

# MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

MAJORS: MA ESTE 00 CHEMICALS - MA ESTE 00 MARINE - MA ESTE 00 URBAN - MA ESTE 00 DEVELOPING - MA ESTE 00 RECOVERY

120 ECTS CREDITS - LANGUAGE: ENGLISH

## WHAT

This master programme will train a new generation of professionals to provide sustainable solutions for increasingly complex environmental problems. You will learn to create a healthier living environment for all, whilst avoiding pollution, preserving our ecosystems, and sustainably using and recovering resources. You will also learn to tackle environmental issues from local to global scale, both in developed and developing economies, and from oceans to megacities, duly accounting for the driving forces of global climate change. The first year provides a broad education in all core disciplines of environmental science and technology. The entire second year allows you to fully specialise (including your master dissertation research) in one of five environmental topics of international concern (majors), all of which are supported by top-level UGent research. The programme offers training to an international audience and is entirely taught in English. The study programme can be attended by students from across the globe that are interested in solving environmental problems, regardless of whether they have the ambition to improve quality of life in their own city or country or in another continent. This international dimension enables frequent contacts and common activities with fellow students from various backgrounds and cultures, thus also enhancing the students' social skills.

## STRUCTURE

The first year of the programme (60 credits) is entirely dedicated to acquiring a broad, comprehensive basis in all core domains of environmental science and technology, divided in five modules:

- Environmental sustainability and policy (climate change, legislation and economic aspects)
- Environmental diagnostics (environmental chemistry, ecotoxicology)
- Environmental technology (water, soil, air, waste)
- Applied ecology (freshwater, marine, microbial)
- Environmental research skills (experimental design, modeling, communication).

In the second year, students need to choose one out of five majors to specialise in (24 credits each):

- **Chemicals assessment and management:** Environmental contamination with chemical micro-pollutants is of increasing worldwide concern, as it is thought to contribute significantly to human disease and reduced ecological health, including biodiversity loss. In this major, you will learn to improve human and ecosystems health by avoiding or reducing chemical pollution of water, air and

soil whilst still enjoying the societal benefits of chemicals.

- **Resource recovery technology:** We are confronted with ramping environmental problems and resource scarcity, driven by an ever-growing global population and boosted material consumption. In a world with finite resources, making the best possible use of them is paramount to the protection of our environment. The recovery of resources from waste is a critical part of the so-called circular economy model. In this major, you will learn to extract precious resources from waste streams to enable a fully circular society.
- **Environmental Health and Technology for Developing Economies** Developing economies are increasingly facing environmental degradation due to population growth and rapid urbanization, which may result in a heavy burden of death, disease and disability. In this major, you will learn how to tackle the impacts of environmental degradation on human and environmental health in a developing nations setting. You will also learn how the countries involved can make appropriate technological and policy-related choices to reach economic prosperity in a sustainable way.
- **Urban Environmental Management:** Although city densification is often considered a need for a growing world population, it also puts a strong pressure on the urban environmental quality and quality of life of citizens. Major environmental challenges in the next decades will be located in the urban environment. In this major, you will learn to tackle current problems in cities and how sustainability can be guaranteed in urban settings in the future.
- **Environmental health and technology for marine systems:** Marine systems play crucial roles in our global economy with major opportunities for further innovation. Yet at the same time, marine systems provide crucial ecosystem services for human and environmental health. Therefore, the blue economy, requires a sustainable growth strategy for marine and maritime activities that protects resources and the environment. In this major, you will learn how to shape the future of the blue economy and to develop solutions for our oceans and seas.

The master dissertation (30 credits) is also programmed in the second year and is related to the chosen major.

Students can either propose their own subject (which could be related to an environmental problem in their own city or country) or choose a subject from a list of available topics. For certain subjects scholarships are available. Finally, students can complete the remaining 6 credits with elective courses (including e.g. academic English) or a short internship with a company in the environmental science and technology sector.

