SUBJECT DATASHEET

Sustainable Environmental and Natural Resource Management

BMEGT42M524

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
Sustainable Environmental and Natural Resource Management

ID (subject code)	BMEGT42M524

Type of subject
contact unit

Course types and lessons

Type	*Lessons*
Lecture	2
Practice	0
Laboratory	0

Type of assessment
exam grade

Number of credits
5

Subject Coordinator

Name	*Position*	*Contact details*
Dr. Horváth György Ádám	senior lecturer	horvath.gyorgy@gtk.bme.hu

Educational organisational unit for the subject
Department of Environmental Economics and Sustainability

Subject website
https://edu.gtk.bme.hu

Language of the subject
magyar - HU

Curricular role of the subject, recommended number of terms
Programme: **Regional and Environmental Economic Studies part-time programme, autumn start**
Subject Role: **Compulsory**
Recommended semester: **2**

Programme: **Regional and Environmental Economic Studies part-time programme, spring start**
Subject Role: **Compulsory**
Recommended semester: **1**

Direct prerequisites

Strong	None
Weak	mikro- és makroökonómia - környezetgazdaságtan / micro- and macroeconomics - environmental econ
Parallel	None
Exclusion	A BMEGT42M003, BMEGT42M004, BMEGT42MN03, BMEGT42MN17, BMEGTMN20, BMEGTM016, BMEGT42M400, BMEGT42M500, vagy bármely más tárgykódon meghirdetett, szabadon választhatóként felvett, hasonló tematikájú tárgy korábbi teljesítése esetén. BMEGT42M003, BMEGT42M004, BMEGT42MN03, BMEGT42MN17, BMEGTMN20, BMEGTM016, BMEGT42M400, BMEGT42M500, or any other course with a similar syllabus not listed here.

Validity of the Subject Description
Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 580884/8/2023 registration number. Valid from: 29.11.2023.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The course unit aims to introduce students to the fundamental environmental and natural resource based problems that our contemporary society must face. Starting out from the economic basics, through a review of case studies to future-conscious decisions, students will gain an insight into environmental and natural resource economics. It is the objective of the course to empower students to understand the global events related to sustainable development and climate change, and to afford them the capability of taking fair, balanced and socially beneficial decisions.

Academic results

Knowledge

1. The student understands the importance of the economic approach in the transition to sustainable development.
2. The student is aware of the decision-making approach in economics.
3. The student has a basic knowledge of environmental valuations and its primary methods.
4. The student understands static and dynamic efficiency, and the decision-making it supports.
5. The student is aware of the problem of time frames in the decision making process. In particular, the student is acutely aware of the consequences of very long time frames.
6. The student understands the basic interrelations of resource management, fundamental problems and possible solutions. They are aware of the role and availability of substitutes, and the cost factor.
7. They understand the necessity of an energy transformation, its drivers, opportunities and limitations.
8. They are aware of the necessity of recycling, and are informed about the opportunities and limitations in the recyclability of certain substances and materials.
9. They understand the particularities of the fundamental resources necessary for the sustenance of human existence, such as water, air, soil and agricultural land.
10. The student understands the opportunities and contemporary challenges in food production, fishing and hunting, agricultural production and forestry, including local and global trends.
11. They comprehend the economics of pollution control, including that of local and regional, diffused, global and mobile sources, and possess an essential toolkit for their management.
12. The student understands the problems arising from the production, handling and storage of wastes, including harmless, toxic and nuclear wastes, and their economic, social and environmental implications to the present and future.
13. The student understands the basic environmental processes behind climate change, its phenomena and consequences, and the institutions and objectives humanity has established for its mitigation.
14. The student understands the objectives of humankind for the 21st century, the main shapers of sustainable development, issues of population and population growth conflicts, and the trajectories of mankind's future.

Skills

1. The student is sensitive towards and is capable of solidarity with future generations, and is capable of taking future-conscious, fair and equitable decisions.
2. The student is capable of drawing up economic, social and environmental plans for the future, and is competent at assessing these.
3. They are capable of assessing decisions taken from an economic, social and environmental aspect, bearing in mind the impacts on future generations.
4. They are able to manage resources sustainably.
5. They are competent in recognising problems arising from pollution, and are capable of finding appropriate solutions.
6. The student comprehends the basics of climate change, and is capable of taking decisions accordingly.
7. They are capable of foreseeing the challenges of the 21st century, and are capable of taking preventative, preservative or regenerative measures.

