

## Master's Dissertation (E091103)

**Course size** *(nominal values; actual values may depend on programme)*

**Credits 24.0**

**Study time 720 h**

### Course offerings and teaching methods in academic year 2023-2024

A (Year)	Dutch	Gent	master's dissertation
B (Year)	English	Gent	master's dissertation

### Lecturers in academic year 2023-2024

Offered in the following programmes in 2023-2024	crdts	offering
Bridging Programme Master of Science in Electrical Engineering(main subject Communication and Information Technology )	24	B
Bridging Programme Master of Science in Electromechanical Engineering(main subject Control Engineering and Automation)	24	B
Bridging Programme Master of Science in Electromechanical Engineering(main subject Electrical Power Engineering)	24	B
Bridging Programme Master of Science in Electrical Engineering(main subject Electronic Circuits and Systems )	24	B
Bridging Programme Master of Science in Industrial Engineering and Operations Research(main subject Manufacturing and Supply Chain Engineering)	24	B
Bridging Programme Master of Science in Electromechanical Engineering(main subject Maritime Engineering)	24	B
Bridging Programme Master of Science in Electromechanical Engineering(main subject Mechanical Construction)	24	B
Bridging Programme Master of Science in Electromechanical Engineering(main subject Mechanical Energy Engineering)	24	B
Bridging Programme Master of Science in Industrial Engineering and Operations Research(main subject Transport and Mobility Engineering)	24	B
Bridging Programme Master of Science in Chemical Engineering	24	B
Bridging Programme Master of Science in Civil Engineering	24	B
Bridging Programme Master of Science in Computer Science Engineering	24	B
Bridging Programme Master of Science in Engineering Physics	24	B
Bridging Programme Master of Science in Fire Safety Engineering	24	B
Bridging Programme Master of Science in Sustainable Materials Engineering	24	B
Bridging Programme Master of Science in Urbanism and Spatial Planning	24	A
Master of Science in Engineering: Architecture(main subject Architectural Design and Construction Techniques)	24	A
Master of Science in Electrical Engineering (main subject Communication and Information Technology )	24	B
Master of Science in Electromechanical Engineering(main subject Control Engineering and Automation)	24	A
Master of Science in Electromechanical Engineering(main subject Control Engineering and Automation)	24	B
Master of Science in Electromechanical Engineering(main subject Electrical Power Engineering)	24	A
Master of Science in Electromechanical Engineering(main subject Electrical Power Engineering)	24	B
Master of Science in Electrical Engineering (main subject Electronic Circuits and Systems)	24	B
Master of Science in Industrial Engineering and Operations Research(main subject Manufacturing and Supply Chain Engineering)	24	B
Master of Science in Electromechanical Engineering(main subject Maritime Engineering)	24	A

Master of Science in Electromechanical Engineering(main subject Maritime Engineering)	24	B
Master of Science in Electromechanical Engineering(main subject Mechanical Construction)	24	A
Master of Science in Electromechanical Engineering(main subject Mechanical Construction)	24	B
Master of Science in Electromechanical Engineering(main subject Mechanical Energy Engineering)	24	A
Master of Science in Electromechanical Engineering(main subject Mechanical Energy Engineering)	24	B
Master of Science in Industrial Engineering and Operations Research(main subject Sustainable Mobility Analytics)	24	B
Master of Science in Industrial Engineering and Operations Research(main subject Transport and Mobility Engineering)	24	B
Master of Science in Engineering: Architecture(main subject Urban Design and Architecture)	24	A
Master of Science in Biomedical Engineering	24	A
Master of Science in Biomedical Engineering	24	B
Master of Science in Chemical Engineering	24	A
Master of Science in Chemical Engineering	24	B
Master of Science in Civil Engineering	24	A
Master of Science in Civil Engineering	24	B
Master of Science in Computer Science Engineering	24	A
Master of Science in Computer Science Engineering	24	B
Master of Science in Electrical Engineering	24	A
Master of Science in Engineering Physics	24	A
Master of Science in Engineering Physics	24	B
Master of Science in Fire Safety Engineering	24	B
Master of Science in Industrial Engineering and Operations Research	24	A
Master of Science in Materials Engineering	24	A
Master of Science in Sustainable Materials Engineering	24	B
Master of Science in Urbanism and Spatial Planning	24	A

#### Teaching languages

English, Dutch

#### Keywords

Research report, research methods and techniques

#### Position of the course

The master's programme is completed with the master's dissertation. The master's dissertation is a workpiece in which the student is able to apply his/her advanced analytical and problem-solving abilities to bring a research or artistic project to successful completion at an academic level.

The result reflects the student's general critical and reflective attitude or his/her disposition towards research. The master's dissertation contributes to the realisation of a number of desired programme competences (cf. <http://www.ugent.be/ea/nl/onderwijs/administratie/Opleidingscompetenties/overzicht.htm>).

