

## Oceans & Lakes – study programme - guide for new students

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

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

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

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

River & Lake Ecology – 5 ECTS (1MA)

Oceanography – 4 ECTS (1MA)

Estuarine and Coastal Systems – 5 ECTS (1MA)

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

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

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

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

Environmental Modelling – 3 ECTS (1MA)

Limnology – 5 ECTS (1MA)

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

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

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

Choice between:

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

Integrated Limnological Field Course – 3 ECTS - selection through motivation letter might be possible (1MA)

### **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)

### **Supporting courses in 1<sup>st</sup> and/or 2<sup>nd</sup> year (please discuss first with 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”

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

Introduction to Data Mining – 3 ECTS (1MA)

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

Conservation Genetics - 3 ECTS (1MA or 2MA)

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

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

Advanced Applied Statistics– 3 ECTS (1MA)

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

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

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

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

Water Quality – 3 ECTS (2 MA)

Natural Risk Management – 3 ECTS (2 MA)

**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)

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

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

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

Lacustrine Systems – 3 ECTS (1MA or 2MA)

**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)

Conservation Genetics – 3 ECTS (1MA or 2MA)

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

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

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

Tropical Marine Ecology and Restoration - 3 ECTS (1MA or 2MA)

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

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

Environmental Impact Assessment - 3 ECTS (1MA)

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

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

Physiology of Aquatic Organisms - 6 ECTS (1MA) - choice between “Physiology of Aquatic Organisms” (1MA) or “Global Change Physiology” (2MA) – see major 3, 2MA

### **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)

### **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)

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

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

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

Choice between:

Monsoon School – 6 ECTS (2MA)

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)

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)

#### **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”

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

Conservation Genetics - 3 ECTS (1MA or 2MA)

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

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

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

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

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

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

Water Quality – 3 ECTS (2 MA)

Natural Risk Management – 3 ECTS (2 MA)

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

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

Marine Genomics – 3 ECTS (2MA)

Aquatic Microbial Ecology – 6 ECTS (2MA)

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

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

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

Lacustrine Systems – 3 ECTS (1MA or 2MA)

**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)

Conservation Genetics – 3 ECTS (1MA or 2MA)

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

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

Marine Biodiversity – 3 ECTS (2MA)

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

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

Tropical Marine Ecology and Restoration – 3 ECTS (1MA or 2MA)

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

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

Global Change Physiology - 6 ECTS (2MA) - choice between “Physiology of Aquatic Organisms” (1MA) or “Global Change Physiology” (2MA) – see major 3, 2MA Aquatic Ecotoxicology and Environmental Monitoring

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

Integrated Practicals – 3 ECTS (2MA)

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

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

Advanced Sedimentology – 6 ECTS (2MA)

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

Paleoclimatology and Climate Change (1MA or 2MA)

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

Integrated Offshore Exploration – 6 ECTS (2MA)