



SUBJECT DATASHEET

Environmental and Resource Management

BMEGT42M003

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name

Environmental and Resource Management

ID (subject code)

BMEGT42M003

Type of subject

contact lessons

Course types and lessons

<i>Type</i>	<i>Lessons</i>
Lecture	2
Practice	0
Laboratory	0

Type of assessment

mid-term
grade

Number of credits

2

Subject Coordinator

<i>Name</i>	<i>Position</i>	<i>Contact details</i>
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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

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 course unit aims to introduce engineering students with the interconnected systems of environment/environmental resources and economy, the theory and practice of sustainable development, its opportunities and domains, the European framework of environmental regulations and its domestic implications.

Academic results

Knowledge

1. The student understands the role and importance of environmental and natural resources, the interrelations of the economy and the environment, and their current conflicts, and their motivators.
2. The student comprehends the strategy of sustainable development, its levels and dimensions and their complexity.
3. The student is aware of the theoretical approaches and practical mechanisms of environmental-economic regulatory tools, and the efficiency criteria of their use.
4. The student understands the sustainability challenges encountered by economic agents.

Skills

1. The student is able to evaluate economic and engineering activities according to sustainability criteria,
2. to recognize the opportunities inherent in technical development that support resource efficiency.
3. The student can interpret the alternatives between economic growth (traditional) and sustainable development (new type).
4. The student is capable of macro- and micro-level recognition of environmental external processes,
5. to identify tools and methods that provide a solution for their reduction and resolution and their practical application.

Attitude

1. The student collaborates/cooperates with the lecturer and fellow students on acquiring knowledge;
2. expands their knowledge through continuous knowledge acquisition, is open to the use of information technology tools;
3. in accordance with the ideals of sustainability, the student strives to recognize and understand technical-economic processes as a complex system;
4. the student is determined to understand the impact of technical and economic processes and development on human well-being, and to evaluate the factors necessary to resolve their presumed harmful consequences.

Independence and responsibility

1. Depending on the student's possibilities - in a given situational environment - they make an independent and responsible decision to enforce environmental/sustainability aspects;
2. is open to well-founded critical comments;
3. in a given situation - as part of a team - constructively cooperates in solving tasks;
4. in accordance with the principles of sustainable environmental and resource management, they apply the systemic approach in his thinking.

Teaching methodology

Lectures, problem discussions and case studies. Oral and written communication, use of IT techniques.

Materials supporting learning

- Szilávik János (szerk.): Környezetgazdaságtan. Typotex Kiadó, Budapest, 2008.
- Előadásanyagok diásorai. – Lecture slides.
- Kósi Kálmán – Valkó László: Környezetmenedzsment. Typotex Kiadó, Budapest, 2006..
- W. McDonough-M. Braungart: Bölcsőtől bölcsőig – Környezettudatos tervezéstől a gyártásig. HVG Kiadó, Budapest, 2007.

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

Evaluation of the learning outcomes stated in point 2.2: through actions the summative assessment of learning outcomes of the competencies acquired during the semester (2 mid-term exams).

Performance assessment methods

Detailed description of the evaluation of learning outcomes carried out 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 two mid-term exams. The mid-term

exams focus on the assessment of the acquired knowledge and its application, thus focusing on problem recognition and solution. The course material on which the evaluation is based is determined by the lecturer of the subject, the available working time is 45 mi

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	91
Very good	85–90
Good	73–84
Satisfactory	65–72
Pass	50–64
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

participating in contact lessons	24
preparation for contact lessons	16
preparation for summative 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 Topic introduction: Specific forms of movement of natural and economic systems. Characteristics of contemporary environmental problems (complexity and globality).
- 2 Strategies formulated for the solvability of large-regional/global environmental problems (as externalities) (paradigmatic stages of international cooperation).
- 3 The concept, levels, dimensions and possible indicators of sustainable development.
- 4 Economic growth vs. sustainable development. Criticism of traditional macroeconomic indicators, new type of indicators.
- 5 Possible methods of economic evaluation of natural resources/environmental assets, technology and product evaluation from an environmental perspective. Interpretation of the concept of externalities, their optimal level (Pareto's optimum).
- 6 The necessity of environmental regulation (internalization of externalities) and its appearance in economic theories (Pigou's tax and Coase's theorem, and their critical illustration).
- 7 The system of means-methods of environmental regulation (synchronicity of environmental policy goals and means-methods of environmental regulation).
- 8 The current domestic and international – primarily – European Union practice of environmental regulation. Trends in regulation, criteria for choosing tools and methods.
- 9 The place, role and effectiveness of management-type methods in the organizational/corporate management system.
- 10 Presentation of a typical management method: the stages of developing a corporate environmental marketing concept.
- 11 Possible corporate environmental marketing strategies (in an environmental benefit-risk context).
- 12 Sustainability criteria at the consumer/household level - the essence, strategies and supporting mechanisms of sustainable, environmentally friendly consumption (e.g. eco-labelling of products).

Additional lecturers

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Approval and validity of subject requirements