Attitude

1. Cooperates with the instructor and fellow students during the expansion of knowledge,
2. expands their knowledge through continuous knowledge acquisition,
3. open to the use of information technology tools,
4. seeks to understand the functioning of complex government systems,
5. in order to create and maintain the well-being of society, strives to better understand natural and environmental resources, to evaluate the factors necessary to resolve conflicts,
6. behaves empathetically and with sufficient interest in other members of society, works with care and understanding, with the expected respect, for the common goals of society.

Independence and responsibility

1. The students are able to work individually: selecting methods and techniques; organizing, planning, coordinating work; collecting, organizing, analysing, evaluating data; developing in general and professionally;
2. The students are able to apply system-oriented thinking.
3. The students are able to take responsibility for the analyses, conclusions, decisions made.
4. The students are able to perform tasks individually and with responsibility as a member of a project team.
5. The student aims to overcome all and any shortcomings in any adjoining disciplines and knowledge areas, including natural sciences, philosophy or social and economic studies.

Teaching methodology

Lectures, problem discussions and case studies. Oral and written communication, use of IT, optional individual and group assignments and planning.

Materials supporting learning

- Bartus Gábor - Szalai Ákos: Környezet, jog, gazdaságtan. Budapest: Pázmány Press, 2014.
- Szlávik János (szerk.): Fenntartható környezet- és erőforrás-gazdálkodás. Környezetvédelmi kiskönyvtár 14. Complex kiadó, Budapest, 2005.
- Tietenberg, Tom – Lewis, Lynne: Environmental & Natural Resource Economics. 10th Edition. Pearson, 2014
- Folyóiratcikkek és további, folyamatosan kiadott oktatástámogató anyagok
- A detailed and up-to-date list is provided during classes.

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

The two pillars of the evaluation of learning outcomes set out in point 2.2. are: 1. a formative assessment showing analysis and planning skills (preparation of a work plan); 2. as well as a summative assessment of the competencies acquired during the semester (handing in an exam paper).

Performance assessment methods

A. Detailed description of performance evaluations during the study period: Formative assessment (preparation of a work plan): preparation
of the work plan related to the exam paper. B. Detailed description of the performance evaluations carried out during the exam period: A complex, written evaluation of the knowledge and ability-type competency elements of the subject in the form of an exam paper. The exam paper focuses on the assessment of the acquired basic knowledge and the exploration of the knowledge of the determining relations.
The material on which the evaluation is based on is determined by the lecturer of the subject.

Percentage of performance assessments, conducted during the study period, within the rating

- **formative assessment (preparation of the work plan)**: 10

Percentage of exam elements within the rating

- **written exam**: 90

Conditions for obtaining a signature, validity of the signature

Condition for receiving a signature: preparation and approval of the course lecturer regarding the work plan of the exam paper.

Issuing grades

Excellent	95
Very good	87–94
Good	75–86
Satisfactory	63–74
Pass	50–62
Fail	0-49

Retake and late completion

1) Pursuant to the current CoS, in the case of formative assessments, if the assignment was submitted on time, it is possible to repeat or retake it before the end of the late completion period, if the original task has already been accepted by the instructor. 5) Formative assessments can be submitted late. The latest date for late submission is the last day of the late completion period.

Coursework required for the completion of the subject

participating in contact lessons	24
preparation for contact lessons	12
preparation of the work plan	40
autonomous learning	30
preparation of the exam paper	44
total	150

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 06.11.2023.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

Subject includes the topics detailed in the course syllabus to ensure learning outcomes listed under 2.2. to be achieved. The schedule of topics in the course curriculum in each semester may be affected by the calendar and other constraints.

1 Visions of the future. The economic approach in managing resources.

2 Evaluating trade-offs, cost-benefit analyses and decision-making tools. Evaluing the environment: economic reasons and methods.

3 Dynamic efficiency and sustainable development. Depletable resource allocation.

4 Energy: from depletables to renewables. Recyclable resources.

5 Replenishible but depletable resources. Economic questions of land use.

6 Agriculture and food security.

7 Forests.

8 Common-pool resources.

9 Economics of pollution control. Stationary source air pollution.

10 Mobile source air pollution. Climate change.

11 Water pollution. Toxic substances and environmental justice.

12 The quest for sustainable development. Population and development. Visions of the future revisited.

Additional lecturers

Beszedics-Jäger Bettina Szimonetta	PhD hallgató	jager.szimonetta@gtk.bme.hu
Bozsoki Fruzsina	PhD hallgató, tudományos segédmunkatárs	bozsoki.fruzsina@gtk.bme.hu

Approval and validity of subject requirements