MASTER OF SCIENCE IN ENGINEERING PHYSICS

120 ECTS CREDITS - LANGUAGE: ENGLISH

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

INHOUD

Ghent University is the only university in Flanders to offer a Master of Science in Engineering Physics. Alumni of this master have a solid physical knowhow and the necessary skills to have a leading role in groundbreaking physics research. At the same time they have the engineering skills that make them wanted as innovators and developers in industry, research institutes, and universities. The engineering component of the master's programme develops skills such as analysis, design and optimisation of existing and new systems, products, machines, and materials. This involves approximating physical reality by system descriptions ranging from simple rules of thumb to expert systems. The physical component follows a reductionist approach where experiment and mathematical modelling aim at understanding and reducing physics to its basics, and deriving its governing equations. Despite the more philosophical approach, a rigorous attitude remains essential and all physical theory has to withstand experimental validation.

STRUCTUUR

The regular programme leading to a master's degree in engineering physics starts with a three year bachelor and is completed by a two year master. Several intakes from other bachelors or masters, both domestic and foreign, are available. The two year master's programme itself has a number of obligatory courses developing a strong basis in the major fields of engineering physics. With a selected number of optional courses the student can then acquire an interesting skillset in more advanced topics in engineering physics, ranging from quantum mechanical modeling to the physics of photonic and electronic components. In the first master year, a physics project with an industrial finality needs to be undertaken with a focus on sustainability and intellectual property. A research oriented master's dissertation completes the programme in the second master year.

ARBEIDSMARKT

The Master of Science in Engineering Physics trains students to tackle engineering challenges with a broad skillset in physics. The broad scope of the Master and its eight advanced elective courses assure that its alumni are ready to do innovate work in a broad range of companies and research centers in all areas where physics is required or essential. Graduated physics engineers excel in multidisciplinary research due to their broad expertise and inquiring attitude. Graduates find their way to companies working in photonics, nanoscale sciences, nuclear physics and technology, electronics, materials or bio-medical engineering. Some Engineering Physics alumni work in consultancy or have jobs at government institutes. After a few years they can be found in management functions or as leading researchers and professors.

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FACULTY OF ENGINEERING AND ARCHITECTURE

2022-23

TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

1 **Rechtstreeks:**
- Bachelor in de ingenieurswetenschappen, afstudeerrichting: toegepaste natuurkunde
- Bachelor in de ingenieurswetenschappen: toegepaste natuurkunde

2 **Na het met succes voltooien van een voorbereidingsprogramma:**
MIN 30 SP - MAX 90 SP
a opleidingen nieuwe structuur:
- Bachelor in de fysica
- Bachelor in de fysica en de sterrenkunde
- Bachelor in de ingenieurswetenschappen (KMS)
- Bachelor of Engineering Technology
- Een diploma van een opleiding 'Bachelor of Science in de ingenieurswetenschappen' (met inbegrip van 'architectuur')
- Een diploma van een opleiding 'Master of Science in de industriële wetenschappen'

b opleidingen oude structuur:
- Een diploma van 'Industrieel Ingenieur'

3 **Rechtstreekse toelating voor het volgen van een brugprogramma (horizontale instroom):**
a opleidingen nieuwe structuur:
- Master in de fysica
- Master in de fysica en de sterrenkunde
- Master in de ingenieurswetenschappen: elektrotechniek
- Master in de ingenieurswetenschappen: fotonica
- Master of Electrical Engineering
- Master of Photonics Engineering
- Master of Photonics Engineering
- Master of Physics

b opleidingen oude structuur:
- Licentiaat in de natuurkunde

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

Students who wish to enrol for the Master of Science in Engineering Physics 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 Engineering Physics 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 who hold 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.

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-engineering-physics-en/programma

Information sessions
Graduation Fair
afstudeerbeurs.gent/en/students/further-studies

Open Days

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

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

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GHENT UNIVERSITY

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