The faculty's modalities for the master's dissertation are available via the faculty's website: <http://www.ugent.be/ea/nl/faculteit/diensten/studentenadministratie/masterproef> (in Dutch), <http://www.ugent.be/ea/en/education/master-dissertation> (in English)

#### Contents

The master's dissertation is a research project, consisting of the execution of a subject (literature search, topical study, research and the reflection on the research, experiments, experimentations, designs, simulations, results, conclusions,...) and a presentation with oral defence. One interim report is also expected. While executing the master's dissertation, the student will regularly meet with his/her supervisors. The subject and contents of the master's dissertation can be determined in two ways. Supervisors can determine and announce possible subjects via the electronic platform. Possible subjects include

the definition of the problem and goal. Students can choose such a subject. Students are also free to propose their own master's dissertation's subject, by formulating a subject and finding a supervisor. Either way, the subject of the master's dissertation is always only determined after joint consultation between the student and the dissertation supervisor(s). The supervisor will concretize the desired final competences.

#### **Initial competences**

At the start of the master's dissertation, a basic knowledge is expected in the field of research. The student has an advanced knowledge of and an insight into the field in general, and in the specialization in particular. Next to this, the student can independently look up and process information, can formulate research questions, can report and discuss on scientific findings etc. The student will further develop these competences during the execution of the master's dissertation.

#### **Final competences**

- 1 Define, study and analyse the research problem in a specific domain.
- 2 Find an appropriate methodology, in accordance with the applicable scientific norms of the specific field of study.
- 3 Critically analyse, formulate, study, execute and/or process different aspects in the execution of research (literature search, topical study, research and the reflection on the research, experiments, experimentations, designs, simulations, results, conclusions,...).
- 4 Render and synthesise the results concisely.
- 5 Communicate adequately on the research, the results and problems, present and found them, both to colleagues as to laypeople.
- 6 Self-assessment with adequate and critical self-correction and objectivity.
- 7 Give proof of independency, motivation, dedication, drive to innovation and creativity, initiative and perseverance.

#### **Conditions for credit contract**

This course unit cannot be taken via a credit contract

#### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

#### **Teaching methods**

Master's dissertation

#### **Learning materials and price**

More information on the outline of the master's dissertation can be found on the faculty's website: <http://www.ugent.be/ea/nl/faculteit/diensten/studentenadministratie/masterproef> (in Dutch), <http://www.ugent.be/ea/en/education/master-dissertation> (in English)

#### **References**

#### **Course content-related study coaching**

The responsibility for the supervision of the master's dissertation rests with one or several dissertation supervisors, including at least one active tenured academic staff member or a doctor-assistant at Ghent University or a visiting professor or a researcher who holds the doctor's title as a permanent or temporary member of staff at Ghent University or the Research Foundation Flanders (FWO). It is the supervisor who proposes the advisory committee, consisting of at least two persons, including the supervisor. This advisory committee will guide the student during the project. In addition to regular workshops, at least one interim evaluation is obligatory, in which the student gives an oral report on the progress of the work, in the presence of the counsellors. This interim evaluation has no effect on the final mark of the master's dissertation, but gives the counsellors the chance to adjust the student's approach if needed.

#### **Assessment moments**

continuous assessment

#### **Examination methods in case of periodic assessment during the first examination period**

#### **Examination methods in case of periodic assessment during the second examination period**

### **Examination methods in case of permanent assessment**

Oral assessment, Assignment

### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

### **Extra information on the examination methods**

The master's dissertation is evaluated on the basis of the written report as well as on the public defence and presentation of the dissertation. The master's dissertation is evaluated by the assessment committee. This assessment committee consists of at least three members, including one or two supervisors, and one to three commissioners. The assessment committee differs in at least one member from the advisory committee. At least one of the commissioners has not been involved in the master's dissertation process.

### **Calculation of the examination mark**

The master's dissertation is evaluated by means of a standard assessment form (<http://www.ugent.be/ea/nl/faculteit/diensten/studentenadministratie/masterproef> (in Dutch), <http://www.ugent.be/ea/en/education/master-dissertation> (in English)).

The calculation of the examination mark is to be determined by each supervisor and will be put in the electronic platform Plato, with default marks:

- 30% of the marks: the year's work (practical and personal aspects)
- 50% of the marks: the master's dissertation or the product (scientific aspects)
- 20% of the marks: the assessment of the defence (10% for the presentation (content, structure, lay-out) and presentation techniques; and 10% for answering the questions).

If the score on one of the three evaluation categories is 7/20 or less than 7/20, the committee **can** conclude, by consensus, that the student can no longer pass the entire master's dissertation. If that is the case, and if the final mark according to the calculation percentages is 10/20 (or more), the final mark will be reduced to the highest failing mark, 9/20. If these special conditions apply, a specific argumentation and a fair justification is required based on the final competences of the master's dissertation.