- Department of Structural Engineering and Building Materials</i>	4		1	A:2	120
11	E054920 Coastal Engineering and Harbour Construction <i>Peter Troch -- Department of Civil Engineering</i>	6		2	B:1	180
12	E044821 Advanced Bridge and Tunnel Engineering <i>Hans De Backer -- Department of Civil Engineering</i>	6		2	A:1	180
13	E050100 Design of Civil Structures <i>Bart De Pauw -- Department of Civil Engineering</i>	3		2	B:2	90

## 2 Elective Courses

Subscribe to

• Either 20 credit units from 1 major from the following list.

• Either 18 credit units from 1 minor from the following list.

Subject to approval by the faculty.

### 2.1 Major Dredging and Offshore Engineering

20 credits

Subscribe to 20 credit units from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E055120 Introduction to Ships and Marine Technology <i>Evert Lataire -- Department of Civil Engineering</i>	4		1	A:1	120
2	E055400 Coastal Hydrodynamics <i>Peter Troch -- Department of Civil Engineering</i>	3		2	A:1	90
3	E044671 Offshore Foundations <i>Bruno Stuyts -- Department of Civil Engineering</i>	4		2	A:1	120

4	E054680	Dredging: Techniques and Processes <i>Mahya Roustaei Hossein Abadi -- Department of Civil Engineering</i>	5	2	A:2	150
5	E044666	Offshore Structures <i>Andreas Kortenhaus -- Department of Civil Engineering</i>	4	2	A:2	120

## 2.2 Major Construction Design

20 credits

Subscribe to 20 credit units from the following list. Subject to approval by the faculty.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E061502 Spatial Structures <i>Jan Belis -- Department of Structural Engineering and Building Materials</i>	6		1	A:1	180
2	E044902 Conceptual Design <i>Bart De Pauw -- Department of Civil Engineering</i>	5		1	A:2	150
3	E044571 Non-linear and Plastic Methods of Structural Analysis <i>Robby Caspeele -- Department of Structural Engineering and Building Materials</i>	3		2	A:1	90
4	E044930 Seismic Design <i>Hervé Degée -- Department of Structural Engineering and Building Materials</i>	3		2	A:2	90
5	E044631 Glass and Facade Structures <i>Jan Belis -- Department of Structural Engineering and Building Materials</i>	3		2	A:2	90

## 2.3 Minor Operations Management

18 credits

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 <i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i>	6	a		A:1	180
2	E004255 Operations Research Models and Methods <i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i>	6			A:1	180
3	E060240 Quality Engineering and Industrial Statistics <i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i>	6			A:2	180
4	E076951 Engineering Economy <i>Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design</i>	6			A:1	180

## 3 Elective Courses

Subscribe to:

- Either 12 credit units from 2 or 3 modules from the following list (in combination with 1 major)
- Or 14 credit units from 2 or 3 modules from the following list (in combination with 1 minor)

Subject to approval by the faculty.

Students choose:

- Either at least 6 credits from the elective social courses (incl. internship course) and at least 6 credits from the elective technical courses

- Or at least 6 credits from the elective social courses and at least 6 credits internship course from the elective social courses

The elective social courses and the elective technical courses can be chosen from the lists below (3.1 and 3.2) or from the Ghent University programmes (3.3, for a maximum of 6 credits).

### 3.1 Elective Technical Courses Civil Engineering

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E052630 Prefabricated Concrete Constructions <i>Stijn Matthys -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
2	E080830 Information Management in Architecture and Construction [nl, en] <i>Paulus Present -- Department of Architecture and Urban Planning</i>	3			A:2	90
3	E050720 Diagnosis and Repair of Buildings <i>Stijn Matthys -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
4	E065480 Life Cycle Assessment of Materials and Structures <i>Nele De Belie -- Department of Structural Engineering and Building Materials</i>	3			A:2	90
5	E051540 Explosions and Industrial Fire Safety <i>Filip Verplaetsen -- Department of Structural Engineering and Building Materials</i>	6			A:1	180
6	E051610 Passive Fire Protection <i>Emmanuel Annerel -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
7	E086621 Planning and Transition: Mobility <i>Koos Fransen -- Department of Civil Engineering</i>	3			A:1	90
8	E053620 Railroads [nl] <i>Jan Mys -- Department of Civil Engineering</i>	3			A:2	90
9	E055320 Ship Behaviour in Shallow and Confined Water <i>Guillaume Delefortrie -- Department of Civil Engineering</i>	3			A:2	90

