SYSTEMATICS OF VERTEBRATES (YEAR II)

No. of transferable credits 4

Structure of the subject (no. of hours per week)

Semester	Course	Seminar	Laboratory	Project
I	2	-	2	-
II	-	-	-	-

Subject status

Speciality subject (compulsory)

Subject titular head

Lecturer assistant Larisa Ivănescu, PhD

Subject objectives (course and applications)

- Developing the interest in knowing the evolution of the vertebrate world and the responsibility for conserving biodiversity and maintaining a balanced natural environment, conducive to life.
-The objective of the course is to go through the branch of science in zoology, the most important groups of vertebrate animals. At the end of the course and practical work, the student will have basic knowledge on the evolution of animals, their taxonomy, general characteristics, morphology, internal structure of the animals in the studied groups, their ecological relationships and the sanitary-veterinary importance of the animal groups.
- Introducing students to the knowledge of the most important animal groups.
- Analysis of their taxonomy.
- Analysis of general characters, morphology and internal structure of animals.

Subject content (curriculum)

Course (Chapters/subchapters)	No. of hours
Subphylum Chordata - general characters; Classification of chordates.	2
Phylum Vertebrata (Skull) - general characters; Classification of vertebrates: Subphylum Agnatha, Subphylum Gnathostoma.	2
Superclass Pisces -general characters; Class Chondrichthyes -cartilaginous fish.	2
Class Osteichthyes- bony fish; Fish ecology; The economic importance of fish.	2
Superclass Tetrapoda -adaptations regarding the transition from aquatic to terrestrial life; Amphibian Class (Batracians); General characteristics and classification of batrachians.	2
Class Reptilia - general characters; Order Chelonieni- turtles;	
Order Saurieni (Lacertieni) - lizards; Order Ofidieni- snakes; Reptile biology.	2
Class Aves (Birds) - general characters; Adaptation of birds to flight;	2
Classification of birds: Subclass Acarenata; Subclass Carenata.	2
Bird Biology: Feeding Modes; Bridal parade; nests; Spawning and raising chicks; Bird migration; Birds protected by law. The importance of birds.	2

Class Mammalia (Mammals) - general characters; Adaptations to the mode of locomotion; Classification of mammals.	2
Subclass Prototheria- primitive oviparous mammals- Order Monotreme; Subclass Metatheria- placental viviparous mammals – Order Marsupialia;	2
Subclass Eutheria - higher placental viviparous mammals - Order Insectivora, Order Chiroptera, Order Fissipedia (Carnivora), Order Pinnipedia, Order Cetacea, Order Proboscidea, Order Edentata, Order Rodency (Simplicidentata), Order Lagomorpha Duplicidentata), Ord. Artiodactyla (Paricopitata), Ord. Perissodactyla (Imparicopitata).	2
Order Primate; The importance of mammals; Rare, endangered and endangered species.	2

