

# MASTER OF SCIENCE IN SOILS AND GLOBAL CHANGE

MAIN SUBJECTS: PHYSICAL LAND RESOURCES AND GLOBAL CHANGE • SOIL BIOGEOCHEMISTRY AND GLOBAL CHANGE

Master's Programme organised jointly by Ghent University (Faculty of Bioscience Engineering), University of Natural Resources and Life Sciences (Vienna), University of Göttingen and Aarhus University

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

## COURSE CONTENT

Increased population pressure, industrialisation and intensive land use are causing depletion of natural resources and are limiting the performance of land with respect to its functions such as biomass production, carbon sequestration, water purification, etcetera. The additive effects of climate change and the above-mentioned aspects of global change influence the capacity of soils to regenerate and may even cause soil degradation.

The future capacity of soils to support (human) life is at stake. Programmes have been developed to protect the environment and to increase ecosystem resilience. Numerous directives on soil response to external pressures have been developed and implemented. A wealth of scientific knowledge is available but dispersed due to the specialisation of research groups, which makes it difficult for students to follow a focused curriculum on soils and global change at any individual university.

The International Master of Science in Soils and Global Change (IMSOGLO) programme aims at teaching the knowledge, tools, technologies and applications in the context of soils and global change by bringing together the expertise of research groups at 4 renown EU universities: Ghent University, University of Natural Resources and Life Sciences (Vienna), University of Göttingen, and Aarhus University.

The academic partners are complementary, and each have specific expertise in biogeochemical and physical aspects of soils under global change and can thus provide the necessary multidisciplinary approach to cover the complete chain:

- All partner Universities work on soils worldwide, which is useful to provide a variety in classroom examples to the students and allows a rich choice in study areas for thesis research;
- Aarhus University has a strong profile in soil physics and global change issues in arctic and temperate regions;
- The University of Natural Resources and Life Sciences (Vienna) has a strong profile in soil microbiology and greenhouse gas fluxes in temperate and tropical soils;
- The University of Göttingen has a strong profile in biogeochemistry of agricultural and natural soils of temperate and tropical soils;
- Ghent University has a strong profile in physical and chemical soil degradation research and optimal soil & water management worldwide.

The academic partners collaborate closely with non-educational partners from both the public and private sectors. Associated Partners have a structural regular commitment towards the programme, and the large networks at all partner institutes allow options for theses and internships through ad hoc opportunities, offers or requests.

## COURSE STRUCTURE

This 2-year programme contains 120 ECTS credit units and has two specialisation options of 90 ECTS:

- **Soil biogeochemistry and global change** is organised by Ghent University, the University of Natural Resources and Life Sciences Vienna and the University of Göttingen and leads to a joint MSc-diploma issued by these 3 universities.
- **Physical land resources and global change** is organised by Ghent University and Aarhus University, and leads to a joint MSc-diploma issued by these 2 universities.

Student mobility within Europe is an integral part of the 2-year programme. Both specialisations share the introductory module of Soil Fundamentals at Ghent University (first semester, 30 ECTS, which includes a joint primer event) and a joint summer activity at the end of the second semester.

The courses and locations during the second and third semester depend on the chosen specialisation. Students follow mandatory courses and choose eligible courses up to a total of 30 ECTS per semester (see [www.imsoglo.eu](http://www.imsoglo.eu) for a list of mandatory and elective courses).

The MSc-thesis is done at one of the universities organising the specialisation, with co-supervision from the other university. It is also possible to do the thesis in conjunction with one of the associated partners: Joint Research Centre of the European Community, or Chinese Academy of Sciences (Nanjing).

## CAREER PERSPECTIVES

A needs analysis at the start of IMSOGLO has shown there is a substantial need for soil consultants primarily in the fields of agronomy and pollution. There is a larger need for academics, mainly in the fields of land-use change and greenhouse gas emissions, which strongly proves the need and relevance for the scope of the programme: soils and global change. Analysis of alumni of preceding MSc-programs showed that almost 45% of the alumni took jobs in the public sector, mostly in research and partly in education. About 50% of the alumni took jobs in either consultancy, industry or agriculture/agro-industry.

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## TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

### Na geschiktheidsonderzoek:

- academisch bachelordiploma

Bij het geschiktheidsonderzoek wordt o.a. afgetoetst of je een basis hebt aan bepaalde wetenschappelijk kennis. Meer informatie hierover vind je op de pagina van de masteropleiding: [www.ugent.be/bw/en/education/master-programmes](http://www.ugent.be/bw/en/education/master-programmes).

### 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

### Infomomenten

**Masterbeurs** - [www.ugent.be/masterbeurs](http://www.ugent.be/masterbeurs)

### Studiegeld

Meer informatie vind je op: [www.ugent.be/studiegeld](http://www.ugent.be/studiegeld)

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

## ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

For programme specific academic and language requirements consult [www.ugent.be/bw/en/education/master-programmes](http://www.ugent.be/bw/en/education/master-programmes).

## PRACTICAL INFORMATION

### Study programme

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

> by Faculty > Programme types > select your programme

### Application deadline for international degree students:

For programme specific application procedures and deadlines consult [www.ugent.be/bw/en/education/master-programmes](http://www.ugent.be/bw/en/education/master-programmes).

### Enrolling institution

Students enroll in Ghent University in the months preceding the start of the academic year. Students register in each of the host institutes at arrival.

### Tuition fee

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

More information about scholarship opportunities: [www.ugent.be/bw/en/education/scholarships](http://www.ugent.be/bw/en/education/scholarships)

### Trajectbegeleiding/Learning path counsellor

Mevr. Isabelle Vantornhout

[studietraject.coupure.bw@ugent.be](mailto:studietraject.coupure.bw@ugent.be) - [www.ugent.be/bw](http://www.ugent.be/bw)

### Contact

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International Training Centre

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