

## Oceans & Lakes – study programme –

### guide for students in the new programme (enrolments as of 2023-2024)

1. Structure of the new programme
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#### 1. Structure of the new programme:

### Foundation (27 ECTS)

Fundamental Oceans and Lakes Biology	3 ECTS
Oceanography	4 ECTS
Limnology	4 ECTS
Estuarine and Coastal Systems	4 ECTS
Law and Ethics on Conservation of Aquatic Systems	3 ECTS
Environmental Modelling	3 ECTS
Analysis of Biological Data	6 ECTS

### Professional Skills (23 ECTS)

Governance and Policy in Development and Cooperation Part I and Part II	3+3 ECTS
Seminars: Case Studies on Biodiversity Management	3 ECTS
Internship	5 ECTS
<i>Choice between:</i>	3 ECTS
Science communication / Environmental Impact Assessment	
<i>Choice between:</i>	
Monsoon School / Summer School	6 ECTS

### Supporting Skills (6 ECTS)

<i>Choice of 6 ECTS:</i>	
<i>From list:</i>	
Introduction to GIS	3 ECTS
Tracer Isotope Biogeochemistry	6 ECTS
Methods of Scientific Diving	3 ECTS
<i>(or free choice of another related course of 6 ECTS)</i>	

### Research Skills (10 ECTS)

<i>In-situ and Remote Sensing Tools in Aquatic Sciences</i>	
Aquatic Sciences	4 ECTS
Integrated Marine Coastal Ecology Field Course	3 ECTS
<i>Choice of 3 ECTS:</i>	
Integrated Field Course at Sea	3 ECTS
Integrated Limnological Field Course	3 ECTS
Integrated Estuarine Field Course	3 ECTS

### Major (24 ECTS)

*Choice of one major:*

Global Change Impacts on Ecology and Biodiversity  
Conservation Biology and Ecosystem Management  
Environmental Impact and Remediation  
Marine and Lacustrine Geosciences

### Master Thesis (30 ECTS)

Master Thesis	27 ECTS
Literature Review	3 ECTS

## **2. Important notes:**

### **Note 1:**

- enrollment for year courses must be done in the 1<sup>st</sup> semester
- enrollment for 1<sup>st</sup> semester courses must be done in the 1<sup>st</sup> semester
- enrollment for 2<sup>nd</sup> semester courses must be done in the 1<sup>st</sup> semester, but can still be changed in the 2<sup>nd</sup> semester

### **Note 2:**

you must reach a total of 60 ECTS per year, or 30 ECTS per semester. Small variations (under or over 60 ECTS/per year or 30 ECTS/semester) are allowed

## **3. First master year - 1MA**

### **Foundation courses (all compulsory):**

#### **1<sup>st</sup> semester:**

Fundamental Oceans and Lakes Biology – 3 ECTS

Oceanography – 4 ECTS

Estuarine and Coastal Systems – 4 ECTS

Analysis of biological data – 6 ECTS

#### **2<sup>nd</sup> semester:**

Limnology – 4 ECTS

Law and Ethics on Conservation of Aquatic Systems – 3 ECTS

Environmental Modelling – 3 ECTS

### **Professional Skills courses (all compulsory, except 1 choice):**

#### **1<sup>st</sup> semester:**

Governance and policy in development and cooperation Part I – 3 ECTS

Seminars: Case Studies on Biodiversity Management – 3 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)

#### *Choice between:*

- Environmental Impact Assessment (3 ECTS)
- Science communication (3 ECTS)

## **2<sup>nd</sup> semester:**

Governance and policy in development and cooperation Part II – 3 ECTS

## **Supporting Skills courses (students choose 6 ECTS):**

### **1<sup>st</sup> semester:**

Introduction to GIS – 3 ECTS

Tracer Isotope Biogeochemistry – 6 ECTS

2x3 ECTS or 6 ECTS in courses at Belgian university (with link to Master Oceans & Lakes)

