

Faculty of Engineering and Architecture  
Master of Science in Civil Engineering

Language of instruction: English

Programme version 11

## 1 General Courses 64 credits

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E044940 FEM and Constitutive Material Laws in Structural Engineering<br><i>Diego Lorenzo Allaix -- Department of Structural Engineering and Building Materials</i> | 3    |     | 1   | B:1     | 90    |
| 2  | E040661 Structural Dynamics<br><i>Mia Loccupfier -- Department of Electromechanical, Systems and Metal Engineering</i>   | 5    |     | 1   | B:1     | 150   |
| 3  | E045621 Groundwater and Contaminant Flow<br><i>Herman Peiffer -- Department of Civil Engineering</i>   | 4    |     | 1   | B:1     | 120   |
| 4  | E044311 Structural Stability<br><i>Robby Caspele -- Department of Structural Engineering and Building Materials</i>  | 6    |     | 1   | A:1     | 180   |
| 5  | E045860 Water Management and Environment<br><i>Tom De Mulder -- Department of Civil Engineering</i>  | 5    |     | 1   | B:1     | 150   |
| 6  | E052621 Concrete Structures: Prestressed Concrete and Slabs<br><i>Roman Wan-Wendner -- Department of Structural Engineering and Building Materials</i>             | 6    |     | 1   | A:2     | 180   |
| 7  | E054820 Inland Waterways and Locks<br><i>Tom De Mulder -- Department of Civil Engineering</i>  | 6    |     | 1   | B:2     | 180   |
| 8  | E052210 Geotechnics<br><i>Mahya Roustaei -- Department of Civil Engineering</i>  | 5    |     | 1   | B:2     | 150   |
| 9  | E053560 Specialised Road Engineering and Mobility<br><i>Pieter De Winne -- Department of Civil Engineering</i>   | 5    |     | 1   | B:2     | 150   |
| 10 | E050923 Structural Reliability and Risk Analysis<br><i>Robby Caspele -- Department of Structural Engineering and Building Materials</i>                            | 4    |     | 1   | A:2     | 120   |
| 11 | E054920 Coastal Engineering and Harbour Construction<br><i>Peter Troch -- Department of Civil Engineering</i>  | 6    |     | 2   | B:1     | 180   |
| 12 | E044821 Advanced Bridge and Tunnel Engineering<br><i>Hans De Backer -- Department of Civil Engineering</i>   | 6    |     | 2   | A:1     | 180   |
| 13 | E050100 Design of Civil Structures<br><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<br><i>Evert Lataire -- Department of Civil Engineering</i> | 4    |     | 1   | A:1     | 120   |
| 2  | E055400 Coastal Hydrodynamics<br><i>Peter Troch -- Department of Civil Engineering</i>                         | 3    |     | 2   | A:1     | 90    |
| 3  | E044671 Offshore Foundations<br><i>Bruno Stuyts -- Department of Civil Engineering</i>                         | 4    |     | 2   | A:1     | 120   |

|   |         |  |   |   |     |     |
|---|---------|--|---|---|-----|-----|
| 4 | E054680 | Dredging: Techniques and Processes<br><i>Mahya Roustaei -- Department of Civil Engineering</i> | 5 | 2 | A:2 | 150 |
| 5 | E044666 | Offshore Structures<br><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<br><i>Jan Belis -- Department of Structural Engineering and Building Materials</i>   | 6    |     | 1   | A:1     | 180   |
| 2  | E044902 Conceptual Design<br><i>Bart De Pauw -- Department of Civil Engineering</i>   | 5    |     | 1   | A:2     | 150   |
| 3  | E044571 Non-linear and Plastic Methods of Structural Analysis<br><i>Robby Caspeeel -- Department of Structural Engineering and Building Materials</i> | 3    |     | 2   | A:1     | 90    |
| 4  | E044930 Seismic Design<br><i>Hervé Degée -- Department of Structural Engineering and Building Materials</i>   | 3    |     | 2   | A:2     | 90    |
| 5  | E044631 Glass and Facade Structures<br><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<br><i>Birger Raa -- Department of Industrial Systems Engineering and Product Design</i>                | 6    | a   |     | A:1     | 180   |
| 2  | E004255 Operations Research Models and Methods<br><i>El-Houssaine Aghezzaf -- Department of Industrial Systems Engineering and Product Design</i> | 6    |     |     | A:1     | 180   |
| 3  | E060240 Quality Engineering and Industrial Statistics<br><i>Stijn De Vuyst -- Department of Industrial Systems Engineering and Product Design</i> | 6    |     |     | A:2     | 180   |
| 4  | E076951 Engineering Economy<br><i>Sofie Verbrugge -- Department of Information Technology</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)
- Either 14 credit units from 2 or 3 modules from the following list (in combination with 1 minor)

Subject to approval by the faculty.

