

## **Oceans & Lakes – study programme –**

### **guide for students in the old programme – enrolled before 2023-2024**

1. Important notes
2. First master year - 1MA
3. Second master year - 2MA

#### **1. Important notes:**

##### Note 1:

- “1MA or 2MA”: signifies this course can be taken up in the 1st or the 2nd year (you are free to choose in which year)
- ‘1MA’: signifies this course must be taken up in the 1<sup>st</sup> year
- “2MA”: signifies this course must be taken up in the 2<sup>nd</sup> year

##### Note 2:

- 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 3:

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

##### Note 4:

The old programme Oceans & Lakes (for students enrolled before 2023-2024) is being phased out. For first year courses, we generally only offer the exam opportunity, not classes. For second year courses, we generally still offer classes and the exam opportunity. Always check what is mentioned per course: ‘classes+exam’, or ‘exam only’.

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

##### **Compulsory courses in 1<sup>st</sup> year:**

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

Freshwater Ecology – 5 ECTS (1MA) (exam only)

Oceanography – 4 ECTS (1MA) (exam only)

Estuarine and Coastal Systems – 5 ECTS (1MA) (exam only)

Seminars: case studies – 3 ECTS - taught biennially in uneven years (1<sup>st</sup> + 2<sup>nd</sup> semester, year course)  
(1MA or 2MA) (classes+exam)

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

Law and Ethics on Conservation of Aquatic Systems – 3 ECTS (1MA) (exam only)

In-situ and remote sensing tools in aquatic sciences – 5 ECTS (1MA) (exam only)

Environmental Modelling – 3 ECTS (1MA) v

Limnology – 5 ECTS (1MA) (exam only)

Integrated Marine Coastal Ecology Field Course – 3 ECTS (1MA) (classes+exam)

### **Field course in 1<sup>st</sup> year:**

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

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

Integrated Field Course at Sea – 3 ECTS (1MA) (classes+exam)

Integrated Limnological Field Course – 3 ECTS (1MA) (classes+exam)

Integrated Estuarine Field Course – 3 ECTS (1MA) (classes+exam)

### **Broadening courses in 1<sup>st</sup> year:**

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

Governance and policy in development and cooperation Part I – 3 ECTS (1MA) (exam only)

### **Supporting courses in 1<sup>st</sup> and/or 2<sup>nd</sup> year (to be approved by Karolien Van Puyvelde, programme coordinator)**

-Choose 9 ECTS in list of supporting courses

-All VLIR-UOS students must take “Introduction to Data Mining”

-All students must take either “Advanced Applied Statistics” or “Analysis of Biological Data”

-All students without a background in biology, marine biology, oceanography, fisheries background, must take up “Introduction to Marine and Lacustrine Biology”

-Check schedule of supporting courses for overlap

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

Introduction to Data Mining – 3 ECTS (1MA) (exam only)

Introduction to Marine and Lacustrine Biology - 3 ECTS (1MA) (exam only)

Analysis of Biological Data – 6 ECTS (1MA or 2MA) (classes+exam)

Introduction to GIS – 3 ECTS (1MA or 2MA) (classes+exam)

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

Advanced Applied Statistics– 3 ECTS (1MA) (exam only)

Conservation Genetics - 3 ECTS (1MA or 2MA) (classes+exam)

Stable Isotope Geochemistry – 3 ECTS (1MA or 2MA) (exam only)

### **Major 1 (Global Change Impacts on Ecology and Biodiversity) courses in 1<sup>st</sup> year:**

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

Marine Food Web Ecology – 3 ECTS (1MA) (exam only)

Marine Extreme Systems – 6 ECTS (1MA or 2MA) (classes+exam)

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

Ecology of Coastal Seas – 3 ECTS (1MA or 2MA) (classes+exam)

Lacustrine Systems – 3 ECTS (1MA or 2MA) (classes+exam)

### **Major 2 (Conservation Biology and Ecosystem Management) courses in 1<sup>st</sup> year:**

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

Integrated Coastal Zone Management – 3 ECTS (1MA or 2MA) (classes+exam)

Environmental Impact Assessment – 3 ECTS (1MA or 2MA) (classes+exam)

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

3 ECTS course at Belgian university (with link to the major) (1MA or 2MA) (1<sup>st</sup> or 2<sup>nd</sup> semester)

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

3 ECTS course at Belgian university (with link to the major) (1MA or 2MA) (1<sup>st</sup> or 2<sup>nd</sup> semester)

Conservation Genetics – 3 ECTS (1MA or 2MA) (classes+exam)

### **Major 3 (Environmental Impact and Remediation) courses in 1<sup>st</sup> year:**

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

Environmental Impact Assessment - 3 ECTS (1MA) (exam)

