# SUBJECT DATASHEET

## Risk Evaluation and Risk Management

## BMEGT42M417

# I. SUBJECT DESCRIPTION

## 1. SUBJECT DATA

**Subject name**
Risk Evaluation and Risk Management

| **ID (subject code)** | BMEGT42M417 |
|---|---|

**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**
3

**Subject Coordinator**

| *Name* | *Position* | *Contact details* |
|---|---|---|
| Csigéné Dr. Nagypál Noémi | senior lecturer | csigene.noemi@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 Environmental Engineering**
Subject Role: **Compulsory for the specialisation**
Recommended semester: **4**

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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: 580439/11/2024 registration number. Valid from: 29.05.2024.

# 2. OBJECTIVES AND LEARNING OUTCOMES

**Objectives**

The course aims to provide knowledge about theoretical background and special methods of monetary and alternative valuation of the environment. Introduce the valuation of natural capital and ecosystem services, presenting Hungarian and international experiences. Introduce the stakeholders, areas and methods of environmental risk assessment.

**Academic results**

Knowledge

1. The student has an overview of the role of monetary environmental assessment and its possible areas of use.
2. Knows the individual environmental assessment methods, their theoretical background and the conditions and methods of their application.
3. Knows the social science aspects of environmental risk management.

Skills

1. The student is able to recognize the necessity and possibility of applying environmental assessment methods.
2. The student is able to participate in complex risk management tasks in cooperation with other experts.

Attitude

1. The student is aware that monetary environmental assessment and environmental risk management require an interdisciplinary approach and also involve ethical issues.
2. Uses a systematic approach in their thinking.

Independence and responsibility

1. The student recognizes the economic-social connections and embeddedness of environmental risks, makes appropriate and responsible professional decisions;
2. knowing the involvement of other specialist fields in the field of financial environmental assessment and risk management, they cooperate effectively with economic and legal specialists;
3. aware of the continuous development of environmental assessment methods, strives to monitor changes.

**Teaching methodology**

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

**Materials supporting learning**

- 1. Dr. Szlávik János (szerk.): Környezetgazdaságtan. 3. fejezet. (Csigéné Nagypál Noémi) Budapesti Műszaki és Gazdaságtudományi Egyetem. Typotex Kiadó, Budapest, 2007.
- 2. Marjainé Dr. Szerényi Zsuzsanna (szerk.): A természetvédelemben alkalmazható közgazdasági értékelési módszerek. Környezetvédelmi és Vízügyi Minisztérium, Budapest, 2005.
- 3. Guidelines for Environmental Risk Assessmentand Management. Green Leaves III
- https://www.gov.uk/government/publications/guidelines-for-environmental-risk-assessment-and-management-green-leaves-iii
- Ajánlott folyóiratok/recommended journals:
- a. Ecological Economics
- b. Land Economics
- c. Journal of Agricultural and Resource Economics
- d. Journal of Environmental Economics and Management
- e. Journal of Environmental Planning and Management

# II. SUBJECT REQUIREMENTS

## TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

**General Rules**

The learning outcomes stated in point 2.2 are evaluated on the basis of the performance shown in the summative assessments (two mid-term
exams) and the formative assessment (practical task).

**Performance assessment methods**

A. 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 part of the curriculum that forms
the basis of the evaluation represents the topics covered in the lectures before the mid-term exam. 2) Formative assessment: a complex evaluation method of the knowledge, ability, attitude and independence and responsibility competence elements of the subject in the form of a practical task. The framework, deadline and evaluation method of the practical task are determined by the instructor. In the case of an overall "Excellent", "Very good" or "Good" acquired result from the summative and formative assessments, a proposed grade can be obtained. B. Detailed description of performance evaluations during the exam period: Written exam: if the student does not obtain a proposed grade or does not accept it, they can take a written exam during the exam period.

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

- **1st summative assessment**: 33
- **2nd summative assessment**: 33
- **formative assessment**: 34
- **Total**: 100

**Percentage of exam elements within the rating**

- **Written exam (in absence of a proposed grade)**: 100
- **Total**: 100

**Conditions for obtaining a signature, validity of the signature**

The condition for obtaining the signature is obtaining at least a "Pass" rating based on the two summative assessments and the formative assessment. The signature is valid according to the provisions of the CoS.

**Issuing grades**

| | |
|---|---|
| Excellent | 92 |
| Very good | 85-91 |
| Good | 70-84 |
| Satisfactory | 55-69 |
| Pass | 40-54 |
| Fail | 0-39 |

**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. 4) Due to the nature of the formative assessment, it cannot be retaken, repeated or completed late. 5) Retake, repeat and late completion of exams is possible according to paragraphs 121 and 123 of the CoS.

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

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|---|---|
| participation in contact lessons | 28 |
| preparation for presentation | 29 |
| preparation for evaluations | 33 |
| total | 90 |

**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 Introduction. Evaluation methods, shortcomings of traditional methods. Advantages and criticism of monetary evaluation, areas of use.

2 Natural capital and ecosystem services, assessment at the global level.

3 Reasons for a special approach to evaluation, free goods, externalities, social discount rate.

4 WTP and WTA. Comparison of cost-benefit analysis and cost-effectiveness analysis.

5 Grouping of environmental assessment methods, cost-based methods.

6 Expressed preference methods, the travel cost method.

7 The hedonic price method and the hedonic wage method. Advantages and limitations of declared preference methods.

8 Revealed preference methods. The steps of creating a questionnaire. Experiences and case studies of directly revealed preference methods and their application.

9 Indirectly revealed preference methods. Transfer of benefits, citizen's council.

10 Similarities of environmental assessment and risk management, types of risk.

11 Environmental risk management approaches and corporate application.

**Additional lecturers**

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**Approval and validity of subject requirements**