FOUNDATIONS OF BIOLOGY (MASTED-02-08)				
DEGREE PROGRAM:		Master in integrated STEAM Education (MASTED)		
SEMESTER:	**TYPE:**	**CREDITS:**	**WORKLOAD:**	**MENTORING:**
Second	Basic	6 ECTS	150 hours	2 hours/week
LANGUAGE: Portuguese				

OBJECTIVES	
General	To foster students' understanding of foundational philosophical issues in biology.
Specific	• To address foundational issues in biological thinking, based on a philosophical treatment of key theories and concepts in biology. • To create conditions for the students to build a deeper and more integrated view of living systems, overcoming a fragmented view of these systems according to different biological disciplines. • To connect biological theories and concepts with their historical, philosophical and social dimensions. • To address scientific practices in biology in their shared aspects with other natural sciences and with their specific features.
SUBJECT MATTER	
History and philosophy of science applied to biology. Integrated models of living systems. STS relations in biology. Interdisciplinarity in biology and ethics.	
COMPETENCES	
• C1: Developing knowledge and understanding in biology from a philosophically-informed perspective, in connection with their relations with STS issues, and understanding fundamental issues in integrated modelling of living systems. • C9: Integrating the theoretical knowledge acquired throughout the course with field practice. • C10: Developing communication and cooperation skills with different stakeholders. • C12: Developing critical literacy competence.	
LEARNING OUTCOMES	
Knowledge	• Knowledge of fundamental issues in integrated modelling of living systems. • Knowledge of the key concepts in philosophy of science and apply them to biology. • Knowledge of the key concepts in philosophy of biology.
Skills	• Ability to analyse the uses of biological knowledge in society, considering STS relationships and the role of values. • Ability to think interdisciplinarity in biology, relating knowledge in these fields to history and philosophy of science, to STS studies, and to ethics. • Ability to think of living systems in an integrated manner.
Attitudes/values	• Development of a critical disposition towards key theories and concepts in biology and their use in society. • Development of a critical disposition towards the values and STS relations intervening in the relations between biological knowledge and their use in society. • Acquisition of the sensitivity necessary to perceive the intersection between scientific, historical and philosophical knowledge in the biological sciences. • Acquisition of the sensitivity necessary to perceive the need to think of living systems in an integrated manner.
TEACHING METHODS	
Lectures, Students' seminars, Problem-based learning, World café.	
EVALUATION	
Students' seminars, Problem-solving reports, Reflections on discussions in world cafés, Participation (including self-evaluation)	

PRECONDITIONS	
Basic biological knowledge.	
DEPARTMENT	Graduate Studies Programme in History, Philosophy and Science Teaching, Federal University of Bahia
LECTURERS	Charbel N. El-Hani
LITERATURE	• Allen, T. F. H. & Hoekstra, T. W. 1992. Toward a Unified Ecology. Columbia University Press. • Barker, G. & Kitcher, P. 2013. Philosophy of Science: A New Introduction. Oxford: Oxford University Press. • Godfrey-Smith, P. 2003. Theory and reality. Chicago: University of Chicago Press. • Keller, D. & Golley, F. (Eds.). 2000. The Philosophy of Ecology: From Science to Synthesis. University of Georgia Press. • Kingsland, S. E. 1995. Modeling Nature. University of Chicago Press. • Moreno, A. & Mossio, M. 2015. Biological Autonomy. Dordrecht: Springer.