

Faculty of Engineering and Architecture  
Master of Science in Civil Engineering

Language of instruction: English  
Programme version 13

## 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 Loccufer -- 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 20 credits

Subscribe to 20 credit units from 1 major from the following list. Subject to approval by the faculty.

### 2.1 Major Dredging and Offshore Engineering

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
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## 2.2 Major Construction Design

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

## 3 Elective Courses

12 credits

Subscribe to 12 credit units from the following modules. Subject to approval by the faculty.

Students choose:

- at least 1 Elective Technical Course in Civil Engineering from module 3.1
- at least 1 Broadening Elective Course from the clusters 3.2.1 to 3.2.11, with a maximum of 1 course for cluster 3.2.1 and a maximum of 2 courses per cluster for 3.2.2 to 3.2.11
- a maximum of 6 credit units electives from the Ghent University programmes (cluster 3.2.12).

### 3.1 Elective Technical Courses in Civil Engineering

Subscribe to at least 1 elective technical course.

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	E050720 Diagnosis and Repair of Buildings <i>Stijn Matthys -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
3	E065480 Life Cycle Assessment of Materials and Structures <i>Nele De Belie -- Department of Structural Engineering and Building Materials</i>	3			A:2	90
4	E051610 Passive Fire Protection <i>Emmanuel Annerel -- Department of Structural Engineering and Building Materials</i>	3			A:1	90
5	E053620 Railroads [nl] <i>Jan Mys -- Department of Civil Engineering</i>	3			A:2	90
6	E055320 Ship Behaviour in Shallow and Confined Water <i>Guillaume Delefortrie -- Department of Civil Engineering</i>	3			A:2	90
7	E081830 Performance-based design: Fire Protection of Buildings <i>Bart Merci -- Department of Structural Engineering and Building Materials</i>	3			B:2	90

### 3.2 Broadening Elective Courses

Subscribe to at least 1 broadening elective.

#### 3.2.1 Cluster Internship and Integrated portfolio

Subscribe to maximum 1 course.

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	E099400 Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i>	6			A:J	180
3	E099400 Research Internship <i>Patrick Segers -- Department of Electronics and Information Systems</i>	3			B:J	90
4	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i>	6			A:J	180
5	E098010 Integrated Portfolio [en, nl] <i>Hiep Luong -- Department of Telecommunications and Information Processing</i>	3			B:J	90

#### 3.2.2 Cluster Sustainability and Transition

Subscribe to maximum 2 courses.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E086621 <b>Planning and Transition: Mobility</b> <i>Koos Fransen -- Department of Civil Engineering</i>	3			A:1	90
2	E035421 <b>Sustainable Energy</b> <i>Jan Mertens -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
3	E039060 <b>Sustainable Energy and Rational Use of Energy</b> <i>Filip Strubbe -- Department of Electronics and Information Systems</i>	4			A:2	120
4	E078310 <b>Sustainable Use of Materials: Metals [nl]</b> <i>Kim Verbeken -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:1	90
5	E078320 <b>Sustainable Use of Materials: Plastics and Derived Materials [nl]</b> <i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i>	3			A:2	90
6	E078010 <b>Technology and Environment</b> <i>Luc Martens -- Department of Information Technology</i>	3			A:1	90
7	E078752 <b>Water and Air Quality Management</b> <i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>	4			A:2	120

### 3.2.3 Cluster Safety and Health

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E037830 <b>Basics of Health and Safety at Work for Engineers [nl]</b> <i>Sofie Van Volsem -- Department of Industrial Systems Engineering and Product Design</i>	3			A:1	90
2	E037810 <b>Safety of Electrical and Mechanical Installations [nl]</b> <i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:2	90
3	E092100 <b>Biosystems [nl]</b> <i>Pascal Verdonck -- Department of Electronics and Information Systems</i>	3			A:1	90

