

Ecology and Environmental Protection (Horticulture, IInd Year of study, IVth Semester)

Credit value (ECTS) 2

Course category

Domain (Imposed)

Course holder:

Lecturer Dr. Cristina SLABU

Objectives (lecture and practical course work)

The aims of this course are

- To provide knowledge of general ecology in order to understand basic principles, structure and function of ecosystems
- To raise the students' awareness for responsible and sustainable use of natural resources and for environmental protection
- To teach the students how to avoid environmental pollution
- To provide theoretical knowledge and practical skills for recognition, analysis, and interpretation ecological problems. Students should gain all the necessary skills to independently provide solutions for environmental problems.

Contents (syllabus)

Course (chapters / subchapters)
Ecology - biological science with interdisciplinary approach, with practical and social character: definition, object of study, historic; research methods used in ecology.
Systemic organization of living matter: general systems theory; systems classification; characteristics of biological systems; hierarchy of biological systems.
Organisms and their environments: abiotic and biotic factors; laws of Ecology.
Ecosystem: general systems theory; characteristics of biological systems; the concept of ecosystem; biotope; biocoenosis; ecosystem structure; ecosystem functions; ecosystem dynamics; types of natural ecosystems.
Agricultural ecosystem: definition; structure and functions; origin and evolution; classification; productivity of agricultural ecosystems; agricultural ecosystems and human nutrition.
Horticultural ecosystem - an agroecosystem with specific characteristics
Anthropogenic impact on the environment: loss of biodiversity and extinctions; soil degradation and reduction of its fertility; environmental pollution, problems and control measures.
Sustainable development: ecological principles for management of natural resources and environmental protection; optimal use of natural resources in ecosystems; conservation of genetic resources.
Environmental protection: environmental protection in Romania in the context of the global environmental protection.

Practical course
Management problems: information of students about course aims, the targeted skills, the criteria and methods of evaluation, work safety rules; laboratory equipment and utensils.
Structural and functional analysis of an ecosystem. Quantitative analysis of abiotic factors: temperature, humidity, atmospheric pressure, soil characteristics.
Ecological adaptations of plants to different environmental conditions (work carried out in Botanical Garden - Iasi).
Horticultural Ecosystems: types, structure, function, environmental impact (field observations at "V. Adamachi" Research and Experimental Farm).
Aspects of the water quality under human impact: analysis of some physical and chemical indicators of water quality.
Aspects of the soil quality under human impact: analysis of some physical and chemical indicators of soil quality.
Final colloquium of knowledge evaluation.

References

1. Berca M., 2000 – *Ecologie generală și aplicată*. Ed. Ceres București.
2. Cogălniceanu, D., 2012 – *Ecologie și protecția mediului*. Politehnica Press.
3. Gabrivan, C. F., & Horaicu, C. N., 2010 – *Protecția mediului în Uniunea Europeană*. Ed. Tipo Moldova, Iași.
4. Gavrilesco E., 2008 – *Surse de poluare și agenții poluanți ai mediului*, 2008, Ed. Sitech, Craiova.
5. Lupașcu A., 2004 – *Biogeografie cu elemente de ocrotirea și conservarea biodiversității*. Ed. Terra Nostra, București.
6. Maxim. A., 2008 – *Ecologie generală și aplicată*. Ed. Risoprint, Cluj-Napoca.
7. Mohan Gh., Ardelean A., 2006 – *Parcuri și rezervații naturale din România*. Ed. Victor & Victor, București.
8. Pârvu C., 2001 – *Ecologie generală*. Ed. Tehnic, București.
9. Schulze Ed, Beck E, Müller-Hohenstein K., 2005 – *Plant Ecology*. Ed. Springer Berlin/Heidelberg.
10. Stugren B., 1994 – *Ecologie teoretică*. Ed. Sarmis, Cluj-Napoca.
11. Chiopu D., Vântu V. (coord.), 2002 – *Ecologie și protecția mediului*. Ed. "Ion Ionescu de la Brad", Iași.
12. Slabu Cristina, 2018 – *Ecologie și protecția mediului – suport de studiu*. Ed. "Ion Ionescu de la Brad", Iași.
13. Toma L. D., 2009 – *Ecologie și protecția mediului*. Ed. PIM, Iași.
14. Tucaliuc R. A., 2015 – *Lucrări practice de chimia mediului*. Ed. PIM, Iași.
15. Vîntu V., 2000 – *Ecologie și protecția mediului*. Ed. "Ion Ionescu de la Brad" Iași.
16. *** Legislație de mediu, actualizat

Evaluation

Evaluation forms	Evaluation Methods	Percentage of the final grade
Colloquium	Oral evaluation	60%
Assessment of activity during the semester.	Oral evaluation during the semester, verification tests, laboratory colloquium.	40%

Contact

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