MASTER OF SCIENCE IN COMPUTER SCIENCE ENGINEERING

MAJORS: ARTIFICIAL INTELLIGENCE – EMBEDDED SYSTEMS / MINORS: INDUSTRIAL ENGINEERING – BIOSYSTEMS

120 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: MASTER OF SCIENCE

COURSE CONTENT

The Master of Science in Computer Science Engineering trains engineers to creatively and professionally apply information technology through socially and economically relevant applications. These applications range from apps for mobile devices, to artificial intelligence, embedded systems, and 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 the requirements of the customer, the environmental and societal impact, the 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 during their study. This will teach them the skills required to carry out personal scientific research.

Finally, we ensure that graduates also acquire non-specialised and transferrable 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.

COURSE STRUCTURE

The computer science engineering education consists of two phases. The first phase is a three year programme leading to the degree of bachelor of science in computer science engineering. The second phase is a two year programme leading to the degree of master of science in computer science engineering. The bachelor's programme consists of 180 credits. Of this programme, the first year and a half offers a broad education in science and engineering. This is followed by a specialised education in the fundaments of computer science. This structure ensures that a graduate benefits 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 split into two parts of 60 credits each. The first part consists of compulsory courses. The second part consists of elective courses: a master's dissertation of 24 credits, and 36 credits of coursework. This coursework can either consist of a major in Artificial Intelligence or Embedded Systems, or a minor in Industrial Engineering or Biosystems, or it can be freely picked by the student. This flexibility allows students to give expression to their personal study interests. Students are encouraged to use this flexibility to do preparatory work to kickstart their own business through Dare to Think, which is the local student-entrepreneurship project. Similarly, students can take a range of specialist courses as preparation for doctoral studies.

CAREER PERSPECTIVES

The Master of Science in Computer Science Engineering 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, financial, production, accounting, …) to make the right design decisions.

Graduates start as developer, but will quickly move to higher positions, such as those of designer, project leader, director … The students' broad education and their ability to deal with complex situations will help them throughout their careers to function effectively and to take leading positions in society.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:
– Ba ingenieurswetenschappen: computerwetenschappen
– Ba ingenieurswetenschappen: afstudeerrichting computerwetenschappen, nevenrichting elektrotechniek
– Ba informatica, minor elektrotechniek en telecommunicatie

Rechtstreeks: (naar brugprogramma – 120 studiepunten)
– Ma industriële wetenschappen:
  – elektronica-ICT, afstudeerrichting ICT
  – elektronica-ICT, afstudeerrichting multimedia en informatietechnologie (MIT)
  – elektronica-ICT, afstudeerrichting ingebedde systemen
  – informatica

Via voorbereidingsprogramma: (18 studiepunten)
– Ba informatica, minor beveiliging en parallelle systemen
– Ba informatica
– Ba computerwetenschappen

Via verkorte bachelor:
– (andere) Ba ingenieurswetenschappen (incl. Ba ingenieurs-wetenschappen: architectuur)
– Ba ingenieurswetenschappen: afstudeerrichting computerwetenschappen, met andere nevenrichting dan elektrotechniek
– Ba ingenieurswetenschappen: afstudeerrichting elektrotechniek, nevenrichting computerwetenschappen
– Ba ingenieurswetenschappen: afstudeerrichting werktuigkunde, nevenrichting computerwetenschappen
– Ba bio-ingenieurswetenschappen (alle)
– Ba industriële wetenschappen (alle)
– Ba in Engineering Technology (alle)
– Ba ingenieurswetenschappen (KMS)

Als je één van de bovenstaande diploma's hebt, kan je een pakket vrijstellingen aanvragen binnen de Bachelor of Science in de ingenieurswetenschappen: afstudeerrichting computer-wetenschappen. Je neemt hiervoor contact op met de studietrajectbegeleider.

TAAL
Je voldoet aan de taalvoorwaarden op basis van je Vlaams diploma.

PRAKTISCHE INFORMATIE

Studieprogramma:
https://studiegids.ugent.be
> faculteiten > opleidingstypes > ga naar de opleiding van je keuze

Alternatieve trajecten
Meer informatie over voorbereidings- en brugprogramma's op www.ugent.be/ea
volg > alles voor toekomstige studenten > voor wie al een diploma heeft

Infomomenten
Masterbeurs
www.ugent.be/masterbeurs
Infosessie
22 april 2020 - 17 u.-19 u. doorlopend, Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33 - Foyer
www.ugent.be/nl/studeren/masteropleidingen

Contact
Trajectbegeleiding:
studietrajectir.ea@ugent.be

Meer info
Afdeling Studieadvies – Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33, 9000 Gent, T 09 331 00 31
studieadvies@ugent.be – www.ugent.be/studieadvies

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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.

LANGUAGE
More information regarding the required knowledge of English:
www.ugent.be/languagerequirements

PRACTICAL INFORMATION

Study programme
www.ugent.be/coursecatalogue
> by Faculty > Programme types > select your programme

Application deadline for international students
– for students who need a visa: 1st of March
– for students who do not need a visa: 1st of June
www.ugent.be/deadline

Enrolling institution
Ghent University

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

Contact
Faculty of Engineering and Architecture
International Relations Officer – Degree students
Annelies Vermeir – annelies.vermeir@ugent.be
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Last update: January 2020.

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