



VRIJE
UNIVERSITEIT
BRUSSEL

In collaboration with



**MASTER OF
SCIENCE IN
MARINE
AND LACUSTRINE
SCIENCE AND
MANAGEMENT**

OCEANS & LAKES

www.vub.ac.be/oceans-lakes/master
www.oceansandlakes.be

**120
ECTS**

2019-2020

WHY VUB?

VUB education creates strong individuals, critical minds and world citizens

Vrije Universiteit Brussel (VUB) offers high-quality English-taught programmes, supported by outstanding research. Being a student at VUB means learning in an open atmosphere of tolerance and diversity, as well as growing into an independent and critical-thinking individual.

VUB is a comprehensive university and offers education on student-friendly campuses in the cosmopolitan city of Brussels. At VUB, lecturers and assistants are available and approachable to students. Faculty members are on hand to answer questions and teaching is often done in small groups to ensure close interaction and hands-on experience.

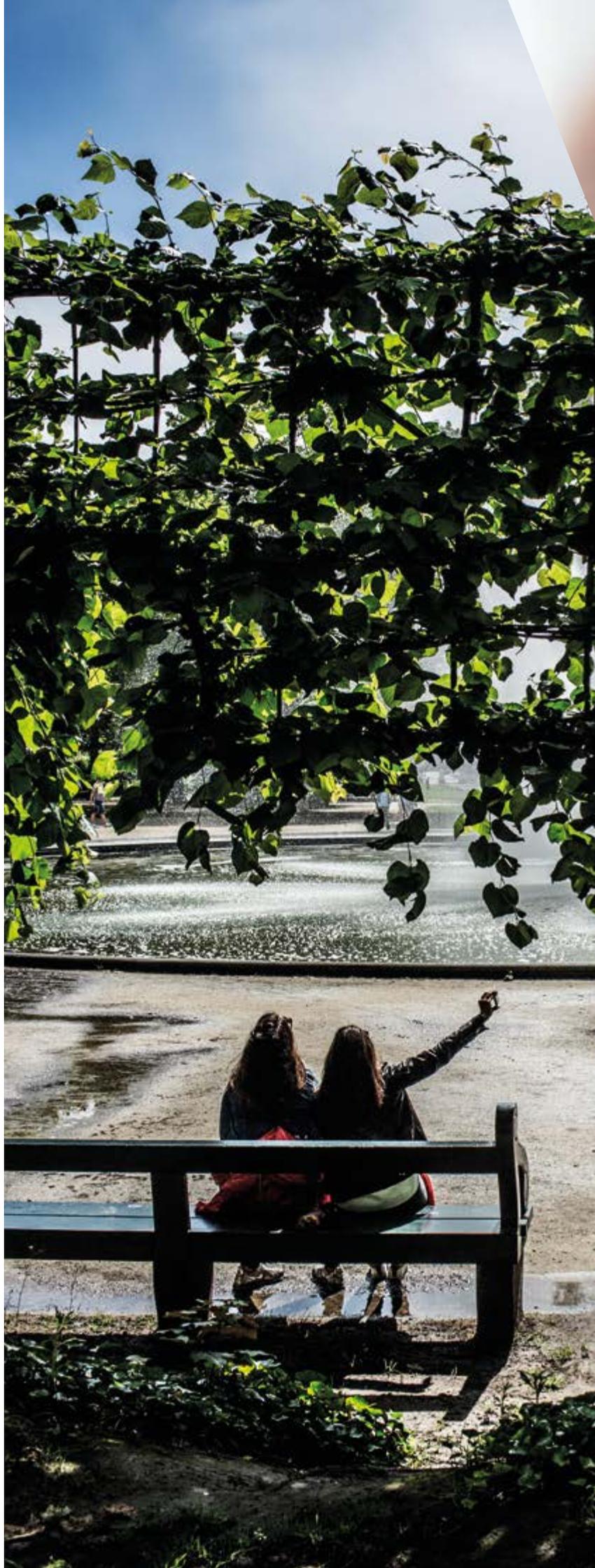
VUB is a dynamic and modern university with almost two centuries of history. We welcome more than 15.000 students, 21% of which are international students from more than 120 different countries.

The basis of our academic success

Vrije Universiteit Brussel was founded on the principle of 'free inquiry' as formulated by the French mathematician and philosopher of science Henri Poincaré (1854-1912):

"Thinking must never submit itself, neither to a dogma, nor to a party, nor to a passion, nor to an interest, nor to a preconceived idea, nor to anything whatsoever, except to the facts themselves, because for it to submit to anything else would be the end of its existence."

Personal development, open-mindedness, a positive and critical attitude and a sense of responsibility are characteristics that you will encounter in everyone at the university: from professors and researchers to students and staff members. It lies at the basis of our academic success.