### 3.2.4 Cluster Digitalization and Artificial Intelligence

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E076321 <b>Digital Innovation for People and Society [nl]</b>	3			A:2	90
2	E080830 <b>Information Management in Architecture and Construction [nl, en]</b> <i>Paulus Present -- Department of Architecture and Urban Planning</i>	3			A:2	90
3	E016350 <b>Artificial Intelligence</b> <i>Aleksandra Pizurica -- Department of Telecommunications and Information Processing</i>	3			B:2	90
4	E061331 <b>Machine Learning: Learning from Data</b> <i>Joni Dambre -- Department of Electronics and Information Systems</i>	6			A:1	180
5	E045280 <b>Computational Fluid Dynamics</b> <i>Joris Degroote -- Department of Electromechanical, Systems and Metal Engineering</i>	3			A:1	90

### 3.2.5 Cluster Economy and Entrepreneurship

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E076951 <b>Engineering Economy</b> <i>Sofie Verbrugge -- Department of Industrial Systems Engineering and Product Design</i>	6			A:1	180
2	F000083 <b>Macroeconomics [nl]</b> <i>Freddy Heylen -- Department of Economics</i>	6			A:1	180
3	F001022 <b>Dare to Venture</b> <i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>	4			A:2	120
4	E076471 <b>Dare to Start</b> <i>Wouter Haerick -- Department of Information Technology</i>	3			A:2	90
5	F001020 <b>Introduction to Entrepreneurship</b> <i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>	3			A:1	90
6	F001021 <b>Basic Entrepreneurship [nl]</b> <i>Evy Van Lancker -- Department of Marketing, Innovation and Organisation</i>	3	UKV		A:1	90

### 3.2.6 Cluster Law

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study
1	E076621 <b>Principles of Law and Construction Law [nl]</b> <i>Jelle Laverge -- Department of Architecture and Urban Planning</i>	3			A:1	90

2	B001581	Human Rights: Multidisciplinary Perspectives <i>Eva Brems -- Department of European, Public and International Law</i>	5	UKV		A:2	150
3	A005646	Introduction to Business Law [nl] <i>Diederik Bruloet -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i>	3			A:1	90

### 3.2.7 Cluster Operations Management

[Subscribe to maximum 2 courses.](#)

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: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

### 3.2.8 Cluster Psychology and People Management

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	A001900	Introduction to Psychology [nl] <i>Wim Notebaert -- Department of Experimental Psychology</i>	3			A:1	90
2	H002668	Introduction Industrial Psychology [nl] <i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i>	4			A:1	120
3	H001977	Coaching and Diversity [nl] <i>Elisabeth De Schauwer -- Department of Special Education</i>	3	UKV		A:J	90
4	F000551	Business Skills <i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>	4			C:2	120
5	F001012	Leadership for student directors [nl] <i>Stijn Baert -- Department of Economics</i>	3	UKV		A:1	90
6	H002395	Migration and Society: an Interdisciplinary Introduction <i>Robin Vandevordt -- Department of Social Work and Social Pedagogy</i>	5	UKV		A:2	150
7	A005569	Global Minds <i>Amaury Frankl -- Department of Geography</i>	5	UKV		A:2	150

### 3.2.9 Cluster Ethics and Philosophy

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	E075310	Ethics, Engineering and Society [nl] <i>Sepp Segers -- Department of Philosophy and Moral Sciences</i>	3			A:2	90
2	C004009	History and Philosophy of Sciences [nl] <i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>	3			B:2	90
3	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

### 3.2.10 Cluster Communication

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	A003001	Academic English <i>Geert Jacobs -- Department of Linguistics</i>	3	UKV		B:1, A:2	90
2	A003107	Advanced Academic English <i>Geert Jacobs -- Department of Linguistics</i>	3	UKV		A:1, B:2	90

### 3.2.11 Cluster Education

[Subscribe to maximum 2 courses.](#)

Nr	Course	CRDT	Ref	MT1	Session	Study	
1	H002476	Powerful Learning Environments [nl] <i>Bram De Wever -- Department of Educational Studies</i>	6			A:1	180
2	H002477	The Teacher within Class, School and Society [nl] <i>Melissa Tuytens -- Department of Educational Studies</i>	6			A:2	180
3	H002478	The Student: Development and Motivation [nl] <i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i>	6			A:1	180

### 3.2.12 Elective Courses Ghent University

## 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