

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

MAIN SUBJECTS: ELECTRONIC CIRCUITS AND SYSTEMS – COMMUNICATION AND INFORMATION TECHNOLOGY
MINORS: PHOTONICS ENGINEERING – OPERATIONS MANAGEMENT – BIOSYSTEMS

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

COURSE CONTENT

The Master of Science in Electrical Engineering offers an in-depth training in the domains of electrical and electronics engineering and students can choose a focus on either Electronic Circuits and Systems (ECS) or Communication and Information Technologies (CIT).

The main focus is on analysing, designing, fabrication and testing of smart devices and the internet-of-things. An electrical engineer shapes the strong evolution towards an environment where everything is 'smart' and where all these smart devices are connected and exchange information. Examples are smart cities, smart mobility, smart health care, smart grids, smart buildings, wearable electronics, robotics, sensor systems, devices improving safety and security, etc. The Master of Science in Electrical Engineering is the only course that covers the hardware aspects of all these smart devices.

The programme concentrates on analogue and digital systems and communication networks, covering both hardware and software aspects but with a clear focus on electronic components and design at the circuit and system level. Both on an individual basis and as part of a team, masters of electrical engineering are capable of efficiently and methodically developing complex electronic (communications) systems for a broad field of applications, starting from the conception and analysis over the design, implementation, testing and up to management of such systems.

Our designs are based on a firm theoretical foundation and technological knowledge and are conceived by making appropriate use of state-of-the-art computer-aided design tools. Given the acquired research attitudes and competences, masters of electrical engineering are able to support creative or innovative (r)evolutions in industry and in scientific research.

As for all Master of Science in Engineering programmes, this curriculum also provides a sufficiently broad non-specialist knowledge in other engineering disciplines and in several economical, juridical, deontological and societal aspects. On top of the theoretical base, each course year contains practical projects which are gradually enhancing the student's skills in effectively collaborating in teams and acting as skilled team leaders in an industrial research environment.

COURSE STRUCTURE

The programme consists of two phases: the first three-year programme leads to a degree of bachelor of science in engineering. The subsequent two-year programme awards a degree of master in electrical engineering.

Throughout the master's programme, each student may choose to either deepen or broaden his or her scope by compiling a personalised programme based on a wide range of elective courses or by including a (broadening) Minor into the programme.

CAREER PERSPECTIVES

The Master of Science in Electrical Engineering focuses specifically on research and development, as well as on creation and design in the field of electronics and communication technology.

Many companies only accept electrical engineers for the development of the smart systems they are producing and are therefore constantly looking for our highly trained students. Electrical engineers are mainly responsible for the design and development of data, image and speech processing systems, measurement and sensor technology, robot design, as well as the future ICT infrastructure, including wired, wireless, satellite and vehicular communication systems.

Our graduates thrive in large multinational electronics, ICT and telecommunication companies, as well as a wide range of small and medium-sized enterprises active in the forefront of technology or consultancy. Their degree is highly appreciated for the broad scope of the programme and its strong bond to state-of-the-art research. The balanced mix between hardware and embedded software enables new graduates to play key roles in the development of hardware for smart devices, the future internet, and the internet-of-things and to have an impact on very important evolutions in society such as green electronics, smart health care and ambient assisted living.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:

- Ba ingenieurswetenschappen: elektrotechniek
- Ba ingenieurswetenschappen: afstudeerrichting elektrotechniek
- Ba ingenieurswetenschappen, afstudeerrichting: elektronica en informatietechnologie

Rechtstreeks: (naar brugprogramma - 120 studiepunten)

- Ma industriële wetenschappen: elektronica-ICT, afstudeerrichting ontwerptechnieken
- Ma industriële wetenschappen: elektronica-ICT, afstudeerrichting elektronica
- Ma industriële wetenschappen: elektronica-ICT (zonder afstudeerrichting)
- Ma industriële wetenschappen: elektronica-ICT, afstudeerrichting ICT
- Ma industriële wetenschappen: elektrotechniek
- Ma industriële wetenschappen: energie
opleiding(en) oude structuur:
 - industrieel ingenieur elektronica

Via verkorte bachelor:

- (andere) Ba ingenieurswetenschappen (incl. Ba ingenieurswetenschappen: architectuur)
 - Ba industriële wetenschappen: elektronica-ICT (alle)
 - Ba industriële wetenschappen, afstudeerrichting: elektronica-ICT
 - 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: elektrotechniek. Je neemt hiervoor contact op met de trajectbegeleider

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

Opleidingsgebonden infosessie

19 april 2017 - 17 u.-19 u. doorlopend, Campus Ufo, Ufo,

Sint-Pietersnieuwstraat 33 - Foyer

www.ugent.be/nl/studeren/masteropleidingen

Contact

Trajectbegeleiding:

studietrajectplateau.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 Electrical 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 of three years), with the main subject in Electrical Engineering 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/language/requirements

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
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