

## Oceans and Human Health (I002604)

Wegens Covid19 kan mogelijk afgeweken worden van de onderwijs- en evaluatievormen. Dergelijke afwijkingen zullen via Ufora worden gecommuniceerd.

**Cursusomvang** *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

**Studiepunten** 3.0      **Studietijd** 90 u      **Contacturen** 30.0 u

**Aanbodsessies en werkvormen in academiejaar 2022-2023**

A (semester 1)	Engels	Gent	integratieseminarie	5.0 u
			begeleide zelfstudie	10.0 u
			zelfstandig werk	5.0 u
			hoorcollege	15.0 u

**Lesgevers in academiejaar 2022-2023**

Asselman, Jana	LA22	Verantwoordelijk lesgever
Janssen, Colin	LA22	Medelesgever

**Aangeboden in onderstaande opleidingen in 2022-2023**

	stptn	aanbodssessie
<a href="#">Bachelor of Science in Environmental Technology</a>	3	A
<a href="#">Master of Science in de bio-ingenieurswetenschappen: milieutechnologie</a>	3	A
<a href="#">Master of Science in Environmental Science and Technology</a>	3	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: land- en bosbeheer (niveau master-na-bachelor)</a>	3	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: milieutechnologie (niveau master-na-bachelor)</a>	3	A

**Onderwijstalen**

Engels

**Trefwoorden**

Blue growth, Ocean health and stressors, Human health; Coastal populations; climate change

**Situering**

The marine environment contributes significantly to human health through the provision and quality of the air that we breathe, the food we eat, the water we drink, and in offering health-enhancing, economic and recreational opportunities. For millennia, humans have been dependent on seas and oceans as a source of food and a means of transportation. Yet, the oceans and coastal seas are like a double-edged sword when it comes to interactions with human health. Natural events such as hurricanes, severe storms and tsunamis can have devastating impacts on coastal populations, while pathogens and toxic waste can cause illness and death. In terms of productivity (lost working days), the overall global burden of human disease caused by sewage pollution of coastal waters has been estimated at 4 million lost person-years annually. On the positive side, the oceans provide humans with many benefits including food for around a third of the global population, the air that we breathe and our climate system which enables habitation of much of the planet. The marine environment can also be the source of potential health benefits through the provision of healthy food, novel pharmaceuticals and related products derived from marine organisms, as well as through a contribution to general well-being from a close association with the coastal environment (i.e. recreational and psychological benefits, or the Blue Gym effect). The marine environment is also under pressure from human activities such as transport, industrial processes, agricultural and waste management practices. Evaluation and management of the resultant impacts, on

both marine ecosystems themselves, and on human health, have largely been undertaken as separate activities, under the auspices of different disciplines with no obvious interaction. Hence, many relationships between the marine environment and human health are still relatively unexplored, leaving critical knowledge gaps for those seeking to develop effective policies for the sustainable use of marine resources and environmental and human health protection.

## **Inhoud**

This course aims at describing and illustrating the fundamental and applied concepts of the emerging research and development field of Oceans and Human Health (OHH). This includes insights, fundamental science and applications to elucidate and understand how marine ecosystems impact human health and vice versa. This course aims at mobilizing interdisciplinary competencies and ensuring that the necessary scientific and technical capabilities are transferred. The complex and causal interconnections between the marine environment and ecosystem and human health require a systems approach addressing all levels of organization from genes to ecosystems. Such an integrated systems approach - which will be presented applied in this course - will draw on the skills and expertise of many scientific disciplines including the social and economic sciences. Topics will focus on both threats and benefits of marine ecosystems for human health, including aquaculture, harmful algal blooms, ocean acidification, pollution, Blue Gym Effect, sea spray.

### **LECTURES (1.5 ECTS)**

Part of the knowledge will be conveyed through lectures, including principles and basics of oceans & Human health, introduction to threats and opportunities within oceans and human health.

### **BLENDED LEARNING SESSIONS (INTEGRATION SEMINAR) (1 ECTS)**

Part of the knowledge will be made available via free online available material (video's from lecturers, presentations at conferences, publications, reports). This will focus on new ground-breaking topics relevant to Oceans & Human Health. During blended learning sessions this material will be discussed and argued in small groups to increase the insight and understanding

### **PROJECT ASSIGNMENT(0.5 ECTS)**

Students can choose a topic related to the course content as an assignment for a critical opinion and analysis of the topic.

## **Begincompetenties**

General and basis knowledge of biology, ecology, physics and chemistry. This course builds on the content of Applied marine ecology if you did not follow this course or an equivalent course, you can still follow Oceans and Human Health but an additional effort (reading some background material) might be required.

## **Eindcompetenties**

- 1 Understand the main processes driving the relationship between marine ecosystem health and human health.
- 2 Discuss consequences of human activities in marine ecosystems.
- 3 Discuss how changes in marine ecosystems lead to consequences for human health
- 4 Identify threats and opportunities of blue economy activities to oceans and human health interactions
- 5 Develop strategies to further strengthen the positive human health impact of oceans

## **Creditcontractvoorwaarde**

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk mits gunstige beoordeling van de competenties

## **Examencontractvoorwaarde**

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

## **Didactische werkvormen**

Begeleide zelfstudie, hoorcollege, integratieseminarie, zelfstandig werk

## **Leermateriaal**

Lecture presentations & additional material for self-study will be available via Ufora;

## **Referenties**

## **Vakinhoudelijke studiebegeleiding**

Oral presentations, discussions in groups (of different sizes), guided excursions, contact hours for individual guidance upon request.

#### **Evaluatiemomenten**

periodegebonden en niet-periodegebonden evaluatie

#### **Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode**

Schriftelijk examen, mondeling examen

#### **Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode**

Schriftelijk examen, mondeling examen

#### **Evaluatievormen bij niet-periodegebonden evaluatie**

Participatie, werkstuk

#### **Tweede examenkans in geval van niet-periodegebonden evaluatie**

Niet van toepassing

#### **Toelichtingen bij de evaluatievormen**

- \* End of term assessment: Written examination on content of the lectures, oral examination related to project
- \* Continuous assessment
- \* self-study, blended learning and Q&A session: participation of the student in the blended learning and preparatory assignments

#### **Eindscoreberekening**

End of term assessment: 50%; continuous assessment (self-study, participation at Q&A, preparatory assignments): 50%;  
Students who eschew continuous or end of term assessment may be failed by the examiner.