At least 6 credit units of elective social courses and at least 6 credit units of technical courses.

### 3.1 Elective Courses Civil Engineering

Subscribe to no less than 6 credit units from the following list. Subject to approval by the faculty.

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E052630 Prefabricated Concrete Constructions<br><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]<br><i>Paulus Present -- Department of Architecture and Urban Planning</i> | 3    |     |     | A:2     | 90    |
| 3  | E050720 Diagnosis and Repair of Buildings<br><i>Stijn Matthys -- Department of Structural Engineering and Building Materials</i>                   | 3    |     |     | A:1     | 90    |
| 4  | E065480 Life Cycle Assessment of Materials and Structures<br><i>Nele De Belie -- Department of Structural Engineering and Building Materials</i>   | 3    |     |     | A:2     | 90    |
| 5  | E051540 Explosions and Industrial Fire Safety<br><i>Filip Verplaetsen -- Department of Structural Engineering and Building Materials</i>           | 6    |     |     | A:1     | 180   |
| 6  | E051610 Passive Fire Protection<br><i>Emmanuel Annerel -- Department of Structural Engineering and Building Materials</i>                          | 3    |     |     | A:1     | 90    |
| 7  | E086621 Planning and Transition: Mobility<br><i>Koos Franssen -- Department of Civil Engineering</i>   | 3    |     |     | A:1     | 90    |
| 8  | E053620 Railroads [nl]<br><i>Jan Mys -- Department of Civil Engineering</i>  | 3    |     |     | A:2     | 90    |
| 9  | E055320 Ship Behaviour in Shallow and Confined Water<br><i>Guillaume Delefortrie -- Department of Civil Engineering</i>                            | 3    |     |     | A:2     | 90    |
| 10 | E063671 Biomaterials and Tissue Engineering<br><i>Peter Dubrueel -- Department of Organic Chemistry</i>  | 5    |     |     | A:1     | 150   |