10	E063671	Biomaterials and Tissue Engineering <i>Ruslan Dmitriev -- Department of Human Structure and Repair</i>	5			A:1	150
11	E063682	Biomechanics <i>Charlotte Debbaut -- Department of Electronics and Information Systems</i>	6			A:1	180
12	E092623	Modelling of Physiological Systems <i>Patrick Segers -- Department of Electronics and Information Systems</i>	5			A:2	150
13	E099400	Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i>	6			A:J	180
14	E099400	Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i>	3			B:J	90

### 3.2 Elective Social Courses

Subscribe to no less than 6 credit units from the following list. Subject to approval by the faculty. 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] <i>Patrick Segers -- Department of Electronics and Information Systems</i>	6			A:J	180
2	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i>	6			A:J	180
3	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i>	3			B:J	90
4	E037810 Safety of Electrical and Mechanical Installations [nl] <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
5	E039060 Sustainable Energy and Rational Use of Energy <i>Filip Strubbe -- Department of Electronics and Information Systems</i>	4			A:2	120
6	E078310 Sustainable Use of Materials: Metals [nl] <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:1	90
7	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
8	E078010 Technology and Environment <i>Luc Martens -- Department of Information Technology</i>	3			A:1	90
9	E078752 Water and Air Quality Management <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120
10	E092100 Biosystems [nl] <i>Pascal Verdonck -- Department of Electronics and Information Systems</i>	3			A:1	90
11	E075310 Ethics, Engineering and Society [nl] <i>Seppe Segers -- Department of Philosophy and Moral Sciences</i>	3			A:2	90
12	C004009 History and Philosophy of Sciences [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>	3			B:2	90
13	E076320 The Information Society and ICT [nl] <i>Erik Mannens -- Department of Electronics and Information Systems</i>	3			A:2	90
14	A001900 Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i>	3			A:1	90
15	H001977 Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i>	3	UKV		A:J	90
16	A005503 Context and Nuance. A Critical Reflection on Current Topics [nl] <i>July De Wilde -- Department of Translation, Interpreting and Communication</i>	6	UKV		A:1	180
17	F001021 Basic Entrepreneurship [nl] <i>Evy Van Lancker -- Department of Marketing, Innovation and Organisation</i>	3	UKV		A:1	90
18	A005646 Introduction to Business Law [nl] <i>Diederik Bruloot -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i>	3			A:1	90
19	F001022 Dare to Venture <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120
20	E076471 Dare to Start <i>Wouter Haerick -- Department of Information Technology</i>	3			A:2	90
21	E076621 Principles of Law and Construction Law [nl] <i>Jelle Laverge -- Department of Architecture and Urban Planning</i>	3			A:1	90

22	E076951	Engineering Economy <i>Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design</i>	6		A:1	180
23	F001020	Introduction to Entrepreneurship <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3		A:1	90
24	H002476	Powerful Learning Environments [nl] <i>Bram De Wever -- Department of Educational Studies</i>	6		A:1	180
25	H002477	The Teacher within Class, School and Society [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	6		A:2	180
26	H002478	The Student: Development and Motivation [nl] <i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i>	6		A:1	180
27	F000083	Macroeconomics [nl] <i>Freddy Heylen -- Department of Economics</i>	6		A:1	180
28	H001010	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i>	5		C:1	150
29	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>	4		C:2	120
30	A003001	Academic English <i>Geert Jacobs -- Department of Linguistics</i>	3	UKV	B:1, A:2	90
31	E075800	Communication [nl]	3		A:1	90
32	E037830	Basics of Health and Safety at Work for Engineers [nl] <i>Sofie Van Volsem -- Department of Industrial Systems Engineering and Product Design</i>	3		A:1	90

### 3.3 Elective Courses Ghent University

No more than 6 course units from the study programmes of Ghent University (social courses or technical courses), including the [Ghent University Elective Courses](#). 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

#### 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 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