Oceans & Lakes

The interuniversity Master in Marine and Lacustrine Science and Management (known as: Oceans & Lakes) offers a multidisciplinary approach to marine and lacustrine systems. It integrates physical, chemical, geological, ecological, legislative and societal aspects and encourages students to also consider conservational and sustainability features. Students are provided with strong fundamental and applied knowledge and are prepared for an active role in the scientific research and management of marine and lacustrine systems.

In this joint programme on aquatic systems, three universities in Flanders (Belgium) - Vrije Universiteit Brussel, Universiteit Antwerpen and Universiteit Gent combine their expertise. Many other experts and institutions are also involved in this programme, adding even more knowhow.



OCEANS & LAKES

Insight into the complexity of life

This two-year master's programme offers a unique combination of study in the marine and lacustrine field. It provides insight into the complexity of life and processes in marine environments and lakes, and offers skills to study and manage them. This combination of disciplines makes the programme unique in Europe. It comprises management and policy as well as economic aspects of aquatic ecosystems and law.

Since admission is open to holders of various science-related bachelor's degrees, it may offer a unique opportunity to reorientate your study career, and to broaden your horizon and meet people from different backgrounds.

International team

The programme attracts an international group of students and professors. The range of professional, educational and cultural backgrounds of the students and professors illustrates the global context of future marine and lacustrine research and management. Case studies are presented on local and national policies and management practices in the students' and professors' countries of origin, allowing for different perspectives on the topic.

Research and fieldwork combined

The master programme provides an insight into the diversity and complexity of life and processes in oceans, seas, rivers, lakes and estuaries, through a balanced mix of formal teaching and practical exercises. Practical skills are developed during laboratory and field training sessions, individual and group assignments, report presentations and discussion seminars. In addition, fieldwork is an essential part of the programme, with excursions, internship and visits

to marine research centres. The master's thesis consists of an individual research project, and aims for high research standards, which are field- or laboratory-based and include governance or policy analyses.

Your ticket to a fascinating career

The programme aims to provide you with strong fundamental and applied knowledge in scientific research and management of marine and lacustrine systems. It prepares you to play an active role in research, policy and management. It's your ticket to a fascinating professional world and can be the start of an international career. The integration of knowledge from across various disciplines is valuable, and you can contribute significantly in various jobs related to marine and lacustrine domains anywhere in the world.

Brussels, Ghent & Antwerp: the best of three worlds

The biology departments and diverse research groups of Vrije Universiteit Brussel, Universiteit Gent and Universiteit Antwerpen continuously develop and maintain innovative and internationally recognised research programmes. Most research programmes are international collaborations, and all three departments take part in various international research networks.

Development and sustainability

Oceans & Lakes is recognized as an ICP (International Course Programme). This means that there are targeted and well-developed trajectories possible to university development cooperation with South partners: the application of science and management skills to global and local challenges, aligning with the UN's sustainable development goals.



TWO YEAR PROGRAMME	ECTS
Core Courses	
Oceanography	4
Estuarine and Coastal Systems	5
Law and Ethics on Conservation of Aquatic Systems	3
In-situ and Remote Sensing Tools in Aquatic Sciences	5
Environmental Modelling	3
Seminars: Case Studies on Biodiversity Management	3
Integrated Marine Coastal Ecology Field Course	3
River & Lake Ecology	5
Limnology	5
Broadening Courses	
Governance and Policy in Development and Cooperation - Part I	3
Governance and Policy in Development and Cooperation - Part II	3
Internship	6
Field Courses (choice of 3 ECTS)	
Integrated Field Course at Sea	3
Integrated Limnological Field Course	3
Summer school (choice of 6 ECTS)	
Monsoon School	6
Summer school	6
Free elective courses	6
Supporting Courses (choice of 9 ECTS)	
Introduction to GIS	3
Data and Information Management	3
Biogeochemistry	3
Introduction to Marine and Lacustrine Biology	3
Introduction to Data Mining	3
Advanced Applied Statistics	3
Analysis of Biological Data	6
Conservation Genetics	3
Stable Isotope Geochemistry	3
Majors (choice of one)	
Global Change Impacts on Ecology and Biodiversity	24
Conservation Biology and Ecosystem Management	
Environmental Impact and Remediation	
Marine and Lacustrine Geosciences	
Master's thesis	30
Total	120

VLIR SCHOLARSHIPS

VLIR-UOS funds and facilitates academic cooperation and exchange between higher education institutions in Flanders and those in developing countries, aiming to build capacity, knowledge and experience for sustainable development.

The VLIR scholarship programme is particularly designed for people from developing countries who already have professional experience and occupy strategic positions at an institution in their native country. The opportunities for knowledge application and transfer after the student returns home are an important selection criterion for the scholarship. Other admission requirements refer to: age, education, motivation, language, gender and financial resources. Only students who are nationals from a country in the VLIR country list can apply for the VLIR-UOS scholarship. For more details on the application procedure and forms, please consult the VLIR-UOS website:

www.vliruos.be.

