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| General Information | | | |
| Academic subject | Evolutionary Biology of Vertebrates | | |
| Degree course | Science of nature I Level | | |
| Curriculum | L-32 | | |
| ECTS credits | 6 | | |
| Compulsory attendance | Yes | | |
| Language | Italian | | |
| Subject teacher | Name Surname | Mail address | |
| | Giovanni SCILLITANI | giovanni.scillitani@uniba.it | |
| ECTS credits details | Area | SSD | CFU/ETCS |
| | 05 | BIO/06 | 6 |
| Class schedule | | | |
| Period | II semester | | |
| Year | II | | |
| Type of class | Lectures | | |
| Time management | | | |
| Hours | 150 | | |
| In-class study hours | 50 | | |
| Out-of-class study hours | 100 | | |
| Academic calendar | | | |
| Class begins | 10/03/2021 | | |
| Class ends | 11/06/2021 | | |
| Syllabus | | | |
| Prerequisites/requirements | | | |
| Expected learning outcomes | <ul style="list-style-type: none"> • <i>Knowledge and understanding on:</i> <ul style="list-style-type: none"> ○ Acquisition of theoretical and operational skills with reference to basic cytology, histology, embryology, and anatomy, in order to learn the morpho-functional, comparative and evolutionary aspects of Vertebrate biology. These skills will be acquired thanks to the attendance of theoretical lessons, individual study and laboratory sessions • <i>Applying knowledge and understanding on:</i> <ul style="list-style-type: none"> ○ Acquisition of operational skills useful for some analyses in the field of vertebrate biology in relation to other courses, such as Zoology, Ecology, Physiology, Genetics and Paleontology, as well as basic identification of animals and their parts in field activities. • <i>Making informed judgments and choices:</i> <ul style="list-style-type: none"> ○ Acquisition of autonomy in areas related to the evaluation and interpretation of experimental data for the study of Vertebrate biology, ability in comparing biological structures and explaining variation in the light of interacting evolutionary, developmental and adaptive processes. • <i>Communicating knowledge and understanding:</i> <ul style="list-style-type: none"> ○ Acquisition of the appropriate vocabulary and terminology related to Vertebrate Biology to be able to understand any further information through a specific bibliography and prepare a relation or speech in a developmental, morfo-functional and/or evolutionary context. • <i>Capacities to continue learning:</i> <ul style="list-style-type: none"> ○ Acquisition of the ability to investigate and read further information about the | | |

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| | disciplines with a critical spirit, through the consultation of texts and databases |
| Contents | The levels of organization of life. Cell: chemical composition of protoplasm, cell membranes and junctions, cytosol, ribosomes, endoplasmic reticulum, Golgi apparatus, lysosomes, peroxisomes, mitochondria, cytoskeleton, nucleus, mitosis, meiosis. Tissues: epithelial, connective, muscular, nervous. Evolutionary biology: phylogeny of main vertebrate taxa, concepts of homology and analogy. Embryology: gametogenesis, fertilization, ontogenic processes, developmental stages of amphioxus, amphibians, birds and mammals, embryonic adnexa, outline of organogenesis. Comparative anatomy: structures, functions and evolution of the integument, skeleton, musculature (outline), nervous system, sense organs, digestive system, respiratory system, circulatory system, uro-genital system and endocrine glands (outline). |
| Course program | |
| Bibliography | Calligaro et al. Citologia e Istologia funzionale. Edi. Ermes Stingo et al. Anatomia comparata. Edi. Ermes Menegola E et al. Manuale di Biologia dello Sviluppo Animale. EdiSES. |
| Notes | |
| Teaching methods | Lectures with the use of PowerPoint; laboratory exercises with microscope slides, anatomical specimens and models. |
| Assessment methods | Oral exam |
| Evaluation criteria | <ul style="list-style-type: none"> • <i>Knowledge and understanding:</i> <ul style="list-style-type: none"> ○ Students should demonstrate good knowledge about each topic and the ability of interrelating them. Memorizing without understanding is meaningless. • <i>Applying knowledge and understanding:</i> <ul style="list-style-type: none"> ○ Appropriate descriptions apart, students should focus about morpho-functional, evolutionary, and adaptive aspects of the organs and systems described. They should demonstrate understanding about the interactions between the biological structures and the environmental features. • <i>Autonomy of judgment:</i> <ul style="list-style-type: none"> ○ In presenting a given topic, students should be able to illustrate and combine concepts from various parts of the program to underline how different systems are integrated in a given function e.g., in discussing flight the contribution of the integument, skeleton, muscles, nervous system, sense organs, and respiratory system should be evidenced. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Students should use correct technical terms in describing structures and processes and explain them when required. Simple drawings made during the examination to better explain the topics are appreciated. • <i>Capacities to continue learning:</i> <ul style="list-style-type: none"> ○ Although the suggested textbooks cover the topics as much as possible, research is always in progress so some updates will be given during the lessons. The ability of students to integrate these contents with those from the textbooks will be evaluated. |
| Further information | |