

Academic subject: Zoology and Cellular Biology			
Degree Class: L-38		Degree Course: Animal Science	
		Academic Year: 2020/2021	
		Kind of class: Mandatory	Year: I
			Period: II semester
			ECTS: 6 divided into ECTS lessons: 6 ECTS exe/lab/tutor: 0
Time management, hours, in-class study hours, out-of-class study hours lesson: 60 exe/lab/tutor: 0 in-class study: 0 out-of-class study: 90			
Language: Italian	Compulsory Attendance: Yes		
Subject Teacher: Prof. Giovanni Chimienti	Tel: +390805443330 e-mail: giovanni.chimienti@uniba.it	Office: Department of Biology, Campus, Via Orabona 4, 70125 Bari Room 41 Floor 2	Office days and hours: meetings with students (online or in person) can be planned upon request via e- mail
Prerequisites: None			
Educational objectives: The educational objective of the course is to provide students with knowledge concerning: structure and main functions of different cell types and features; organization levels of animals; reproduction; evolution of life; basic characteristics of animal Phyla and Systematic.			
Expected learning outcomes (according to Dublin Descriptors)	Knowledge and understanding: Acquisition of knowledge about the structure and main cellular functions, the different levels of organization of animals, and the characteristics of animal Phyla.		
	Applying knowledge and understanding: Acquisition of a proper base about the chemical of life, of cells, of main biological processes, of the different levels of organization of animal organisms, as well as of the fundamental characteristics for the identification and study of animal taxa.		
	Making judgements: The course will allow the student to discern between the main cellular types and the main animal taxa. Moreover, the student will acquire the method for specific identification in zoology.		
	Communication: The student will acquire proper scientific language skills and specific terms related to cellular biology and zoology.		
Lifelong learning skills: The course will give the basis for cellular biology and zoology to the student. The scientific method acquired will represent a strong starting point for future professional activities related to the topic of the course.			
Course program: Composition and levels of organization of living forms. Autotrophic and heterotrophic organisms. Viruses. Prokaryotic cells. Eukaryotic cells. Cell membrane and membrane transport. Jaloplasma. Ribosomes. Endoplasmic reticulum. Golgi complex. Lysosomes and peroxisomes. Mitochondria. Cytoskeleton. Cilia and flagella. Cyclosis and amoeboid movement. Nucleus and nucleolus. Chromosomes. Cell cycle. Mitosis. Meiosis. DNA replication, transcription and translation. Protein synthesis and protein maturation. Reproductive processes: asexual and sexual reproduction, spermatogenesis and oogenesis; fertilization; metagenesis; parthenogenesis; heterogony. Biological cycles. Structural planes of the animal body: symmetry; bauplan and developmental models in animals (diblastic and triblastic animals, acelomates and coelomates, protostomes and deuterostomes); metamery. Systematics and taxonomy. Binary nomenclature. Phylogeny and evolution. Protozoa. Porifera. Cnidarians. Ctenophores. Platizoa. Rotifers. Lophophorates and Nemertines. Molluscs. Annelids. Nematodes and Nematomorphs. Onychophores and Tardigrades. Arthropods (Chelicerates, Myriapods, Crustaceans, Insects). Echinoderms. Emicordates. Cephalochordates. Fishes. Amphibians. Reptiles. Birds. Mammals.			

Teaching methods: The course consists of theoretical lessons, which are carried out in the classroom equipped with multimedia tools.

Auxiliary teaching: None.

Assessment methods: The course includes a final written or oral exam during which the students demonstrate that they have acquired adequate knowledge of cell biology and zoology. The evaluation takes into account the level of knowledge of the topics covered and the ability to do connections between them, as well as the use of an appropriate scientific language. For international students, it will be possible to give the exam in English.

The evaluation acquired in the aforementioned module, together with that of Histology and Applied Anatomy of Domestic Animals, will contribute to the determination of the final evaluation of the integrated examination of Zoology, Histology and Anatomy.

Bibliography: Solomon, Berg, Martin. Fondamenti di Biologia. EdiSES.

Hickman, Keen, Larson. Diversità Animale. McGraw-Hill Education.

Lesson notes.