

General information	
Academic subject	<b>ZOOLOGY AND CELLULAR BIOLOGY</b> (integrated exam of ZOOLOGY, HISTOLOGY AND ANATOMY)
Degree course	Animal Sciences
Academic Year	2022/2023 – I year
European Credit Transfer and Accumulation System (ECTS)	6
Language	Italian
Academic calendar (starting and ending date)	II Semester
Attendance	Compulsory

Professor/ Lecturer	
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Virtual headquarters	Microsoft Teams, code: 18uli6h
Tutoring (time and day)	Tuesday 15.30-17.30 h; Thursday 15.30-17.30 h

Syllabus	
<b>Learning Objectives</b>	The teaching course of Zoology and Cellular Biology is one of the basic disciplines of the first year of the Degree course. The main objective of the course is to provide general knowledge on the structure and functions of the different cell types, as well as on the main characteristics of animals. The knowledge gained will support students in the study of other basic disciplines (Histology, Anatomy and Physiology) and professional disciplines as well.
<b>Course prerequisites</b>	The exam of Structural and Metabolic Biochemistry is preparatory to the exam of Zoology, Histology and Anatomy.
<b>Contents</b>	Composition and organization levels of the living matter. Autotrophic and heterotrophic organisms. Virus. Prokaryotic cells. Eukaryotic cells. Cell membrane. Hyaloplasm. Ribosomes. Endoplasmic reticulum. Golgi complex. Lysosomes and peroxisomes. Mitochondria. Cytoskeleton. Cilia and flagella. Nucleus and nucleolus. Chromosomes. Cell cycle. Mitosis. Meiosis. DNA Replication. DNA transcription, protein synthesis and protein maturation. Reproductive processes. Biological cycles. Evolution of animal diversity. Architecture and animal development models. Criteria and methods of animal classification. Protozoa, Platyhelminths, Nematodes, Molluscs, Annelids, Arthropods, Echinoderms, Chordates.
<b>Books and bibliography</b>	Solomon, Berg, Martin. Fondamenti di Biologia. EdiSES. Hickman, Keen, Larson. Diversità Animale. McGraw-Hill Education. Lecture notes; teaching material used during the classes (PPT slides) and provided by the teachers.
<b>Additional materials</b>	Students can use zoology and cellular biology textbooks other than the recommended texts.

Work schedule	

Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
<b>Hours</b>			
150	60		90
<b>ECTS</b>			
6	6		
<b>Teaching strategy</b>			
		The teaching course will be carried out throughout theoretical lessons by means of PowerPoint presentations. Lessons will take place in classrooms equipped with multimedia tools.	
<b>Expected learning outcomes</b>			
<b>Knowledge and understanding on:</b>		<p>The teaching course will allow the student to acquire knowledge related to:</p> <ul style="list-style-type: none"> <li>○ Structure and functions of the different cell types.</li> <li>○ Basic biological processes.</li> <li>○ Classification of animal organisms.</li> <li>○ General characteristics of organisms of zootechnical interest.</li> </ul>	
<b>Applying knowledge and understanding on:</b>		<ul style="list-style-type: none"> <li>○ Adequate descriptive skill of cells and basic biological processes.</li> <li>○ Identification of the animal organization levels.</li> <li>○ Adequate descriptive skill and knowledge of basic elements of the biology of organisms of zootechnical interest.</li> </ul>	
<b>Soft skills</b>		<ul style="list-style-type: none"> <li>• <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> <li>○ At the end of the course the student will be able to understand and critically evaluate the biological processes and the relationships between the environment and animal organisms.</li> </ul> </li> <li>• <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ At the end of the course the student will learn both the terminology related to the structure and cell function, as well as the terminology related to animal diversity.</li> </ul> </li> <li>• <i>Capacities to continue learning</i> <ul style="list-style-type: none"> <li>○ At the end of the course the student will develop the ability to autonomously deal with the study of biological processes and animal species different from those covered during the course.</li> </ul> </li> </ul>	
<b>Assessment and feedback</b>			
<b>Methods of assessment</b>		The course includes a final oral exam during which the student must demonstrate adequate knowledge of cell biology and zoology. The completeness of the descriptions of both the biological processes and the different animal organisms, together with the ability to make connections between the two disciplines, will be decisive for the evaluation. The outcome of the integrated exam of "Zoology, Histology and Anatomy" will result from the weighed mean of the marks of the exams of "Histology and Applied Anatomy of Domestic Animals" and "Zoology and Cell Biology". A 30-point scale will be used, divided into failing (0 to 17) and passing (18 to 30 cum laude) grades.	
<b>Evaluation criteria</b>		<ul style="list-style-type: none"> <li>• <i>Knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The ability to describe the cellular processes and the different animal organisms with adequate mastery will be evaluated.</li> </ul> </li> <li>• <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The ability to explain basic biological processes and to identify animal organisms based on morphological and functional characteristics will be assessed.</li> </ul> </li> </ul>	



	<ul style="list-style-type: none"><li>• <i>Autonomy of judgment</i><ul style="list-style-type: none"><li>○ The ability to critically describe the topics covered during the teaching course will be considered.</li></ul></li><li>• <i>Communication skills</i><ul style="list-style-type: none"><li>○ The ability to use specific vocabulary and the ability to provide a comprehensive description of the topics covered during the teaching course will be assessed.</li></ul></li><li>• <i>Capacities to continue learning</i><ul style="list-style-type: none"><li>○ The ability to provide adequate answers also on topics mentioned during the course and explored autonomously will be considered.</li></ul></li></ul>
Criteria for assessment and attribution of the final mark	The minimum mark to pass the exam is 18 and the maximum mark is 30 cum laude. The ability to describe the cellular processes and the different animal organisms, in terms of correct description and use of specific terminology, will contribute to the determination of the final grade. The maximum mark will be awarded to students who demonstrate mastery of the topics, language property, high degree of in-depth analysis and critical judgment skills.
<b>Additional information</b>	
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