SUBJECT DATASHEET

SUSTAINABLE ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS

BMEGT42MN20

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
SUSTAINABLE ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS

ID (subject code) BMEGT42MN20

Type of subject
contact lessons

Course types and lessons

Type	*Lessons*
Lecture	2
Practice	0
Laboratory	0

Type of assessment
exam grade

Number of credits
3

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: **MSc in Engineering Management**
Subject Role: **Compulsory**
Recommended semester: **2**

Direct prerequisites

Strong	None
Weak	mikro- és makroökonómia - környezetgazdaságtan, micro- and macroeconomics - environmental econo
Parallel	None
Exclusion	TVSZ szerint azonos vagy hasonló tematikájú választható tárgy

Validity of the Subject Description
Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 580768/11/2022. Valid from: 26.10.2022.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The course unit aims to introduce students to the fundamental environmental and natural resource based prob-lems 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 devel-opment.
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 stu-dent 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, in-cluding 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 appro-priate 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. The students collaborate/cooperate with the lecturer and fellow students on acquiring knowledge
2. The students expand their knowledge by continuous learning
3. The students are open to use IT solutions
4. The student strives to understand the nature and problems associated with environmental and natural re-sources in the interest of securing the commonwealth of society
5. The student exercises due empathy and interest towards other members of society, and shall act respectfully and cautiously in the shared interest of society.
6. -

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. 11th Edition. Pearson, 2018.
- 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

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Performance assessment methods

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

- -: 50
- -: 50
- -: 100

Percentage of exam elements within the rating

- -: 50

Conditions for obtaining a signature, validity of the signature

-

Issuing grades

Excellent	95
Very good	87–94
Good	75–86
Satisfactory	62–74
Pass	50–61
Fail	0-49

Retake and late completion

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Coursework required for the completion of the subject

részvétel a kontakt tanórákon	28
félévközi készülés órákra	12
felkészülés a teljesítményértékelésekre	20
összegző tanulmányi teljesítményértékelés	8
kijelölt írásos tananyag önálló elsajátítása	10
vizsgafelkészülés	12
összesen	90

Approval and validity of subject requirements

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.Evaluating trade-offs, cost-benefit analyses and decision-making tools. Valuing the environment: economic reasons and methods.Dynamic efficiency and sustainable development. Depletable resource allocation.Energy: from depletables to renewables. Recyclable resources.Replenishible but depletable resources. Economic questions of land use.Agriculture and food security.Forests.Common-pool resourcesEconomics of pollution control. Stationary source air pollution. Mobile source air pollution.Climate change.Water pollution. Toxic substances and environmental justice.The quest for sustainable development. Population and development. Visions of the future revisited.

Additional lecturers

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Approval and validity of subject requirements