

# MASTER OF SCIENCE IN ENGINEERING PHYSICS

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

Ghent University is the only university in Flanders to offer a Master of Science in Engineering Physics. Our alumni have a solid physical know-how and the necessary skills to take up a leading role in groundbreaking physics research. At the same time, they have the engineering skills that make them sought-after innovators and developers in industry, at research institutes, and universities. The curriculum's engineering component 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 physics component follows a reductionist approach where experiment and mathematical modelling aim at understanding and breaking down 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.

## STRUCTURE

The regular programme leading to a Master's degree in Engineering Physics starts with a three-year Bachelor's programme, followed by a two-year Master's programme. Admission into our programme from several other (both domestic and foreign) Bachelor's and Master's programmes is possible. The two-year Master's curriculum contains a number of mandatory course units offering a strong basis in the major fields of engineering physics. Through a selected number of elective course unit, our students can then acquire an attractive skillset in more advanced topics in engineering physics, ranging from quantum mechanical modelling to the physics of photonic and electronic components. In the first year, students need to carry out a physics project with an industrial purpose and a focus on sustainability and intellectual property. A research-oriented Master's dissertation completes the programme in the second year.

## LABOUR MARKET

The Master of Science in Engineering Physics prepares students to tackle engineering challenges with a broad skill set in physics. By means of programme's broad scope and its eight advanced elective course units we make sure that our alumni are ready to do innovative work in a broad range of companies and research centres 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 biomedical engineering. Some of our alumni work in consultancy or at government institutes. After a few years they can be found in management functions or as leading researchers and professors.

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## 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

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.

Important: Students who wish to enrol must add the result of a GRE test to their application, more specifically the result of the Quantitative Reasoning of the General Test. The GRE test result will be assessed using the [faculty's grading scale](#).

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](http://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/language requirements](http://www.ugent.be/language requirements)

## PRACTICAL INFORMATION

### Study programme

[studiekiezer.ugent.be/master-of-science-in-engineering-physics-en/programma](http://studiekiezer.ugent.be/master-of-science-in-engineering-physics-en/programma)

### Information sessions

#### EVOLV

[evolv.gent/en/students/further-studies](http://evolv.gent/en/students/further-studies)

## 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

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## Open Days

Each spring the graduation fair **EVOLV** organised by the UGent Association, offers the opportunity to discover all possible options to continue studying or to start looking for a job (with more than 200 different companies).

For some programmes, there is a specific **Open Day**. If so, it will be announced here (at the latest Feb 15th).15th).

09 March 2024 09u00 - 14u00 - doorlopend - Campus Ardoyen, Gebouw 126 (iGent), Tech Lane Ghent Science Park, 9052 Zwijnaarde

25 April 2024 17u00 - 19u00 - Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33, Gent

## 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](http://www.ugent.be/tuitionfee)

## Learning path counsellor

[studietrajectir.ea@ugent.be](mailto:studietrajectir.ea@ugent.be)

## Contact (for international degree students)

International Relations Officer

+32 9 264 36 99

[international.ea@ugent.be](mailto:international.ea@ugent.be)