

## Introduction to the Circular Economy, Economics and Management of Natural Resources (I002766)

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

**Credits 4.0**

**Study time 120 h**

**Contact hrs**

40.0h

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

A (semester 1)

English

Gent

lecture

20.0h

lecture: plenary exercises

10.0h

seminar: coached exercises

5.0h

group work

5.0h

### Lecturers in academic year 2022-2023

Speelman, Stijn

LA27

lecturer-in-charge

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

International Master of Science in Environmental Technology and Engineering

4

A

International Master of Science in Sustainable and Innovative Natural Resource Management

4

A

Exchange Programme in Bioscience Engineering: Environmental Technology (master's level)

4

A

Exchange Programme in Bioscience Engineering: Land and Forest management (master's level)

4

A

### Teaching languages

English

### Keywords

Natural resources, environmental economics, bio-economic modeling, management models, circular economy, project appraisal

### Position of the course

Students are introduced into the circular economy. Guest lecturers from the non-academic sector illustrate how a problem arising from a resource supply risk can be turned into an economic opportunity and what the societal impacts are. Moreover, students are provided with basic knowledge about the economics and management of the exploitation of natural resources. This is a need because the optimal use of natural resources is based on economic principles. Furthermore, the negative and positive externalities of the use of natural resources are analysed and adapted rural development and environmental policies are discussed. Theoretical principles are illustrated by exercises and case studies. Besides the normal exercises, students are asked to do a group work in which the theory is applied to a specific contemporary problem concerning environmental pollution or natural resource management.

### Contents

#### I. FOUNDATIONS

An introduction to the circular economy, natural resources and environmental economics

The origins of the sustainability problem

Ethics, welfare economics and the environment

Concepts of sustainability

Welfare economics and the environment

#### II. ENVIRONMENTAL POLLUTION

Pollution control: targets

Pollution control: instruments  
Pollution policy with imperfect information  
III. PROJECT APPRAISAL  
Cost benefit analysis  
IV. NATURAL RESOURCE EXPLOITATION  
Valuing the environment  
The efficient and optimal use of natural resources  
Non-renewable resources  
V. ASPECTS OF THE CIRCULAR ECONOMY

#### **Initial competences**

Notion of economic principles

#### **Final competences**

- 1 Having knowledge of used principles, models and management skills for an optimal use of natural resources
- 2 Being able to analyse and present contemporary problems of natural resource management
- 3 Being able to evaluate and propose environmental policy instruments
- 4 Being able to analyse and discuss possible solutions for pollution problems

#### **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: plenary exercises, Group work, Lecture, Seminar: coached exercises

#### **Extra information on the teaching methods**

Lectures provide the theoretical concepts which are deepened in exercise sessions. The course is complemented with a group work in which students need to apply the theory to a specific contemporary problem concerning environmental pollution or natural resource management. This group work is presented to and discussed with the lecturers.

#### **Learning materials and price**

Perman, R., Ma, Y., Common, M., Maddison D., Mcgilvray, J., (2011). Natural resource and environmental economics  
Course presentations are available on Ufora

#### **References**

#### **Course content-related study coaching**

Interactive support through Ufora.  
Specific coaching on appointment by assistant.

#### **Assessment moments**

end-of-term and continuous assessment

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

Written examination

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

Written examination

#### **Examination methods in case of permanent assessment**

Report, Oral examination

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

examination during the second examination period is not possible

#### **Extra information on the examination methods**

For the permanent evaluation, students work together to make a presentation about a contemporary topic related to the course. After the presentation their topic will be discussed with all the group members as an oral exam.

**Calculation of the examination mark**

Final score =  $\frac{3}{6}$  theory +  $\frac{1}{6}$  exercises +  $\frac{2}{6}$  group work

Students who eschew period aligned and/or non-period aligned evaluations for this course unit can obtain a score not higher than 9/20.