GHENT UNIVERSITY

Course Specifications

From the academic year 2024-2025 up to and including the academic year

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 2024-2025

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

Lecturers in academic year 2024-2025

Offered in the following programmes in 2024-2025	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 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	24	A

Construction)		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 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

master's dissertation, 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 applies advanced analytical and synthetic problem-solving skills to independently complete a research project successfully. The result reflects the student's general critical-reflective attitude and research mindset.
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 topic and content of the master's dissertation are proposed by the supervisor, possibly in collaboration with the industry. Student can also formulate a topic. Each topic is reviewed by the programme and assigned according to the faculty's procedure, as outlined in the faculty's master's dissertation regulations (https://www.ugent.be/ea/nl/faculteit/studentenadministratie/masterproef).
The master's dissertation is the final project that includes the development of the topic (literature study, critical formulation of the research question, documentation of research, experiments, designs, simulations, test setups, results, conclusions, extended abstract, etc.) and a presentation with an oral defense. Interim reporting is also expected.

Initial competences

The student has the competencies of a Bachelor of Science in Engineering,

specifically advanced knowledge and understanding of engineering sciences in general, and of the discipline/specialization of the programme in particular.

Final competences

1 Independently search for relevant and up-to-date information and critically process it.
2 Formulate a research question, starting from a complex, scientific problem within the own programme or specialization.
3 Apply a creative and/or innovative, appropriate research methodology.
4 Applying advanced knowledge of one's own engineering discipline in an integrated manner to the problem at hand.
5 Apply problem-solving thinking under uncertain and/or conflicting constraints, with attention to the appropriate level of abstraction.
6 Critically interpret and validate own results, write them down, summarize them, and clearly communicate them orally in English, while substantiating the decisions made.
7 Work and collaborate in a professional manner.
8 Reflect on the own research topic and chosen methodology from various perspectives such as sustainability, international context, and ethical implications.
9 Critically reflect on the own thinking and actions, handle feedback and the limits of the own competencies in a conscious and responsible manner.
10 Scientific integrity and ethical conduct.

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

Study material

None

References

Course content-related study coaching

The supervision of the master's dissertation throughout the year is carried out by the dissertation supervisors. The dissertation advisory committee consists of at least two members, including one or more supervisors. The conditions and modalities for the composition of the committee are determined and clarified in the faculty's master's dissertation regulations.

The student and the dissertation advisory committee consult regularly about the substantive, formal, and practical aspects. The student reports regularly on the progress made, and the dissertation advisory committee provides regular interim feedback.

The supervision process is agreed upon in mutual consultation, as specified and clarified in the faculty's master's dissertation regulations.

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, Participation, Presentation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

The student is evaluated on the process, the product, and the master's dissertation exam.

Both the dissertation advisory committee and the assessment committee are responsible for the assessment:

- The process assessment is done by the dissertation advisory committee and focuses on interpersonal and intrapersonal competencies;
- The product assessment is done by the dissertation advisory committee and the assessment committee and includes, among other things, the technical-scientific aspects of the master's dissertation (master's dissertation and/or practical realization)
- The master's dissertation exam (presentation and answering questions) is assessed by the assessment committee.

Calculation of the examination mark

The master's dissertation is evaluated by means of an electronic evaluation form in Plato and a descriptive assessment framework ('rubric'), available on the faculty's website.

The three evaluation categories are weighted in the final score as follows:

- 30% of the marks: process evaluation
- 30% of the marks: product evaluation
- 40% of the marks: master's dissertation exam

If the mark on one of the three evaluation categories is 8/20 or less than 8/20, the dissertation advisory committee and the assessment 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 weighting factors 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.