SUBJECT DATASHEET

Environmental Economics

BMEGT42M400

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
Environmental Economics

ID (subject code)	BMEGT42M400

Type of subject
contact unit

Course types and lessons

Type	*Lessons*
Lecture	2
Practice	0
Laboratory	0

Type of assessment
mid-term grade

Number of credits
2

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, angol - EN

Curricular role of the subject, recommended number of terms
Programme: **MSc in Infrastructural Engineering**
Subject Role: **Compulsory**
Recommended semester: **3**

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Subject Role: **Compulsory**
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Direct prerequisites

Strong	None
Weak	None
Parallel	None
Exclusion	None

Validity of the Subject Description
Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 580439/11/2024 registration number. Valid from: 29.05.2024.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The aim of the course is to acquaint students with the theoretical and practical application of environmental economics, sustainability, and the European Union and Hungarian system of environmental regulation policy.

Academic results

Knowledge

1. The student has knowledge of the basic, comprehensive concepts, theories, facts, national economic and international connections of environmental economics;
2. mastered the basic information collection and analysis methods of environmental economics, knows its characteristic indicators;
3. knows the basics of the environmental protection fields related to his field of expertise;
4. knows the most significant normative theories of environmental policy intervention: the Pigou theorem and the Coase tradition;
5. knows the types of environmental policy intervention solutions, their advantages and disadvantages. Knows the criteria according to which the appropriate intervention tool can be selected for a given environmental problem;
6. knows the possibilities of government failures in the planning of environmental policy interventions;
7. knows the more frequently used environmental economic analysis methods: natural capital and ecosystem service evaluation procedures, cost-benefit analysis solutions.

Skills

1. By applying the learned theories and methods, the student is able to evaluate the social welfare and economic consequences of any environmental use problem, to determine the necessary range of facts and data necessary for the evaluation;
2. after evaluating the characteristics of a given, arbitrary environmental use problem, is able to determine possible alternatives for environmental policy interventions suitable for solving the problem, after comparative analysis and evaluation of these alternatives, is able to independently propose the appropriate corporate response or public policy intervention;
3. follows and interprets world economic, international, EU and national economic policy and policy processes, and is able to interpret the effects of changes on the future state of natural resources based on these;
4. able to determine the complex consequences of economic processes and organizational events;
5. can apply techniques for solving environmental problems, problem solving methods, taking into account their application conditions and limitations;
6. able to cooperate with representatives of other fields;
7. is able to formulate specialist, scientific, business and public policy information in a comprehensible way, making it understandable to the wider public.

Attitude

1. For the sake of quality work, the student demonstrates problem-sensitive, proactive behavior and takes the initiative;
2. receptive to receiving new information, new professional knowledge and methodologies, open to new tasks and responsibilities that require cooperation and independence. Strives to improve your knowledge and working relationships;
3. is open to changes in the broader economic and social environment of the given job, work organization, enterprise, strives to follow and understand the changes;
4. receptive to the opinions of others, to sectoral, regional, national and European values (including social, social and ecological, sustainability aspects).

Independence and responsibility

1. The student assumes responsibility for his analyses, conclusions and decisions;
2. assumes responsibility for compliance with professional, legal and ethical standards and rules related to work and conduct.

Teaching methodology

Lectures, written and oral communication, use of IT tools and techniques.

Materials supporting learning

- Tankönyvek, jegyzetek, letölthető anyagok:
- Bartus Gábor – Szalai Ákos: Környezet, jog, gazdaságtan, Pázmány Press, Budapest, 2014 (https://jak.ppke.hu/uploads/collection/205/file/Bartus-Szalai_Kornyezet_Jog_Gazdasagtan_2014_final.pdf)
- Valkó László - Kósi Kálmán: Környezetmenedzsment, Typotex Kiadó, 2008
- Textbooks, notes, downloadable materials:
- Gábor Bartus - Ákos Szalai: Environment, Law, Economics, Pázmány Press, Budapest, 2014 (https://jak.ppke.hu/uploads/collection/205/file/Bartus-Szalai_Kornyezet_Jog_Gazdasagtan_2014_final.pdf)

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

The evaluation of the learning outcomes stated in point 2.2 is based on the summative assessments (2 mid-term exams) for the evaluation
of the competencies acquired during the semester.

