*General Informations:*

**Curriculum:** Civil Engineer BSc

**Name of Course:** **ENVIRONMENTAL PROTECTION FOR ENGINEERS**

**Course Code:** MSB020ANEP
**Semester:** 05
**Number of Credits:** 2
**Allotment of Hours per Week:** 2 lectures a week
**Evaluation:** mid-term grade
**Prerequisites:** –

**Course director:** **Dr Tibor Pécz PhD, senior research fellow**
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## General Course Description

Short history of the environmental protection (EP). Concepts and fields of the EP. The regulation and the institution of the EP in Hungary and EU. The process of pollution. The elements of the environment, its characteristics and pollution data. New fields in the EP. Global problems. Suggested solutions. Renewable energy sources.

**Learning Outcomes**
To give a basic knowledge of the environmental processes and the environmental protection to engineering students.

**Subject content**
Lecture Topics: EP history, definitions of EP, elements of enviroment, new ages in EP, global problems and possibilities, renewable energies.

**Examination and evaluation system**
*In all cases. Annex 5 of the Statutes of the University of Pécs, the* ***Code of Studies and Examinations (CSE) of the University of Pécs*** *shall prevail*
*https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022_06_23_ENG.pdf*

**Attendance**
In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description..

Method for monitoring attendance: attendance sheet.

**Assessment**
*A.) Course resulting in mid-term grade (PTE TVSz 40§(3))*

**Mid-term assessments, performance evaluation and their ratio in the mid-term grade**

| Type | Assessment | Ratio in the mid-term grade |
|---|---|---|
| *online test* | *max 40 points* | *40 %* |
| *essay* | *max 20 points* | *20 %* |
| *presentation* | *max 40 points* | *40 %* |

**Opportunity and procedure for re-takes (PTE TVSz 47§(4))**
The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

**Requirements for the end-of-semester signature**

Attandence on lectures min. 70%, writing the online test min. 40%.

***Re-takes for the end-of-semester signature*** *(PTE TVSz 50§(2))*
*The specific regulations for grade betterment and re-take must be read and applied according to the general Code of Studies and Examinations. E.g.: all the tests and the records to be submitted can be repeated/improved each at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.*

**Grade calculation as a percentage**
Based on the aggregate performance according to the following table.

| Grade: | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| | A, excellent | B, good | C, satisfactory | D, pass | F, unsatisfaying |
| Performance in % | 85%-100% | 70%-84% | 55%-69% | 40%-55% | 0-39% |

**Readings and Reference Materials**

Recommended:

Slides of lectures – it can be reached on Teams.
Marquita K. Hill (1997): Understanding Environmental Pollution. Cambridge University Press.
Houghton J. (2009): Global Warming – The Complete Briefing. Cambridge University Press.
Hanrahan G. (2012): Key Concepts In Environmental Chemistry. Elsevier Inc.
Moser, M. (1997): Circulations in Nature and Society. Környezetvédelmi és Területfejlesztési Minisztérium. (Ministry of Environmental Protection and Land Management) Budapest.
Miller, G. T. (1982): Living in the Environment. Wadsworth Publishing Company. Belmont. California.
Rausz, A. (ed.) (2005): Environmental Statistical Yearbook of Hungary 2004. Hungarian Central Statistical Office. Budapest.

**Methodology**

Consultation amoung instructor and students. Oral interpretation using Microsoft Power Point presentation and occasionally visiting in works, service companies. Project technique: working presentation of students on environmental fields.

## *Detailed requirements and schedule of the Course*

**Tasks and minimum requirements**

1. Writing online test (simple choise) min 40%.
2. Wrinting an essay of optional field on EP min 40%. The essay is an electronic script only (text with tables, graphs, pictures etc.) min. 10 max. 15 pages of A4 in Times New Roman 12 of letter size.
3. Oral presentation for instructor and mates from the same optional field (like in essay) of EP min 40%.

**Schedule**

**Lecture**

| week | Topic | Compulsory reading; page number (from … to …) | Required tasks (assignments, tests, etc.) | Completion date, due date |
|---|---|---|---|---|
| 1. | Information about course. Introduction to EP. | slides of lectures | … | … |
| 2. | The history of the EP. Juristical regulation and institution of the EP in Hungary and EU. | slides of lectures | | |
| 3. | Basic concepts. Process of pollution. | slides of lectures | | |
| 4. | Atmosphere and its processes. | slides of lectures | | |
| 5. | Water protection. Land and soil protection. | slides of lectures | | |
| 6. | Waste management. Noise, vibration and radiation. New fields in the EP. | slides of lectures | | |
| 7. | ***Online test.*** | slides of lectures | test | |
| 8. | Global problems. | slides of lectures | | |
| 9. | ***Autumn Break*** | | | |
| 10. | ***Deadline of essay.*** Renewable energy sources. | slides of lectures | essay | |
| 11. | Oral presentation of students 1 | | presentations | |
| 12. | Oral presentation of students 2 | | presentations | |
| 13. | Oral presentation of students 3 | | presentations | |
| 14. | First supplement of the online test | | re-takes | |
| 15. | Second supplement of the online test | | re-takes | |



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senior research fellow
course director

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