PRACTICAL INFO

Classes take place in all three cities of the participating universities (Brussels, Antwerp and Ghent). Full-time attendance and active participation in lectures and practical exercises, field courses and excursions is required. Transport costs for travel by public transport between the three universities can be reimbursed. This may be subject to change in the coming years.

The programme may be subject to change. Check www.oceansandlakes.be for the latest information.

*ECTS (European Credit Transfer System):
1 credit represents 25-30 hours of study activity.*

STUDENTS AS SCIENTISTS

The courses and majors are strongly embedded in the three universities' ongoing research programmes. Through intensive collaboration with members of the different research groups and external institutes, you will get the opportunity to develop and improve your scientific skills.

Fieldwork is an intrinsic and important part of the programme, and in many cases you can spend some time abroad for fieldwork and data collection in the framework of your thesis.

"The Master of Science in Marine and Lacustrine Science and Management has given me the opportunity to be successful in life and has given me friendship worldwide.

The courses and practicals have increased my knowledge significantly and enlarged my connection to the other scientists in my field of expertise. By following the Oceans&Lakes programme, I also had the opportunity to start a PhD.

And since I am a pioneer in my field of expertise in my country I can look forward to a new career as lecturer at the Malagasy marine institute which will start as soon as I finish my PhD. Therefore I am right to say that the Malagasy students in my home country will also benefit from my training in the Oceans&Lakes programme."

Hajaniaina Andriavalonarivo Ratsimbazafy,
Madagascar
alumnus and PhD- student

"I chose to do the Oceans & Lakes programme attracted by its multidisciplinary and hands-on approach. I finished with a broader scientific scope, a newly discovered passion for science-policy and I fell in love with Belgium! Oceans and Lakes also opens up the job market in Belgium for you. With the knowledge, competences and skills gathered, and the experiences on working with people from different cultural and scientific backgrounds, I was able to quickly adapt to the policy and management environment, but keeping a much respected scientific background, really much welcomed by my employer. As society is steadily increasing its appreciation towards the ocean and its interactions with land, the Oceans & Lakes programme already prepares you for becoming the ultimate 21st century scientist."

Ángel Muñiz Piniella,
Spain
student, science officer at European Marine Board



"Having done terrestrial forestry for my bachelor's degree, it would be difficult for someone else to comprehend how I fitted in Marine Sciences. My first day in class seemed adventurous but I was able to appreciate better the uniqueness of the marine ecosystem. The programme has a wide scope and as such every single aspect that's important for me as a research scientist is adequately tackled. It has now become quite easy for me to interact with other scientists from the same line and share ideas. At higher levels of learning, one can then decide to specialise further depending on personal interests. I am now finishing my PhD and still apply most of the techniques acquired during my master's degree. The Belgian interuniversity programme has matured me into a confident young scientist with vast knowledge that will help sustainably manage our natural resources. This is particularly important for my country, Kenya, which is still struggling to foster development amid environmental degradation."

Judith Okello, Kenya
researcher at KMFRI



ADMISSION CRITERIA

Admission is based on the review of each application: proof of meeting academic and language requirements, personal motivation, etc.

LANGUAGE REQUIREMENTS

Prospective students can provide proof of sufficient knowledge of English as language of instruction by meeting one of the following criteria:

- having successfully completed one of the following language proficiency tests:
 - TOEFL: minimum level 79 for the internet-based test (IBT)
 - IELTS: minimum level academic module 6.5
 - ITACE: minimum level B2
 - Cambridge Certificate of Advanced English (CAE), grade B
 - Cambridge Certificate of Proficiency in English (CPE), grade C
- having successfully completed at least one year of secondary education with English as language of instruction, or having successfully completed secondary school in a Belgian institution;
- having successfully completed programme units in higher education with a minimum of 54 ECTS-credits where English was the language of instruction.

For more details on admission requirements and application: www.vub.ac.be/en/apply

DIRECT ACCESS

Bachelor of Science in Biology, Biochemistry, Biotechnology, Chemistry, Geography, Geomatics, Bio-engineering Sciences, Environmental Sciences.

OTHERS

For other bachelors in science, applied science and life sciences, admission will be evaluated based on academic records and skills.

Application deadline

Prospective students are advised to apply as soon as possible, even if they have not yet obtained their degree. Applications can only be submitted through our website www.vub.ac.be/en/apply

- Students who require a visa (non-EU/EEA nationals) need to submit their application before **April 1st**.
- Students who do not require a visa must apply before **September 1st**.
- Note: if the proof of English proficiency or APS certificate is not ready before the deadline, you can always submit it later instead of missing the deadline.
- Note: all the information about the VLIR-UOS scholarship application can be found on www.oceansandlakes.be

Tuition fees

All Flemish universities in Belgium are subsidised by the government, which results in relatively low tuition fees. The general tuition fee for our master programmes is €920/year. Some programmes have higher tuition fee for students with a non EU/EEA nationality. A detailed overview of the tuition fees can be found on:

www.vub.ac.be/en/tuition-fees

Contact

www.vub.ac.be/oceans-lakes/master
www.oceansandlakes.be