MASTER OF SCIENCE IN COMPUTER SCIENCE ENGINEERING

120 ECTS CREDITS - LANGUAGE: ENGLISH

The Faculty of Engineering and Architecture (FEA) offers most of its Engineering programmes at Master's level in English. This underlines the international ambition of the faculty, as well as the importance of an international education and multiple language skills for students.

WHAT

The Master of Science in Computer Science Engineering trains engineers to apply information technology through socially and economically relevant applications in a creative and professional manner. These applications range from apps for mobile devices, artificial intelligence, and embedded systems, to scientific computing for supercomputers. A Computer Science Engineering graduate has a broad basic knowledge and has the creative skills to conceive, design, build, and exploit information processing systems. This knowledge entails both hardware and software. Computer science engineers use specific models, methods, and techniques that allow them to control the complexity of modern applications. They will take into account customer requirements, environmental and societal impact, economic reality, safety requirements, ergonomics, etc. The programme closely interacts with existing research programmes in various university labs and in the IMEC research institute. Students will participate in ongoing research throughout their study. This will teach them the skills required to carry out their own scientific research. Finally, we ensure that graduates also acquire non-specialised and transferable skills. In addition to this, the programme also stimulates the development of soft skills, such as team work, effective communication, project management, etc. These skills are acquired through the execution of various projects throughout the entire programme.

STRUCTURE

In its entirety, the Computer Science Engineering programme consists of two phases. The first phase is a three-year programme leading to the Bachelor's degree of Computer Science Engineering. The second phase is a two-year programme leading to the Master's degree in Computer Science Engineering.
In the Bachelor's programme (180 credits), the first year-and-a-half covers a broad training in science and engineering. What follows is a specialised training in the fundamentals of computer science. This curricular structure ensures that our graduates benefit from a combination of a broad technical training and a specialised computer science training. The Bachelor's degree gives access to a range of Master's programmes, including the Master of Science in Computer Science Engineering.
The Master's programme is divided into two equal 60 ECTS components. Whereas the first part consists of mandatory course units, the second part consists of elective course units: a twenty-four credits worth Master's dissertation, and thirty-six credits worth of course units. The latter can either consist of a major in Artificial Intelligence, Data Engineering, Cybersecurity or Internet-of-Things/Robotics, or a minor in Industrial Engineering or in Biosystems. It can also be chosen freely by the student. This flexibility in the curriculum allows students to give expression to their personal study interests.
Students are encouraged to make use of this opportunity to do preparatory work to kickstart their own business through Dare to Venture, which is the local student-entrepreneurship project. Similarly, students can take a range of specialist course units as preparation for doctoral studies.

LABOUR MARKET

Our programme trains students to design the complex information processing systems that are at the core of our modern information society. Since information technology is only a means to a goal, graduates will have to get familiar with different application domains (such as health care, finances, production, accounting, ...) to make the right design decisions. Graduates start as developer, but will move to higher positions quickly, such as those of designer, project leader, director ... The students' broad education and their ability to deal with complex situations and challenging engineering tasks will help them throughout their careers to perform effectively and to take up leading positions in society.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

1 **Rechtstreeks:**
- Bachelor in de ingenieurswetenschappen, afstudeerrichting: computerwetenschappen
- Bachelor in de ingenieurswetenschappen: computerwetenschappen

2 **Rechtstreeks, na check door de inrichtende faculteit van formele toelatingsvereisten:**
- Bachelor in de informatica, met minor elektrotechniek en telecommunicatie
- Bachelor in de ingenieurswetenschappen, afstudeerrichting: computerwetenschappen, met nevenrichting elektrotechniek

3 **Na het met succes voltooien van een voorbereidingsprogramma:**

aantal studiepunten te bepalen door de faculteit
- Bachelor in de computerwetenschappen

4 **Op voorwaarde van toelating door de inrichtende faculteit: na het met succes voltooien van een voorbereidingsprogramma:**

18 SP
- Bachelor in de informatica, met minor beveiliging en parallelle systemen

aantal studiepunten te bepalen door de faculteit
- Bachelor in de informatica, met een andere minor dan elektrotechniek en telecommunicatie of zonder minor
- Bachelor in de ingenieurswetenschappen, afstudeerrichting: computerwetenschappen, met een andere nevenrichting dan elektrotechniek
- Bachelor in de ingenieurswetenschappen, afstudeerrichting: elektrotechniek, met nevenrichting computerwetenschappen

5 **Rechtstreekse toelating voor het volgen van een brugprogramma (horizontale instroom):**

a opleidingen nieuwe structuur:
- Master in de industriële wetenschappen: elektronica en ICT: multimedia en informatietechnologie
- Master in de industriële wetenschappen: elektronica en ICT: ICT
- Master in de industriële wetenschappen: elektronica-ICT, afstudeerrichting: ingebedde systemen
- Master in de industriële wetenschappen: informatica

b opleidingen oude structuur:
- Industrieel ingenieur in elektronica, optie informatie- en communicatietechnieken
- Industrieel ingenieur in informatica

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

Students who wish to enrol for the Master of Science in Computer Science Engineering can enter the programme without any prerequisites if they hold the following diploma: an academic diploma of Bachelor (or Master) of Science in Engineering (university level, minimum three years), with the main subject in Computer Science Engineering and/or a Bachelor (or Master) of Science in Informatics or an equivalent to this.

Admission can only be granted after an individual application procedure. The Study Programme Committee will make the final decision whether to accept the application or not. The Study Programme Committee can decide that students need to follow a preparatory course or an individual master's programme, for instance for students with another diploma of Bachelor or Master.

Information on admission requirements and the administrative procedure for admission on the basis of a diploma obtained abroad, can be found on the following page: www.ugent.be/prospect/en/administration/enrolment-or-registration.

LANGUAGE REQUIREMENTS

Language requirements	Dutch: no language requirements English: CEFR level B2

The language requirements for this study programme can be found on: www.ugent.be/languagerequirements

PRACTICAL INFORMATION

Study programme

studiekiezer.ugent.be/master-of-science-in-computer-science-engineering-en/programma

Information sessions

Graduation Fair

afstudeerbeurs.gent/en/students/further-studies

Open Days

20 April 2023 17u00 - 19u00 - Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33, Gent

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Enrolling institution

Information on enrolment at Ghent University.

Application Deadline (for International degree students)

For students who **need a visa**: before 1st of April
For students who **do not need a visa**: before 1st of June
Read more

Tuition fee

More information is to be found on: www.ugent.be/tuitionfee

Learning path counsellor
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Contact (for international degree students)
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