

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**

Course offerings and teaching methods in academic year 2023-2024

| | | | |
|----------------|---------|------|------------------|
| A (semester 1) | English | Gent | lecture |
| | | | independent work |

Lecturers in academic year 2023-2024

| | | |
|----------------|------|--------------------|
| Janssen, Colin | LA22 | lecturer-in-charge |
| Asselman, Jana | LA22 | co-lecturer |

Offered in the following programmes in 2023-2024

| | crdts | offering |
|---|--------------|-----------------|
| Master of Science in Environmental Science and Technology | 3 | A |
| Exchange Programme in Bioscience Engineering: Environmental Technology (master's level) | 3 | A |

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

Lecture, Independent work, Peer teaching

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 assessment, Assignment

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

Oral assessment, 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.