



MISKOLCI EGYETEM

**MŰSZAKI FÖLD- ÉS
KÖRNYEZETTUDOMÁNYI
KAR**

ECOLOGY AND NATURE PROTECTION

MS IN ENVIRONMENTAL ENGINEERING

2024/25. I.

SUBJECT COMMUNICATION DOSSIER

UNIVERSITY OF MISKOLC
FACULTY OF EARTH AND ENVIRONMENTAL SCIENCES
AND ENGINEERING
INSTITUTE OF GEOGRAPHY AND GEOINFORMATICS

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1. COURSE DESCRIPTION

Course Title: Ecology and Nature Protection	Code: MFKFT710010
Instructor: Dr. Seres Anna	Responsible department/institute: Institute of Geography and Geoinformatics
	Subject status: compulsory
Position in curriculum (which semester): 1.	Pre-requisites (if any): -
No. of contact hours per week (lecture + seminar): 1+2	Type of Assessment (examination/practical mark / other): practical mark
Credits: 3	Course: full time
<p>The aim of the course: To introduce the basics of ecology as a biology discipline, and nature protection. To present the process of knowing the nature protection situation of an area. To make students sensitive for the topics of nature protection. To introduce consequences of human activities, focusing on engineering work and land use. To introduce methods of information gathering and documentation of any modification in nature which impact living and nonliving nature elements.</p> <p>Competencies to evolve: The environmental engineer knows, and apply the scientific and technical theory, and practice. The environmental engineer knows the publicizes, and opinion leader methods related to environmental engineer activity. The environmental engineer is able to plan, implement, and maintain engineering interventions, occurred on the field of soil-, geological formation-, water-, air-, vibration-, and noise-protection, wildlife-protection, remediation, and waste management. Active professional English language skills.</p>	
<p>Course Description: Concept and subject of ecology. Ecological environment, biotic and abiotic ecological factors, niche, biotope, species and population, community. Anthropogenic impacts. Biodiversity, native and non-native (introduced, invasive) species. Environmental protection and nature conservation. Natural value. Potential natural status. Degree of naturalness. Local, regional and global problems. Fragmentation, edge effect, biocorridor, stepping stones. Authorities, formal and informal nature protection. Monitoring, research, education, popularization, friendly nature protection.</p>	
<p>Assessment and grading: Signature: Participation in lessons and field trips. Grade: Field trip report (written submission), nature conservation system of the student's home country (oral presentation).</p> <p>Grading: 100–85%: excellent (5); 75–84%: good (4); 63–74%: satisfactory (3); 50–62%: pass (2); 50–0%: failed (1).</p>	
<p>Compulsory or recommended literature resources:</p> <ul style="list-style-type: none"> • Michael Begon, John L. Harper, Colin R. Townsend: ECOLOGY. Individuals, Populations and Communities. Second Edition. Blackwell Scientific Publications, 1990. • Scott Ferson and Mark Burgman (Eds.): Quantitative Methods for Conservation Biology. Springer, 2002, 322 p. • Malcolm Hunter and James Gibbs: Fundamentals of Conservation Biology – 3rd Edition. Blackwell Publishers, 2006, 497 p. • Richard B Primack: Essentials of Conservation Biology – 6th edition. Sinauer Associates, 	

2014, 603 p.

- Stephen B Glass, Evelyn A Howell and John A Harrington: Introduction to Restoration Ecology. Island Press, USA, 2011, 464 p.

2. DETAILED COURSE DESCRIPTION

Date	LECTURE
09.09.	Concept and subject of ecology.
16.09.	Ecological environment, ecosystems, abiotic and biotic ecological factors, ecological tolerance.
23.09.	Ecosystems, abiotic factors: sunlight, temperature, atmosphere, water.
30.09.	Abiotic factors: soil. Biogeochemical cycles: carbon, nitrogen. Antropogen effects in these cycles.
07.10.	Biogeochemical cycles: water, oxygen, phosporous. Antropogen effects in these cycles. Ecosystems: biotic factors. Supra-individual levels of organization: individual, population, community, ecosystem, biom, biosphere.
14.10.	Population ecology. Population dynamics. Population size, density, dispersal, age distrubution. Population growth, K- and R-strategists. Population and intraspecific interactions: symbiosis, predation, parazitism, etc..
21.10.	Communities: diversity, characteristic species, structure. Changes in communities: circadian rythm, aspects, succession.
28.10.	Educational break.
04.11.	Climate belts and bioms of the Earth.
11.11.	Anthropogenic effects on ecosystems. Biodiversity, native and non-native (introduced, invasive) species. Environmental protection and nature conservation.
18.11.	Natural value. Potential natural status. Degree of naturalness. Fragmentation, edge effect, biocorridor, stepping stones.
25.11.	Local, regional and global problems.
02.12.	Authorities, formal and informal nature protection. Monitoring, research, education, popularization, friendly nature protection.
09.12.	Acquiring the practice mark.

Date	SEMINAR
25.10.	Field trip
22.11.	Field trip
02.12.	Student presentations
09.12.	Student presentations

3. SAMPLE FIELD TRIP REPORT

4. OTHERS

No other requirements.