Ecosystem based adaptation to Global Change - 6 ECTS (1MA or 2MA) (classes+exam)

Physiology of Aquatic Organisms - 6 ECTS (1MA or 2MA) (classes+exam)

### **Major 4 (Marine and Lacustrine Geosciences) courses in 1<sup>st</sup> year:**

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

Paleoclimatology and Climate Change – 6 ECTS (1MA or 2MA) (classes+exam)

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

#### **Compulsory courses in 2<sup>nd</sup> year:**

##### **1st + 2nd semester:**

Master Thesis – 30 ECTS (1<sup>st</sup> + 2<sup>nd</sup> semester, year course) (2MA) (classes+exam)

Seminars: case studies – 3 ECTS - taught biennially in uneven years (1<sup>st</sup> + 2<sup>nd</sup> semester, year course) (1MA or 2MA) (classes+exam)

#### **Field courses in 2nd year:**

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

Choice between:

Monsoon School – 6 ECTS (2MA) (classes+exam)

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

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

#### **Broadening courses in 2<sup>nd</sup> year:**

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

Internship – 6 ECTS - internship can already be completed in 1<sup>st</sup> year - enrollment for course only in 2<sup>nd</sup> year (2MA)

Governance and policy in development and cooperation Part II – 3 ECTS (2MA) (classes+exam)

#### **Supporting courses in 1<sup>st</sup> or 2<sup>nd</sup> year:**

-Choose 9 ECTS in list of supporting courses

-All VLIR-UOS students must take “Introduction to Data Mining”

- All students must take either “Advanced Applied Statistics” or “Analysis of Biological Data”
- All students without a background in biology, marine biology, oceanography, fisheries background, must take up “Introduction to Marine and Lacustrine Biology”
- Check schedule of supporting courses for overlap

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

Analysis of Biological Data – 6 ECTS (1MA or 2MA) (classes+exam)

Introduction to GIS - 3 ECTS (1MA or 2MA) (classes+exam)

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

Conservation Genetics - 3 ECTS (1MA or 2MA) (classes+exam)

Stable Isotope Geochemistry – 3 ECTS (1MA or 2MA) (exam)

Biogeochemistry – 3 ECTS – taught biennially in even years (2MA) (exam)

Applied Geomorphology – 6 ECTS - taught biennially in uneven years (2MA) (classes+exam)

Water Quality – 3 ECTS (2 MA) (classes+exam)

Natural Risk Management – 3 ECTS (2 MA) (classes+exam)

Methods of Scientific Diving – 3 ECTS (2 MA) (classes+exam)

### **Major 1 (Global Change Impacts on Ecology and Biodiversity) courses in 2nd year:**

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

Marine Genomics – 3 ECTS (2MA) (classes+exam)

Aquatic Microbial Ecology – 6 ECTS (2MA) (classes+exam)

Marine Extreme Systems – 6 ECTS (1MA or 2MA) (classes+exam)

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

Ecology of Coastal Seas – 3 ECTS (1MA or 2MA) (classes+exam)

Lacustrine Systems – 3 ECTS (1MA or 2MA) (classes+exam)

### **Major 2 (Conservation Biology and Ecosystem Management) courses in 2nd year:**

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

Integrated Coastal Zone Management – 3 ECTS (1MA or 2MA) (classes+exam)

Environmental Impact Assessment – 3 ECTS (1MA or 2MA) (classes+exam)

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

Marine Biodiversity – 3 ECTS (2MA) (classes+exam)

Law of the Sea and Protection of the Oceans – 3 ECTS (2MA) (classes+exam)

3 ECTS course at Belgian university (with link to the major) (1MA or 2MA) (1<sup>st</sup> or 2<sup>nd</sup> semester)

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

3 ECTS course at Belgian university (with link to the major) (1MA or 2MA) (1<sup>st</sup> or 2<sup>nd</sup> semester)

Conservation Genetics – 3 ECTS (1MA or 2MA) (classes+exam)

### **Major 3 (Environmental Impact and Remediation) courses in 2nd year:**

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

Physiology of Aquatic Organisms - 6 ECTS (1MA or 2MA) (classes+exam)

Ecosystem based adaptation to Global Change – 6 ECTS (1MA or 2MA) (classes+exam)

Integrated Practicals – 3 ECTS (2MA) (classes+exam)

### **Major 4 (Marine and Lacustrine Geosciences) courses in 2nd year:**

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

Advanced Sedimentology – 6 ECTS (2MA) (classes+exam)

Paleobiology of Micro-organisms – 6 ECTS (2MA) (classes+exam)

Paleoclimatology and Climate Change (1MA or 2MA) (classes+exam)

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

Integrated Offshore Exploration – 6 ECTS (2MA) (classes+exam)