

ECOLOGICAL RECONSTRUCTION AND LANDSCAPE MANAGEMENT

Specialization Environmental engineering, 4th Year of study, 1st Semester

Nr. transferable credits: 4

Domain discipline: Domain-specific discipline (mandatory)

Discipline holder: Lecturer SANDU TATIANA Ph.D.

The objectives of the discipline (course and applications):

The course and practical applications have the following objectives:

- the acquisition of the knowledge to ensure the application of the best methods of ecological reconstruction;
- the use of information on the best technologies for the use of ornamental plants in ecological reconstruction projects;
- identification and application of technical solutions in solving some problems related to the ecological reconstruction in situ and ex situ of the natural landscapes;
- analysis of ecological reconstruction technologies applied to the protected areas in order to diminish the human impact on the environment.
- knowledge of the methods of analysis and valorization of landscapes;
- application of modern methods of investigating landscape assemblies in order to eliminate / reduce the dysfunctions and critical states that affect the landscape structures and elaborate strategies focused on ecological reconstruction, protection and conservation of protected areas.
- training of communication skills and operationalization of the knowledge acquired through the elaboration and support of reports focused on the in-depth study of case studies presented in the thematic related to the course

Content of the discipline

COURSE (Chapters / Subchapters)
Head. 1. Definition and purpose of ecological reconstruction. The concept of ecological reconstruction. Definition of ecological reconstruction. Purpose and objectives of ecological reconstruction. Research methods.
Head. 2. Brief history of environmental protection in Romania. The need to protect the environment. The objectives of environmental protection. Strategies regarding environmental protection.
Head. 3. Protecting the biosphere. The importance of protected natural areas. Strategies regarding biosphere protection. Types of protected areas.
Head. 4. The MAB program. Definition, origin and purpose of the MAB program. Biosphere reserves. Creation of the World Biosphere Reserves Network. Scheme of operation of the biosphere reserves.
Head. 5. The Natura 2000 European Ecological Network. Definition, purpose, functionality and implementation of the Natura 2000 Network in Romania.
Head. 6. Landscapes and their ecological reconstruction. Generalities regarding landscapes. The notion of landscape. Landscape types. Landscape features. Landscape states. Typology of landscapes.
Practical work
Generalities regarding ecological reconstruction in the world. Examples and case studies
Types of natural landscapes.
Lanscapes` analysis. Landscape visible subsystem.
Identifying and evaluating landscapes.
The use of bioindicator plants in the ecological reconstruction of degraded terrestrial ecosystems.
The study of biologic indicators of pollution. The use of the ornamental trees and shrubs for biomonitoring pollution.
Ecological reconstruction of the major traffic roads (highways).
Plants used for the ecological reconstruction of natural landscapes degraded by industrial activities.
Ways of ecological reconstruction of natural landscapes degraded by intensive agriculture.
The use of dendrologic plants in the ecological reconstruction of forestry landscapes (forestry ecological reconstruction).
The use of plants tolerant to salinity in landscapes ecological reconstruction.
Geological ecological reconstruction and the landscape integration of degraded lands by surface mining.
The use of plants in the reconstruction of alpine landscapes.
The ecological reconstruction of protected landscapes. Case studies.

Bibliography

1. **Muntean O.L., 2005** - *Environmental impact assessment*, House of Science Book, Cluj-Napoca.
2. **Sandu Tatiana, 2011** - *National, natural parks and biosphere reserves*, Ion Ionescu Publishing House from Brad, Iasi.
3. **Sandu Tatiana, 2015** - *Ecological Landscape Reconstruction*, Ion Ionescu Publishing House from Brad, Iași.
4. **Vintu V., 2000** - *Ecology and environmental protection*. "Ion Ionescu de la Brad" publishing house, Iasi.

Final evaluation

Forms of evaluation	Modalities of evaluation	Percentage of the final note
Written exam	Acquiring knowledge presented at lectures and from the supplementary bibliography	60%
Practical works	Attendance monitoring	10%
	Individual study on a subject imposed	30%

Contact

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