Performance assessment methods

Detailed description of performance evaluations during the study period: Summative assessment: a complex, written evaluation method of the subject's knowledge and ability-type competency elements in the form of a mid-term exam. The mid-term exam focuses on the assessment
of the acquired knowledge and its application. The course material on which the evaluation is based is determined by the lecturer of the subject.

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

- **1st summative assessment**: 50
- **2nd summative assessment**: 50
- **total**: 100

Percentage of exam elements within the rating

Conditions for obtaining a signature, validity of the signature

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Issuing grades

Excellent	94
Very good	88–93
Good	75-87
Satisfactory	63-74
Pass	50-62
Fail	0-49

Retake and late completion

1) Pursuant to the current CoS, each summative assessment can be retaken, repeated or completed late. 2) The summative assessments can be retaken, repeated or completed late for the first time during the late completion period free of charge. In the event of a retake, the new result always overwrites the old one. 3) If the student is unable to obtain a grade other than 'Fail' even with the retake, repeat and late completion possibilities according to point 1), they may make a second attempt to successfully complete the course after paying the fee specified in the regulations.

Coursework required for the completion of the subject

participation in contact classes	28
preparation for classes	12
preparation for assessments	20
total	60

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 06.05.2024.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

In order to achieve the learning outcomes set out at point 2.2, the subject consists of the following thematic blocks. In the syllabi of the courses announced in each semester, these topics are scheduled according to the calendar and other conditions.

1 The characteristics of contemporary environmental problems /complexity and globality/, the need for their "treatment", essential techniques and methods (small-regional environmental crisis management, regional economic-ecological correlations)

2 The specific form of movement of natural and economic systems, the open chains of the economy and the possibilities of closing them.

3 The contemporary characteristics of the relationship between the environment and the economy, the previous global strategies and their criticism. Concept, levels, dimensions and indicators of sustainable development. Environmental economic criticism of traditional macroeconomic indicators, shortcomings of GDP-type indicators. Presentation and critical analysis of the new type of macroeconomic indicators.

4 Possible methods of economic evaluation of the environment, methods from an environmental point of view of products-technologies-processes, life cycle from an environmental point of view of products-technologies-processes (LCA analysis). Grouping of metrics (indicators), PSR and DPSIR models.

5 Interpretation of the concept of externalities in environmental economics, grouping of external effects. Characteristics of environmental processes (referring to infrastructure planning).

6 The Pareto optimum, the optimal level of externalities. Environmental damage, environmental protection costs (case study).

7 Pollution chain model (typification of damage – intervention options).

8 The necessity of environmental regulation /internalization of externalities/ and its appearance in economic theories /Pigou tax or support, illustration of the Coase theorem, its shortcomings/. The possibility of complex technical-economic regulation of the management of externalities (industry case study).

9 The purpose, system and most important tools of environmental regulation, with particular regard to the connections between direct, economic and management type regulation. Contemporary domestic and international - primarily European Union - practice of environmental regulation.

10 Basic principles, characteristics, essential techniques and methods of environmental management (e.g. eco-marketing)

Additional lecturers

Dr. Horváth György Ádám	egyetemi adjunktus / senior lecturer	horvath.gyorgy@gtk.bme.hu
Dr. Princz-Jakovics Tibor	egyetemi adjunktus / senior lecturer	princz-jakovics.tibor@gtk.bme.hu
Dr. Valkó László	címzetes egyetemi tanár / honorary professor	valko.laszlo@gtk.bme.hu

Approval and validity of subject requirements