

## Blue Growth: An Interdisciplinary Approach to Research and Innovation in the Marine Environment (I002603)

**Course size** *(nominal values; actual values may depend on programme)*

**Credits 3.0**

**Study time 90 h**

**Contact hrs**

30.0h

### Course offerings and teaching methods in academic year 2022-2023

A (semester 1)

English

Gent

guided self-study

3.75h

self-reliant study activities

5.0h

demonstration

3.75h

lecture

17.5h

### Lecturers in academic year 2022-2023

Janssen, Colin

LA22

lecturer-in-charge

Asselman, Jana

LA22

co-lecturer

### Offered in the following programmes in 2022-2023

**crdts**

**offering**

### Teaching languages

English

### Keywords

Blue growth, marine ecosystems, coastal engineering, blue biotechnology, aquaculture, marine pollution and waste solutions, and wind, wave and tidal energy

### Position of the course

This course is reflecting (1) the world-wide increase in maritime and marine research and development activities and (2) important strategic decisions made by the EU and the UN in recent years to protect our oceans and seas (Decade of the Ocean, Sustainable Development Goals). The course will focus on fundamental and applied research and innovation areas concerning the threats and opportunities of marine systems in a changing global environment.

### Contents

The course will cover a general introduction to both maritime engineering and (applied) marine bio-engineering aspects of recent developments in the sustainable use of marine (eco)systems:

Maritime engineering:

- Wind energy
- Wave and tidal energy
- Coastal protection
- Harbour construction
- Data and information resources for blue growth operators

Marine (applied) bio-engineering:

- Aquaculture
- Marine litter & waste solutions
- Building with nature
- Marine spatial planning
- Offshore multi-use platforms,
- Blue biotechnology

Students can then select one case-study or topic for in-depth study and analysis through micro-teaching and individual project work during the course.

**Initial competences**

(Applied) Marine ecology, General Chemistry, General Physics

**Final competences**

- 1 Insight in the world-wide increase in maritime and marine R&D and valorization activities
- 2 Knowledge on the fundamental and applied research and innovation areas of the blue economy
- 3 Up to date insights into current developments in Blue Growth research and application areas

**Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

**Conditions for exam contract**

This course unit cannot be taken via an exam contract

**Teaching methods**

Microteaching, Guided self-study, Lecture, Self-reliant study activities

**Learning materials and price**

Course notes on Ufora

**References****Building Industries at Sea: 'Blue Growth' and the New Maritime Economy**

Kate Johnson, Heriot Watt University, UK

Gordon Dalton, University College Cork, Ireland

Ian Masters, Swansea University, UK

ISBN: 9788793609266

**Course content-related study coaching****Assessment moments**

end-of-term and continuous assessment

**Examination methods in case of periodic assessment during the first examination period**

Oral examination, Assignment

**Examination methods in case of periodic assessment during the second examination period**

Oral examination, Assignment

**Examination methods in case of permanent assessment**

Participation, Assignment

**Possibilities of retake in case of permanent assessment**

not applicable

**Extra information on the examination methods**

End of term assessment (final exam assignment, oral examination): 60%; continuous assessment (assignment, participation): 40%;

**Calculation of the examination mark**

*Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.*