Practical activities	No. of hours
Work safety measures and fire safety and security norms The technique of using the specific laboratory equipment. Optical microscope. Binocular magnifying glass. Subphylum Urochordata (Tunics); Subphylum Cephalocordata (Acraniata): Amphioxus- Branchiostoma lanceolatum.	2
Class Cyclostomata: Eudontomyzon danfordi, Lampetra fluviatilis, Mysine glutinosa.	2
Order Squaliformes: *Rhincodon typus, Charcharodon carcharias, Squalus acanthias, Cetothinus maximus*; Order Raiformes: *Raja clavata, Dasyatis pastinaca, Manta birostris, Torpedo marmorata*.	2
Order Acipenseriformes- sturgeons, Order Clupeiformes-herring, sardines, anchovies, Danube mackerel, salmon, lobster, pike, trout; Order Cypriniformes- carp, crucian, oblete, red, bream, flax, barbel, clean, catfish, avat; Order Anquiliformes- anghile; Order Syngnathiformes- sea horse; Order Perciformes- perch perch, horse mackerel, mackerel, tuna.	2
Order Urodele: Salamandra salamandra, Triturus cristatus; Order Anure: Bufo bufo, Bufo viridis, Bombina bombina, Rana temporaria, Rana ridibunda, Hyla arborea.	2
The general scheme of organizing a turtle; Examples of turtles.	2
The general scheme of organizing a snake; Examples of venomous snakes and constrictor snakes.	2
General scheme of organizing a crocodile; Examples of crocodiles.	2
Order Ratite- Ostrichs ; Order Sphenisciformes- penguins; Order Ciconiiformes- long-legged waterfowl; Order Anseriformes- ducks and geese; Order Falconiformes- abductors of the day; Order Strigiformes- night kidnappers.	2
Order Galliformes; Order Columbiformes; Order Cuculiformes; Order Piciformes; Order Passeriformes; Order Psitaciformes; Order Pelecaniformes.	2
Order Monotreme: platypus, Echidna; Order Marsupialia: Australian Kangaroo, Opposite, Wolf, Marsupial Teddy Bear, Marsupial Squirrel.	2
Order Insectivora; Order Chiroptera- bats; Order Fissipedia: Family Felidae, Fam. Canidae, Fam. Hyenidae, Fam. Ursidae, Fam. Mustelidae.	2
Ord. Pinnipedia: seals, walruses, sea elephants; Ord. Cetacea: Cetaceans without teeth- Mysticetes, Cetaceans with teeth Odontocetes; Ord. Proboscidea.	2
Rodentia- rodent Order; Ord. Artiodactyla: Subord. Suiformes: wild boars, hippos; Subord. Ruminantia: ruminants.	2

Bibliography

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2. Stephen A. Miller, Jhon P. Harley, 2007 (seventh edition), ***”Zoology”,*** Ed. McGraw-Hill International Edition,588 p.

3. C. P. Hickman jr, L.S. Roberts, S.L. Keen et al., 2008, ***" Integrated principles of Zoology"*** Ed. Mc Graw-Hill- Higher Education (fourteenth edition).
4. Pisică Constantin et all.., 1983, ***"Zoologia Nevertebratelor"*** Ed. Didactică și Pedagogică București 378 p.
5. P. Raven & G. Johnson, 2000***, "Biology***", Ed. WCB McGraw-Hill, Boston1285 p.
6. Winfried Ahne et all., 2000, ***"Zoologie"*** Lehrbuch fur Studierende der Veterinarmedizin und Agrarwissenschaften, Ed. Schattauer, 342 p.
7. Willis Johnson, Louis Delanney, Eliot Williams, Thomas Cole, 1977, ***"Principles of Zoology"***, Ed. Holt, Rinehart and Winston, 747 p.
8. Winfried Ahne et all., 2000, ***"Zoologie"*** Lehrbuch fur Studierende der Veterinarmedizin und Agrarwissenschaften, Ed. Schattauer, 342 p.
9. Ceuca Traian, Valenciuc Neculai, Popescu Alexandra, 1983***, „Zoologia Vertebratelor***", Ed, Didactica si Pedagogica, Bucuresti.
10. Năstoiu Ioan, 1994, ***"Fauna de interes medical***", Ed. ALL, București.
11. Feider Z. et all., ***Zoologia Vertebratelor",*** 1976, Ed. Didactică și Pedagogică, București.
12. Ionescu Vasile, 1968, ***" Vertebratele din Romania",*** Ed. Acad. Romane.
13. Jean Marc Ridet, Roland Platel, Francois Meunier, 1994, ***" Zoologie- Des Protozoaires aux Echinodermes***" Ed. Ellipses.

Final evaluation

Forms of evaluation	Modalities of evaluation	Percentage of final grade
Exam	Multiple choice test	50 %
Assessment of the activity during the year	Evaluation of the content and support of the topic is laboratory (systematic observation, oral and action-practical evaluation)	50 %

Contact person

Lecturer assistant Larisa Ivănescu, PhD
Faculty of Veterinary Medicine – ULS Iasi
8, Mihail Sadoveanu Alley, Iasi, 700490, Romania
telefon: 0723166971, E-mail: l.ivanescu@uaiasi.ro