# SUBJECT DATASHEET

## Environmental Management

## BMEGT42A410

# I. SUBJECT DESCRIPTION

## 1. SUBJECT DATA

**Subject name**
Environmental Management

| **ID (subject code)** | BMEGT42A410 |
|---|---|

**Type of subject**
Contact lessons

**Course types and lessons**

| *Type* | *Lessons* |
|---|---|
| Lecture | 3 |
| Practice | 0 |
| Laboratory | 0 |

**Type of assessment**
mid-term grade

**Number of credits**
4

**Subject Coordinator**

| *Name* | *Position* | *Contact details* |
|---|---|---|
| Dr. Buzási Attila | associate professor | buzasi.attila@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: **BSc in Mechanical Engineering**
Subject Role: **Compulsory**
Recommended semester: **6**

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**Direct prerequisites**

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|---|---|
| ***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: 580768/11/2022. Valid from: 26.10.2022.

# 2. OBJECTIVES AND LEARNING OUTCOMES

**Objectives**

The aim of the course is for students participating in the mechanical engineering course to get a comprehensive picture of the most pressing current sustainability related problems and the path leading to the creation of specific technical solutions for them. By integrating the ideology and thinking of sustainable development into engineering training, those who complete the subject have a modern way of thinking, which is essential for future engineering work.

**Academic results**

Knowledge

1. 1. Knows the conceptual system, the most important relationships and main theories related to the topic area of environmental management (interpretation at the microeconomic level, thus environmental management).
2. 2. Knows the role of sustainability in the operation of the company and the theory of corporate social responsibility.
3. 3. Knows the tasks of management in the field of corporate environmental protection, knows the company and its management environment (the role and responsibility of the company in the implementation of environmental goals).
4. 4. Knows problem-solving methods related to environmental management: solutions related to externalities, analysis, and decision-support methods at the microeconomic level (thus, corporate environmental management tools).
5. 5. Knows the basic economic, business, and legal rules and tools related to environmental management.
6. 6. Has a comprehensive knowledge of the basics of the field of environmental protection, which is organically related to the field of mechanical engineering, as well as their limits and requirements.
7. 7. Knows the basics of engineering challenges related to climate change, the framework of effective interventions, and their potential effects.

Skills

1. 1. The student is able to express his thoughts related to environmental protection problems in an orderly, neat, and professional manner.
2. 2. The student is able to recognize and identify environmental protection problems at the microeconomic level and plan a theoretical the solution process using the familiar corporate environmental management tools.
3. 3. The student examines environmental protection problems at the microeconomic level and their solution options using a systematic approach based on PDCA logic; the expectations and international standards related to environment-oriented management.
4. 4. The student is able to understand and use the literature sources related to the field of environmental management.
5. 5. The student is able to use the professional language of the field of environmental management in writing and orally and understands the English equivalent of the related concepts.
6. 6. The student is able to understand the mechanism of regional and global effects of micro-level decisions.

Attitude

1. 1. The student is open to learn about developments and innovation in the field of environmental management.
2. 2. The student is characterized by a way of thinking that requires a complex approach.
3. 3. The student understands the broad scope of environmental protection problems and is open to its practical application.
4. 4. The student is open to cooperation.
5. The PDCA logic plays a prominent role in the students thinking.

Independence and responsibility

1. 1. The student independently thinks through basic environmental management tasks and problems, and solves them based on given resources.
2. 2. The student understands and is able to apply the effectiveness of cooperation in solving environmental problems.
3. 3. The student uses the systematic approach in their thinking.
4. Assessing, identification of the requirements of the legal environment and compliance with them occupy an important place in the students thought process.

**Teaching methodology**

Theoretical lectures supported with practical exercises and case studies. Analysis of case studies (in the topic of environmental management and business sustainability) in groups in class.

**Materials supporting learning**

- Kósi Kálmán – Valkó László (szerk.): Környezetmenedzsment. Typotex Kiadó, Budapest, 2006.
- Bartus Gábor – Szalai Ákos: Környezet, jog, gazdaságtan. Környezetpolitikai eszközök, környezet-gazdaságtani mo-dellek és joggazdaságtani magyarázatok. Pázmány Press, Budapest, 2014.
- S. Schaltegger, R. Burritt, H. Petersen (2003): An Introduction to Corporate Environmental Management - Striving for Sustainability, Routledge

# II. SUBJECT REQUIREMENTS

## TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

**General Rules**

The evaluation of the learning outcomes stated in point 2.2. is 2 mid-term written performance evaluations (summative learning performance
evaluation).

**Performance assessment methods**

A detailed description of the performance evaluations carried out during the study period: summative academic performance evaluation:
a complex, written evaluation method of the subject and the competence elements of the subject and knowledge, ability, attitude, as well as independence and responsibility type in the form of a written test. The test basically focuses on the understanding and application
of the acquired basic knowledge (concepts, definitions, characteristics of methodologies) and connections. The available working time is 25 minutes.

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

- **1st summative learning performance evaluation**: 50
- **2nd summative learning performance evaluation**: 50
- **Sum**: 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 | 70–84 |
| Satisfactory | 60–69 |
| Pass | 50–59 |
| Fail | 0-49 |

**Retake and late completion**

1) Replacement of individual mid-year performance evaluations is possible, as determined by the BME CoS. 2) The summative learning performance evaluation can be replaced or corrected in a combined form during the re-take period - for the first time - free of charge. In the case of improvement, the previous and the new result, which is more favourable for the student, will be taken into account. 3) If the student is unable to obtain a grade other than unsatisfactory even with the re-take according to point 2), he/she may repeat the test a second time, in a combined form, upon payment of the fee specified in the regulations.

**Coursework required for the completion of the subject**

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|---|---|
| contact lesson attendance | 42 |
| preparation for summative learning performance evaluation | 50 |
| independent learning of designated written curriculum | 28 |
| total | 120 |

**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. can be achieved. Timing of the topics may be affected by calendar or other circumstances in each semester.

1 Introduction, description of requirements. Basics of environmental management, connection to mechanical engineering studies. The environmental crisis. Reasons, driving forces, trends, economic actors. The economic/environmental economics foundations of sustainability. Management of market failures - environmental policy instruments. Basics of resource management. Indicators describing development, footprint-type indicators, environmental performance evaluation. Environmental factors and effects, the basics of industrial ecology. The concept of environmental risk and eco-design. LCA. ISO 14001, EMAS. Auditing, eco-labelling and sustainable consumption. Environmental conflicts and their corporate management. Climate change and energy management. The relationship between companies and climate change.

**Additional lecturers**

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|---|---|---|
| Dr. Buzási Attila | egyetemi docens / associate professor | buzasi.attila@gtk.bme.hu |
| Dr. Csuvár Ádám | egyetemi adjunktus / senior lecturer | csuvar.adam@gtk.bme.hu |

**Approval and validity of subject requirements**