

## Economics and Management of Natural Resources (I002718)

**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 2)	English	Gent	group work	5.0h
			seminar: coached exercises	5.0h
			lecture	25.0h
			lecture: plenary exercises	5.0h

**Lecturers in academic year 2022-2023**

Speelman, Stijn      LA27      lecturer-in-charge

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

	<b>crdts</b>	<b>offering</b>
International Master of Science in Soils and Global Change (main subject Physical Land Resources and Global Change)	4	A
International Master of Science in Agro- and Environmental Nematology	4	A
Master of Science in Biology	4	A
Master of Science in Bioscience Engineering: Agricultural Sciences	4	A
Master of Science in Bioscience Engineering: Forest and Nature Management	4	A
Master of Science in Bioscience Engineering: Land, Water and Climate	4	A
Master of Science in Nutrition and Rural Development	4	A
Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)	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, project appraisal

**Position of the course**

To provide students with basic knowledge about the economics and management of the exploitation of natural resources. This is a need because the optimal use of land, water, forest and other natural resources is based on economic principles. Further, 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 natural resource 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

Valuing the environment

## IV. NATURAL RESOURCE EXPLOITATION

The efficient and optimal use of natural resources

Non-renewable resources

Renewable resources

### Initial competences

Basic knowledge of general economics

### Final competences

- 1 • Mastering basic principles of management of natural resources
- 2 • Having knowledge of used principles, models and management skills for an optimal use of natural resources and of the instruments for environmental policies.
- 3 Being able to apply the management models for both renewable and non-renewable resources
- 4 Being able to present, propose and analyse contemporary problems of natural resource management
- 5 Being able to analyse and propose environmental policy instruments
- 6 Being able to discuss and analyse possible solutions for pollution problems
- 7 Being able to apply environmental valuation techniques

### 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 both guided plenary and 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, Peer assessment

**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 = theory (50%) + exercises (20%) + group work (30%)

Students who eschew period aligned and/or non-period aligned evaluations for this course unit can obtain a score no higher than 9/20.