University of Bucharest
Faculty of Biology
Department of Systems Ecology and Sustainability
School of Doctoral Studies in the Field of Ecology
Field of doctoral studies*: Environmental Science*

Subject Sheet

1. About the program

1.1 Higher education institution	**UNIVERSITY OF BUCHAREST**
1.2 Faculty	**BIOLOGY**
1.3 Department	**SYSTEMS ECOLOGY AND SUSTAINABILITY**
1.4 Field of study	**ENVIRONMENTAL**
1.5 Cycle of studies	**DOCTORAL**
1.6 Study program - Qualification	**ADVANCED UNIVERSITY STUDIES - PHD**

2. Subject data

Subject						Natural Capital	
Year of study	I	Semester	I	Evaluation	E	Subject status	AP-deepening

3. Estimated total time (Hours per semester of teaching activities)

Number of hours/week	1.3	From which: course	1.3
Total hours	18	From which: course	18
Total hours of individual activity	126		
Total hours per semester	150		
Number of credits	6		

4. Specific competences acquired	
Professional competences	• Use of a wide range of sources of information • Critical analysis and objective interpretation of information/data • Selecting, based on critical thinking, the appropriate approach for assessing the functions of ecological systems. • Knowledge and understanding of the general principles underlying the integrated approach to ecological complexes. • Development of research skills, ability to adapt to new situations, creativity, ability to develop small projects
Transversal competences	• Developing the ability to self-train, think independently and use their skills in problem solving. • Developing communication skills • The ability to critically evaluate their individual performances within the team, the development of skills to work effectively and collegiately in a team. • The use of theoretical notions in solving practical problems • Developing the ability to organize and plan activities to achieve objectives.

5. Objectives of the subject (based on the grid of specific competences accumulated)

5.1 The general objective of the subject	The course uses the fundamental elements of the ecosystem theory to clarify and facilitate the correct interpretation of the content of some key concepts used to characterize the structural and functional complexity of the natural capital (CN) or to design programs and plans for integrated and adaptive management.
5.2 Specific objectives	• Acquiring the necessary knowledge for the integrated approach and the functional evaluation of natural capital. • Learning methods and tools for evaluating the structure and functions of natural capital components and designing adaptive management programs.

6. Content

Course	**Teaching methods**	**Nr. Hours/Observations**
1. Analysis of definitions and interpretation variants of biodiversity concept and objectives of UN-CBD, CITES and other international conventions, EU directives, national and European strategies	Lecture. Exposure with the help of modern means; Explanation based on the visual material.	1 Online
2. The argumentation of the quasi-total overlap of the concepts meaning – Natural Capital and Biodiversity.		1 Online
3. To operationalize the concept and strategic objectives of conservation and sustainable use of biodiversity components, broad, holist and hierarchical interpretation is promoted.		1 Online
4. The levels of interpretation and identification are indicated: i) genetic diversity; ii) taxonomic diversity, richness of species; iii) diversity of ecosystems (eco-diversity); and iv) ethnic, linguistic, cultural diversity and social organization.		1 Online
5. It is specified which levels of biodiversity constitute the infrastructure of the Natural Capital (NC).		1 Online
6. Controversies related to the "criticality of natural capital" / or "Conservation of biodiversity", the causes that promote them and the ways to overcome them.	Debate, problematization, interrogation (stimulation of teacher-student dialogue).	1 Online
7. It is specified which are the fundamental ecological processes that ensure the functions of NC components and the relationship between the composition and structure of ecosystems, on the one hand, and functional performance, on the other hand. They perform all or partially the four main functions: a) production; b) regulation; c) support; d) informational/cultural.		2 Online
8. Factors limiting the level, quality and accessibility of data and knowledge on the composition, structure and functional capacity of the Natural Capital, and the identification, debate and promotion of fundamental and applied research issues.		2 Online
9. Addressing and clarifying the relationship between fundamental ecological processes, ecosystem functions		2 Face to face

and flows of resources and services; clarifications on the categories of functions and services.		
10. The interdependence between changes caused by the natural and human main categories of stressors, in the structural configuration and functional capacity of ecosystems, on the one hand, and the quality, diversity and density of service fluxes that support social and industrial metabolism.		2 Face to face
11. Analysis of methods for assessing the ecological footprint, highlighting the limits and advantages and proposing ways to reduce the ecological footprint.		4 Face to face

7. Corroborating the contents of the subject with the expectations of the representatives of the epistemic community, professional associations and representative employers in the field related to the program

- The course has a similar content to courses in other European universities and considers the level of preparation of students.
- The course guarantees the acquisition by the PhD students of new skills that will give them an extra chance in the competition on the labor market and an easier adaptation in the specialized institutions.
- The course is held in an online system in a proportion of 60%.

8. References

1. Mari Ann, J., Folke, C., Costanza, R., (Editors), 1994, Investing in Natural Capital: The Ecological Economics Approach to Sustinability, Island Press, Waschington D.C.
2. Vadineanu., A., 1998, Dezvoltarea durabila: Teorie si practica, vol.1, Editura Universitatii din Bucuresti, Bucuresti.
3. Vadineanu, A., 2004, Managementul Dezvoltarii. O abordare ecosistemica. Bucuresti : Ars Docendi.
4. Garrod, G., Willis, G.K., 1999, Economic valuation of the Environment: Methods and Case Studies. Edward Elgar, Cheltenham, UK

9. Evaluation

Activity Type	Assessment criteria	Evaluation methods	Percentage from the final grade
9.1. Course	Knowledge of the subject information	Oral examination	50%
9.2. Practical	Debates/analyses of case studies	Oral examination	50%

Date

Signature of the corse holder