



No. _____ of _____

USAMV form 0107010107 (discipline code)

SUBJECT OUTLINE**1. Information on the programme**

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	III Environment and Plant Protection
1.4. Field of study	Agronomy
1.5. Cycle of study ¹	Bachelor
1.6. Specialization/ Study programme	Environment engineering
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name		Zoology						
2.2. Course coordinator				Prof. dr. Horia Bunescu				
2.3. Seminar/ laboratory/ project coordinator				Prof. dr. Horia Bunescu				
2.4. Year of study	I	2.5. Semester	I	2.6. Evaluation type	summative	2.7. Discipline status	Content ²	DF
							Compulsoriness ³	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week - full time programme	4	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	2
3.4. Total number of hours in the curriculum	56	out of which: 3.5. lecture	28	3.6. seminar/laboratory	28
Distribution of the time allotted					hours
3.4.1. Study based on books, textbooks, bibliography and notes					10
3.4.2. Additional documentation in the library, electronic platforms and field experiences					5
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					10
3.4.4. Tutorials					3
3.4.5. Examinations					7
3.4.6. Other activities					
3.7. Total hours of individual study	34				
3.8. Total hours per semester	90				
3.9. Number of credits ⁴	3				

4. Prerequisites (if applicable)

4.1. curriculum-related	Not applicable
4.2. skills-related	Not applicable

5. Conditions (if applicable)

5.1. for the course	Multimedia presentation with appropriate logistical support (video projector) of the main groups of animals, in terms of systematics. The focus is particularly on those groups with high importance in terms of systematic, phylogenetic, environmentally and economically point of view. Species for each group are exemplified with external morphology and anatomical description. The illustration is made with Romanian fauna species present in different ecosystems - terrestrial and aquatic (marine or freshwater) or exotic species. Finally, students must be able to identify the major phyla of animals and their taxonomic classification.
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	The course is interactive, students can ask questions regarding the content of the exposure.
5.2. for the seminar/ laboratory/ project	Practical work is required to study the didactic collection of biological material of the discipline, which includes material preserved / prepared by representatives of animal groups presented with laboratory tools, optical equipment, logistical support for multimedia presentation. Each student will develop an individual activity with laboratory materials made available and presented properly, with logistical video support. Academic discipline is imposed for all the period of works.

6. Cumulated specific competences

Professional competences	To know the specific biological language of Zoology To acquire notions of animal systematic / taxonomy To know the animal classification system To understand the structure and function of animal body To acquire thoroughly aspects concerning characteristics of the main groups of animals To recognize the main categories of invertebrate and vertebrate animals To know scientific and practical importance of animals
Transversal competences	To have the ability to use information sources and specific concepts learned in new contexts To use theoretical concepts in solving practical issues To demonstrate the ability to analyze and synthesize information and draw conclusions.

7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	To acquire knowledge on animal organisms in the actual requirements
7.2. Specific objectives	Knowledge of structural and functional characters of the main systematic groups of animals Characterisation of representative species of each systematic group Knowledge of animals classification Scientific and practical importance of animals Correct use of scientific terminology Preparing students in specialty of Zoology aims to provide them with basic knowledge in order to have a correct perspective and as widely as possible the diversity of the Animal World, with the knowledge of the main animal species, both useful and harmful in different ecosystems.

8. Content

8.1. COURSE Number of hours - 28	Teaching methods	Observation
Zoology within biological sciences. Basic knowledge of systematic and classification. Importance of Zoology.	Lecture	1 lecture
Kingdom PROTISTA - Subkingdom PROTOZOA - Phylum FLAGELLATA, DINOFLAGELLATA, RHIZOPODA, SPOROZOA, CILIOPHORA (general characteristics, systematics, species, importance).		1 lecture
Subkingdom METAZOA - Subdivision PORIFERA and COELENTERATA (general characteristics, systematics, species, importance).		1 lecture
Phylum PLATHELMINTES - Class TREMATODA, CESTODA (general characteristics, systematics, species, importance).		1 lecture
Phylum NEMATODA (general characteristics, systematic)		1 lecture
Phylum NEMATODA - Class SECERNENTEA, CHROMADOREA, ENOPLA (species, importance). Parasitism and Helminthology (Nematology).		1 lecture
Phylum ANNELIDA - Class POLYCHAETA, OLIGOCHAETA, HIRUDINEA (general characteristics, systematics, species, importance).		1 lecture
Phylum MOLLUSCA - Class GASTROPODA, LAMELLIBRANCHIATA (general characteristics, systematics, species, importance).		1 lecture
Class LAMELLIBRANCHIATA (general characteristics, systematics, species, importance).		
Phylum MOLLUSCA - Class CEPHALOPODA (general characteristics, systematics, species, importance).		
Phylum ARTHROPODA - Class CRUSTACEA (general characteristics, systematics, species, importance).		1 lecture

Phylum ARTHROPODA - Class ARACHNIDA, MYRIAPODA (general characteristics, systematics, species, importance).		1 lecture
Phylum ARTHROPODA - Class INSECTA (general characteristics, systematics, species, importance).		1 lecture
Phylum VERTEBRATA - Subphylum GNATHOSTOMATA - Superclass PISCES - Class CHONDRICHTHYES and OSTEICHTHYES (general characteristics, systematic, species). The origin, evolution, ecology, migration and economic importance of fishes. The passage of vertebrates from the aquatic to terrestrial environment.		1 lecture
Superclass TETRAPODA - Class AMPHIBIA (general characteristics, systematics, origin, evolution, ecology and economic importance of amphibians).		1 lecture
Class REPTILIA (general characteristics, systematics, species, origin, evolution, ecology and economic importance of reptiles).		1 lecture
Class AVES (general characteristics, systematics, species, origin, evolution, bionomics and economic importance of birds).		1 lecture
Class MAMMALIA (general characteristics, systematics, species, origin, evolution, ecology and economic importance of mammals).		1 lecture

