Discipline sheet

The name of the discipline	**Socio-natural ecological complexes and the peculiarities of postmodern science (level 2)**	cod:

Year of study I	PhD	First semester		Discipline status (DS-deepening / specialization)	MD (mandatory discipline)

Number of hours per week				Total semester hours	Total hours of individual activity	Number of credits	Type of evaluation (**P**-en route, **C**-colloquium, **E**-exam, **M**-mixed)	LANGUAGE OF TEACHING
C	S	L	Pr.					
2				30	130	7	E	Romanian

PURPOSE/ Objectives	• Theoretical substantiation of the conceptual framework regarding the nested systemic organization of the Ecosphere / "Terrestrial natural and social environment, life support systems" • Identifying the complexity of the ecosphere as a spatio-temporal hierarchy of "socio-natural ecological macrosystems or Socio-Ecological Systems • Epistemological and semantic clarification of scientific concepts and terms used in academic, political and public discourse; adopting a coherent communication language in the field of Integrative Ecology / Environment and Development Sustainability; promoting the holistic vision regarding the architecture of the model of sustainable development of the socio-natural ecological macrosystems. • Defining and promoting the "post-modern" conceptual framework applicable to research on ecological macro-systems: socio-natural (socio-ecological systems) in order to contextualize and certify social or co-develop the transdisciplinary knowledge necessary to substantiate sustainable development governance policies and programs • Accelerated economic and demographic growth versus the erosion of the biostructure (biodiversity) of Natural Capital (CN), coupled with climate change: the global ecological crisis and / or the crisis of spatial and functional relations between the components of the natural and social environment.
The general theme of the course	• The Global Transition to the "Sustainable Development / MDS Model": Retro and Prospective Analysis (1992-2030) Focusing on Challenges and Opportunities for Integrative Science - Ecology and Sustainability of Socio-Natural Ecological Macrosystems (from UNCED / Rio / 92 / Agenda 21 at the UN Rio + 20 Summit / Agenda 2030) - 3 hours • Levels of intra, inter and transdisciplinary integration in the emergency and development process of the Global Integrative Ecology. • Analysis and evaluation of structural models, developed in the period 1990/2015 to reflect: i) the structural and functional complexity of the components of nature and society and b) the instrumental value of models for the design and implementation of research, education and governance programs.

	• The impact of the structural model developed, adopted and applied, within the "Doctoral School program" in Ecology, to identify ecological, socio-natural macrosystems (Socio-ecological as an object of sustainable development, on the interpretation and application of the 2030 Agenda conceptual framework). • Design of the operational support platform for transdisciplinary research and governance of the dynamics (development) of socio-natural macro-systems: positioning and role of the doctoral school of Ecology / UB. • Interdependence of processes: i) the emergence and evolution of Ecosystem Ecology at the level of Global Integrative Science, which allows the identification, investigation and understanding of the complexity of the environment: natural and social and; ii) the evolution of the conceptual model used in the design and implementation of "post-modern" research programs whose objectives aim at the development of scientific knowledge and the co-development of transdisciplinary knowledge. • Clarifying the meaning and operationalizing the concept of sustainable development • Characterization of the conceptual model for "post-modern" research of structural and functional complexity, in the case of socio-natural macrosystems: dynamic research that integrates scientific and social progress, covers the heterogeneity of spatial organization and distribution; long-term, retro and prospective research; physical infrastructure for measuring key variables, data storage and processing; modeling etc. • Reflecting the ways and ways of promoting the particularities of post-modern research in the structure of the doctoral school of Ecology / UB. Each topic is assigned 3 hours.
TEACHING METHODS	Lecture, problematization, debates
Professional skills	• Ability to promote and use ecosystem theory and hierarchical organization in the process of identifying and addressing the complexity of "natural environment and social life support" as a hierarchy of ecological systems coupled nature-society • Ability to contribute to the design and implementation of long-term research programs and integrated and adaptive management plans • Ability to contextualize and integrate the individual research plan, regardless of the level of complexity addressed (eg populations, communities, ecosystems, social and industrial metabolism) as part of the long-term socio-ecological research program. • Ability to transfer the results of individual research into the transdisciplinary integration phase and to participate effectively in the development of policies and strategies and the solution of problems specific to the sustainable governance of ecological macrosystems: nature-society • Ability to effectively participate in the succession of phases of intra, inter and transdisciplinary integration of scientific and extra-scientific information and knowledge • Ability to integrate and work in multidisciplinary teams and complex networks (including social partners) for the co-development of transdisciplinary knowledge.

Mandatory bibliography	• Vădineanu, A., 1998, Dezvoltare Durabilă: Teorie și Practică (1), Editura "Ars Docendi", Universitatea din București, București

	• Botnariuc, N.,2003, Evoluția sistemelor biologice supraindividuale. Editura Academiei Române, București • Vădineanu, A., 2004, Managementul dezvoltării: o abordare ecosistemică, Editura "Ars Docendi" Universitatea din București, București • Bonan, G., 2002, Ecological Climatology: concepts and applications, Cambridge University Press, Cambridge • Gunderson, H.L., Holling, G.S., 2002, Panarchy: Understanding transformations in human and natural systems. Island Press, Washington • Sterner et al., 2019, Policy design for the Anthropocene. Nature Sustainability, vol. 2, p. 14-21. • Steffen, W. et al., 2018, Trajectories of the Earth System in the Anthropocene, PNAS, vol. 115 (33). www.pnas.org/cgi/doi/10.1073/pnas • Angelstam, P., et al., 2018, LTSER platforms as a place based transdisciplinary research infrastructure. Landscape Ecology https://doi.org/10.1007/s 10980-018-0737.6 • Vădineanu, A., 2018, Contextualizarea și fundamentarea teoretică și operațională a "Agendei 2030 pentru Dezvoltare Sustenabilă/ONU 2015", NCDD . www.CNDD.ro • Singh, J.S., Vădineanu, A., 2010, Conceptualising long-term socio-ecological research (LTSER): Integrating socio-economic dimensions into long-term ecological research. In Muller, F., Schubert, H., Klotz, S. (Eds) "Long-term ecological research: Between theory and Application, Springer, p. 377-388.

Assessment	criterions	Knowledge of the procedures (stages, requirements) for the correct elaboration of a scientific paper and of the norms of academic ethics.
	forms	Oral assessment
	final grade formula	70% exam + 30% examination along the way