GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

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**

Course offerings and teaching methods in academic year 2026-2027

A (semester 1)	English	Gent	seminar group work lecture

Lecturers in academic year 2026-2027

Speelman, Stijn	LA27	lecturer-in-charge

Offered in the following programmes in 2026-2027	**crdts**	**offering**
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 lecturersfrom 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 Explain and use principles, models and management skills for an optimal use of natural resources
2 Analyse and present contemporary problems of natural resource management
3 Evaluate and propose environmental policy instruments
4 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

Group work, Seminar, Lecture

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.

Study material

Type: Handbook

Name: Natural resource and environmental economics
Indicative price: € 53
Optional: yes
Language : English
Author : Roger Perman et al.
ISBN : 978-0-32141-753-4
Online Available : No
Available in the Library : Yes
Additional information: estimated cost relates to the e-book

Type: Slides

Name: slides of theory lectures
Indicative price: Free or paid by faculty
Optional: no
Language : English
Available on Ufora : Yes

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 assessment

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

Written assessment

Examination methods in case of permanent assessment

Oral assessment, Peer and/or self assessment, Assignment

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

Calculation of the examination mark

Final score = theory (50%) + exercises (20%) + group work (30%)
Students who eschew period aligned and/or non-period aligned evaluations for this course unit can obatin a score not higher than 9/20.