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## LABOUR MARKET

Graduates of 'Environmental Science and Technology' become active in diverse sectors and take on a wide variety of professional duties. They become – among others – entrepreneurs, policymakers, science advisors, technology consultants, R&D specialists in industry, researchers, or teachers at higher education institutions. The job market in environmental science and technology is in high demand for people that are broadly trained in all aspects of environmental science and technology. There is also an increasing demand for creative and impactful problem-solvers with advanced knowledge and skills in emerging and globally pressing environmental topics, such as those offered in the majors: chemicals management, resource recovery, urban environmental engineering, developing economies, and marine systems.

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## TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

### 1 Rechtstreeks:

- Bachelor in de bio-industriële wetenschappen
- Bachelor in de bio-ingenieurswetenschappen
- Bachelor in de biochemie en de biotechnologie
- Bachelor in de biologie
- Bachelor in de biomedische wetenschappen
- Bachelor in de biowetenschappen
- Bachelor in de chemie
- Bachelor in de farmaceutische wetenschappen
- Bachelor in de fysica
- Bachelor in de fysica en de sterrenkunde
- Bachelor in de geologie
- Bachelor of Environmental Technology
- Bachelor of Food Technology
- Bachelor of Molecular Biotechnology
- Een diploma van een opleiding 'Bachelor of Science in de industriële wetenschappen'
- Een diploma van een opleiding 'Bachelor of Science in de ingenieurswetenschappen' (met uitzondering van 'architectuur')

Language requirements for this study programme differ from the required standard level for English-taught study programmes as specified in the Ghent University Education and Examination Code:

### English:

Nationals of Australia, Botswana, Canada, Eritrea, Gambia, Ghana, Guyana, India, Ireland, Kenya, Liberia, Malawi, Namibia, New Zealand, Nigeria, Philippines, Sierra Leone, South Africa, Sri Lanka, Trinidad and Tobago, Uganda, UK, USA, Zambia, and Zimbabwe, need to send proof of at least one year - 60 ECTS (finished successfully) - of comprehensive English-based instruction at a Higher Education Institution (mode of instruction).

Candidates from any other nationality need to present test results of one of the following tests (validity of 5 years; TOEFL/IELTS predictive tests and TOEIC will not be accepted):

- TOEFL IBT 86
- TOEFL PBT 570
- ACADEMIC IELTS 6,5 overall score with a min. of 6 for writing
- CEFR B2

## ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

Each application will be evaluated by a board of admission of the specific programme and has to be approved by the Faculty Council and by the Rector's office.

Applicants must have a Bachelor's degree of minimum 3 years with good overall scores (at least a second class or equivalent, preferably higher) from a university or recognised equivalent.

Consult [the programme website](#) for specific academic and language requirements.

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

## PRACTICAL INFORMATION

### Study programme

[studiekiezer.ugent.be/master-of-science-in-environmental-science-and-technology-en/programma](http://studiekiezer.ugent.be/master-of-science-in-environmental-science-and-technology-en/programma)

### Information sessions

#### Graduation Fair

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

#### Open Days

Welcome to the infosession of all masters of the faculty:

25 April 2023 19u00 - 21u00 - Campus Coupure (E-blok, Agora), Coupure Links 653, 9000 Gent

### Enrolling institution

Information on enrolment at Ghent University.

### Application Deadline (for International degree students)

More information on programme specific application procedures and deadlines.

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## **Tuition fee**

More information is to be found on: [www.ugent.be/tuitionfee](http://www.ugent.be/tuitionfee)

## **Contact**

Ghent University  
Faculty of Bioscience Engineering  
International Training Centre  
Coupure Links 653, B-9000 Gent  
[www.itc.ugent.be](http://www.itc.ugent.be)  
[applications.itc@ugent.be](mailto:applications.itc@ugent.be)

## **Learning path counsellor**

Mevr. Isabelle Vantornhout  
[studietraject.coupure.bw@UGent.be](mailto:studietraject.coupure.bw@UGent.be)

[www.itc.ugent.be](http://www.itc.ugent.be)