### **2<sup>nd</sup> semester:**

Methods of Scientific Diving – 3 ECTS

Applied Geomorphology – 3 ECTS (biennial, taught in odd academic years, e.g. 2023-2024)

Natural Risk Management – 3 ECTS

2x3 ECTS or 6 ECTS in courses at Belgian university (with link to Master Oceans & Lakes)

## **Research skills courses (all compulsory, except 1 choice):**

### **2<sup>nd</sup> semester:**

#### *Compulsory:*

Integrated Marine Coastal Ecology Field Course – 3 ECTS

In-situ and remote sensing tools in aquatic sciences – 4 ECTS

#### *Choice between (selection through motivation letter might be possible):*

-Integrated Field Course at Sea – 3 ECTS

-Integrated Limnological Field Course – 3 ECTS

-Integrated Estuarine Field Course – 3 ECTS

## **Master Thesis courses (all compulsory):**

### **2<sup>nd</sup> semester:**

Literature Review – 3 ECTS

## **4. Second master year - 2MA**

### **Supporting Skills courses (students choose 6 ECTS):**

#### **1<sup>st</sup> semester:**

Scientific Presentation Skills and Career Planning – 3 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)

### **Professional Skills courses (all compulsory, except 1 choice):**

#### **1<sup>st</sup> + 2<sup>nd</sup> semester:**

*Choice between\*:*

- Monsoon School – 6 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)

- Summer School – 6 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course) - summer school can already be completed in 1<sup>st</sup> year – enrollment for course only in 2<sup>nd</sup> year

*\* Monsoon School is compulsory for VLIR-UOS scholars, optional for other students*

*Compulsory:*

Internship - 5 ECTS or 11 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course) - internship can already be completed in 1<sup>st</sup> year - enrollment for course only in 2<sup>nd</sup> year\*\*

*\*\* Internship 5 ECTS or 11 ECTS: a student can do a longer internship of 11 ECTS, if they do not follow Monsoon School or Summer School (not possible for VLIR-UOS scholars)*

### **Major 1 - Global Change Impacts on Ecology and Biodiversity (all compulsory):**

#### **1<sup>st</sup> semester:**

Aquatic Food Web Ecology – 4 ECTS

Marine Extreme Systems – 4 ECTS

Aquatic Microbial Ecology – 6 ECTS

Aquatic Genomics – 6 ECTS

#### **2<sup>nd</sup> semester:**

Lacustrine Systems – 4 ECTS

### **Major 2 - Conservation Biology and Ecosystem Management (all compulsory):**

#### **1<sup>st</sup> semester:**

Marine Fisheries Ecology and Management – 6 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)

Integrated Coastal Zone Management – 6 ECTS

Law of the Sea and Protection of the Oceans – 3 ECTS

Freshwater Ecology and Management – 6 ECTS

**2<sup>nd</sup> semester:**

Conservation Genetics – 3 ECTS

**Major 3 - Environmental Impact and Remediation (all compulsory):**

**1<sup>st</sup> semester:**

Aquatic Ecotoxicology and Environmental Monitoring – 6 ECTS

Ecosystem based adaptation to Global Change – 6 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)

Global Change Physiology - 6 ECTS

**2<sup>nd</sup> semester:**

Integrated Practicals – 3 ECTS

Freshwater Ecosystem Functioning – 3 ECTS

**Major 4 (Marine and Lacustrine Geosciences) (all compulsory):**

**1<sup>st</sup> semester:**

Advanced Sedimentology – 6 ECTS

Micropaleontology and Paleo-environmental reconstruction – 6 ECTS

Paleoclimatology and Climate Change – 6 ECTS

**2<sup>nd</sup> semester:**

Integrated Offshore Exploration – 6 ECTS

**Master Thesis courses (all compulsory):**

**2<sup>nd</sup> semester:**

Master Thesis – 27 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)