|    |         |  |   |  |     |     |
|----|---------|--|---|--|-----|-----|
| 11 | E063682 | Biomechanics<br><i>Charlotte Debbaut -- Department of Electronics and Information Systems</i>                    | 6 |  | A:1 | 180 |
| 12 | E092623 | Modelling of Physiological Systems<br><i>Patrick Segers -- Department of Electronics and Information Systems</i> | 5 |  | A:2 | 150 |
| 13 | E099400 | Research Internship<br><i>Patrick Segers -- Department of Electronics and Information Systems</i>                | 6 |  | A:J | 180 |
| 14 | E099400 | Research Internship<br><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]<br><i>Patrick Segers -- Department of Electronics and Information Systems</i>                  | 6    |     |     | A:J              | 180   |
| 2  | E098010 Integrated Portfolio [en, nl]<br><i>Hiep Luong -- Department of Telecommunications and Information Processing</i>  | 6    |     |     | A:J              | 180   |
| 3  | E098010 Integrated Portfolio [en, nl]<br><i>Hiep Luong -- Department of Telecommunications and Information Processing</i>  | 3    |     |     | B:J              | 90    |
| 4  | E037810 Safety of Electrical and Mechanical Installations [nl]<br><i>Jos Knockaert -- Department of Electromechanical, Systems and Metal Engineering</i>         | 3    |     |     | A:2              | 90    |
| 5  | E039060 Sustainable Energy and Rational Use of Energy<br><i>Jeroen Beeckman -- Department of Electronics and Information Systems</i>                             | 4    |     |     | A:2              | 120   |
| 6  | E078310 Sustainable Use of Materials: Metals [nl]<br><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]<br><i>Lode Daelemans -- Department of Materials, Textiles and Chemical Engineering</i> | 3    |     |     | A:2              | 90    |
| 8  | E078010 Technology and Environment<br><i>Luc Martens -- Department of Information Technology</i>   | 3    |     |     | A:1              | 90    |
| 9  | E078752 Water and Air Quality Management<br><i>Joris Thybaut -- Department of Materials, Textiles and Chemical Engineering</i>                                   | 4    |     |     | A:2              | 120   |
| 10 | E092100 Biosystems [nl]<br><i>Pascal Verdonck -- Department of Electronics and Information Systems</i>   | 3    |     |     | A:1              | 90    |
| 11 | E075310 Ethics, Engineering and Society [nl]<br><i>Seppie Segers -- Department of Philosophy and Moral Sciences</i>  | 3    |     |     | A:2              | 90    |
| 12 | C004009 History and Philosophy of Sciences [nl]<br><i>Maarten Van Dyck -- Department of Philosophy and Moral Sciences</i>  | 3    |     |     | A:1 <sup>a</sup> | 90    |
| 13 | E076320 The Information Society and ICT [nl]<br><i>Erik Mannens -- Department of Electronics and Information Systems</i>   | 3    |     |     | A:2              | 90    |
| 14 | A001900 Introduction to Psychology [nl]<br><i>Wim Notebaert -- Department of Experimental Psychology</i>   | 3    |     |     | A:1              | 90    |
| 15 | H001977 Coaching and Diversity [nl]<br><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]<br><i>Stef Craps -- Department of Literary Studies</i>                                  | 6    | UKV |     | A:1              | 180   |
| 17 | E076450 Basic Entrepreneurship [nl]<br><i>Yannick Dillen -- Department of Marketing, Innovation and Organisation</i>   | 3    | UKV |     | A:1              | 90    |
| 18 | A005646 Introduction to Corporate Law [nl]<br><i>Diederik Bruloet -- Department of Interdisciplinary Study of Law, Private Law and Business Law</i>              | 3    |     |     | A:1              | 90    |
| 19 | E076460 Dare to Venture<br><i>Johan Verrue -- Department of Marketing, Innovation and Organisation</i>   | 4    |     |     | A:2              | 120   |
| 20 | E076471 Dare to Start<br><i>Wouter Haerick -- Department of Information Technology</i>   | 3    |     |     | A:2              | 90    |
| 21 | E076621 Principles of Law and Construction Law [nl]<br><i>Jelle Laverge -- Department of Architecture and Urban Planning</i>                                     | 3    |     |     | A:1              | 90    |
| 22 | E076951 Engineering Economy<br><i>Sofie Verbrugge -- Department of Information Technology</i>  | 6    |     |     | A:1              | 180   |

|    |         |  |   |     |          |     |
|----|---------|--|---|-----|----------|-----|
| 23 | E076431 | Introduction to Entrepreneurship<br><i>Petra Andries -- Department of Marketing, Innovation and Organisation</i>               | 3 |     | A:1      | 90  |
| 24 | H002169 | Powerful Learning Environments [nl]<br><i>Bram De Wever -- Department of Educational Studies</i>                               | 6 |     | A:1      | 180 |
| 25 | H002196 | Classroom Management and Reflection [nl]<br><i>Tijs Rotsaert -- Department of Educational Studies</i>                          | 4 |     | A:2      | 120 |
| 26 | H002197 | The Teacher within School and Society [nl]<br><i>Melissa Tuytens -- Department of Educational Studies</i>                      | 4 |     | A:1      | 120 |
| 27 | H002198 | Psychology of Adolescence [nl]<br><i>Wim Beyers -- Department of Developmental, Personality and Social Psychology</i>          | 4 |     | A:1      | 120 |
| 28 | F000083 | Macroeconomics [nl]<br><i>Freddy Heylen -- Department of Economics</i>   | 6 |     | A:1      | 180 |
| 29 | H001010 | Introduction Industrial Psychology [nl]<br><i>Bart Wille -- Department of Developmental, Personality and Social Psychology</i> | 5 |     | A:2      | 150 |
| 30 | F000551 | Business Skills<br><i>Mieke Audenaert -- Department of Marketing, Innovation and Organisation</i>                              | 4 |     | C:2      | 120 |
| 31 | A003001 | Academic English<br><i>Geert Jacobs -- Department of Linguistics</i>   | 3 | UKV | B:1, A:2 | 90  |
| 32 | E075800 | Communication [nl]<br><i>Leen Pollefliet -- Department of Information Technology</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 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 |