8.2. PRACTICAL WORKS Number of hours - 28	Teaching methods	Observation
Basic knowledge of systematic and classification. The study and recognition of representatives in Subkingdom PROTOZOA by making microscopic preparations. The study and recognition of sponges and coelenterates Recognition of parasitic representatives in Class TREMATODA and CESTODA The study and recognition of parasitic nematodes in animals. The study and recognition of parasitic nematodes in plants. Damages produced by nematodes in plants. The study and recognition of gastropods (useful and harmful). The study and recognition of lamellibranchiates and cephalopods (useful and harmful). The study and recognition of crustaceans. The study and recognition of arachnids. Arachnids as parasite pests to plants and animals. General characteristics of Class INSECTA. Recognition of the main orders of insects. Superclass PISCES - Class CHONDRICHTHYES and OSTEICHTHYES (general characteristics, systematics, species). Superclass TETRAPODA - Class AMPHIBIA (general characteristics, systematics, species). Class REPTILIA (general characteristics, systematics, species). Class AVES (general characteristics, systematics, species). Useful and harmful birds. Class MAMMALIA (general characteristics, systematics, species). Useful and harmful mammals.	Theoretical presentation of practical works	1 lab work 1 lab work 1 lab work 1 lab work 1 lab work 1 lab work 1 lab work 2 lab works 1 lab work 1 lab work 1 lab work 1 lab work 1 lab work
<p><i>Compulsory bibliography:</i></p> <ol style="list-style-type: none"> BRES MIMI, 1994, <i>Zoology, Applied Science Review, Springhouse Corporation, Springhouse (Pennsylvania-SUA)</i> BUNESCU H., 2001, <i>Zoologia Nevertebratelor, Editura AcademicPres, Cluj-Napoca</i> BUNESCU H., 2007, <i>Zoologia Vertebratelor, Editura AcademicPres, Cluj-Napoca</i> BUNESCU H., TEODORA FLORIAN, 2014, <i>Zoologie, Editura Bioflux, Cluj-Napoca</i> BUNESCU H., TEODORA FLORIAN, 2015, <i>Zoologie, Editura AcademicPres, Cluj-Napoca</i> BUNESCU H., TEODORA FLORIAN, 2017, <i>Entomologie, Ed. AcademicPres, Cluj-Napoca</i> GROSSU V.AL., Z. FEIDER, ST. GYURKO, V. POP, 1967, <i>Zoologia Vertebratelor, Editura Didactica și Pedagogică, Bucuresti</i> MATIC Z.M. NĂSTĂȘESCU, C. PISICĂ, L. SOLOMON, MARIA SUCIU, N. TOMESCU, 1983, <i>Zoologia nevertebratelor Editura Didactică și Pedagogică, București.</i> RADU V.GH., 1964, <i>Zoologia Nevertebratelor, vol.I, Editura Didactics și Pedagogica, Bucuresti</i> RADU V.GH., V.V. RADU, 1967, <i>Zoologia Nevertebratelor, vol.II, Editura Didactica și Pedagogica, București</i> SIMIONESCU I., 1983, <i>Fauna României. Ed. Albatros, București</i> SUCIU MARIA, ALEXANDRINA POPESCU, 1981, <i>Lucrari practice de Zoologie, Editura Didactica și Pedagogica, Bucuresti</i> <p><i>Optional bibliography:</i></p> <ol style="list-style-type: none"> BOGOESCU C., AL. DABIJA, E. SANIELEVICI, 1979, <i>Atlas Zoologic, Editura Didactica și Pedagogica, București</i> IONESCU-ANDREI ANUTA, 1996, <i>Atlas Zoologic, Editura Vox, Bucuresti</i> 		

9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

The course informations are updated, the update being periodically and a similar content of courses in this field, from other universities in the country or abroad;
Course and practical works aim the developing ability to understand animal world and to use the information in other areas of social economic and cultural scientific life.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Scientific knowledge, the ability to use and interpretation of the knowledges Knowing and understanding the informational content The capacity for analysis and synthesis of information to make conclusions and to use the information in a new context	summative(E)	70%
10.5. Seminar/Laboratory	Knowledge of laboratory methods, of invertebrate and vertebrate animals, their classification and mode of life Practicing the use of sources of information Recognition of some groups and animal species	periodic evaluation	30%
10.6. Minimum performance standards			
- Knowledge of the 50% of the information contained in the course - Knowledge of 50% of the information from the laboratory Mastering scientific information transmitted through lectures and practical work at acceptable level. Getting the minimal note at periodic evaluation is a passing condition.			

- 1 Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.
- 2 according to the educational plan
- 3 Discipline status (compulsoriness) - choose one of the options - DI (compulsory discipline) DO (optional discipline) DFac (facultative discipline).
- 4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on
04.09.2019

Course coordinator
Prof. dr. HORIA BUNESCU

Laboratory work/seminar coordinator
Prof. dr. HORIA BUNESCU

Approved by the
department on
05.09.2019



Head of the Department
Prof. dr. ICAN OROIAN

