

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	Veterinary Medicine
1.3. Department	I – Pre - clinical
1.4. Field of study	Veterinary Medicine
1.5. Cycle of study ¹	Bachelor and Master (unitary study programme)
1.6. Specialization/ Study programme	Veterinary Medicine
1.7. Form of education	Full time

2. Information on the discipline

2.1. Name of the discipline	Physiology I 0414020103							
2.2. Course coordinator	S.L. Dr. Ștefănuț Laura Cristina							
2.3. Seminar/ laboratory/ project coordinator	S.L. Dr. Ștefănuț Laura Cristina							
2.4. Year of study	III	2.5. Semester	III	2.6. Type of evaluation	Exam	2.7. Discipline status	Content ²	FD
	2						Compulsoriness ³	CD

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	5	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	3
3.4. Total number of hours in the curriculum	70	Out of which: 3.5. lecture	28	3.6. seminar/laboratory	42
Distribution of the time allotted					hours
3.4.1. Study based on book, textbook, bibliography and notes					25
3.4.2. Additional documentation in the library, specialized electronic platforms and field					10
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					15
3.4.4. Tutorials					15
3.4.5. Examinations					15
3.4.6. Other activities					
3.7. Total hours of individual study	80				
3.8. Total hours per semester	150				
3.9. Number of credits ⁴	5				

4. Prerequisites (is applicable)

4.1. curriculum-related	Anatomy, Biochemistry, Biophysics, Animal biology, Histology, Nutrition
4.2. skills-related	The student must have knowledge regarding the basic concepts of anatomy, chemistry, biochemistry, cellular biology, genetics and biophysics.

5. Conditions (if applicable)

5.1. for the lecture	The course is interactive; students can ask questions regarding the content of the presentation. Compliance of UASMV Cluj-Napoca regulations.
5.2. for the seminar/ laboratory/ project	At practical work is required to study the materials presented in the lectures; each student will conduct an individual activity using the laboratory materials provided. Laboratory meeting begins with a seminar having as topics the material taught in the previous courses and laboratories. Compliance of UASMV Cluj-Napoca regulations.

6. Specific competences acquired

Professional competences	Getting the theoretical and practical knowledge regarding the processes and mechanisms that are on the basis of the animal organism function in all its organizational levels starting with the cellular ones till the systemic ones.
Transversal competences	Development of medical thinking and analysis: collating knowledge provided by other biomedical disciplines that are found in the field of physiology.

7. Course objectives (based on the list of competences acquired)

7.1. Overall course objective	Acquiring knowledge of physiology provides students the necessary understanding of the functional mechanisms of normal and explanation of major dysfunctions that relate to clinical medicine.
7.2. Specific objectives	Initiation of experimental and electronic models with fundamental and applicative value usable in investigating pathogenetic mechanisms

8. Content

8.1. LECTURE	Teaching methods	Notes
<p>Number of hours – 28</p> <p>1.GENERAL PHYSIOLOGY The Animal Body as a System Physiologic Regulation - Homeostasis</p> <p>2.GENERAL PHYSIOLOGY Cell Membrane Passage of Materials across Membranes Excitability</p> <p>3.Physiology of nervous system General functions of somatic nervous system and autonomic nervous system Neuron and Mechanisms of Information Transmission in the Nervous System</p> <p>4.Physiology of nervous system Motor and integrative function of the nervous system</p> <p>5.Physiology of nervous system Sensory function of the nervous system</p> <p>6.Physiology of muscular effectors</p> <p>7. GENERAL ASPECTS OF THE ENDOCRINE SYSTEM; ENDOCRINE FUNCTIONS OF THE HYPOTHALAMUS</p> <p>8. FUNCTIONS OF THE HYPOPHYSIS and glands depending of its activity (thyroid, parathyroid, adrenal glands)</p> <p>9.FUNCTIONS OF THE ENDOCRINE PANCREAS, THE THYMUS AND THE EPIPHYSEAL GLAND ENDOCRINE FUNCTIONS OF THE GONADS, THE PLACENTA AND THE DIFFUSE ENDOCRINE SYSTEM</p> <p>10. BODY FLUIDS: composition and functions</p> <p>11. THE BLOOD: functions, composition, physical and chemical properties</p> <p>12. FORMED ELEMENTS OF THE BLOOD</p> <p>13. HEMOSTASIS ; BLOOD GROUPS</p> <p>14. PHYSIOLOGICAL BASIS OF DEFENSE SYSTEM</p>	Lecture	A two-hour lecture weekly

<p>8.2. PRACTICAL WORK Number of hours – 42 1. Work Protection. Frequently used Substances, Devices and Animals in the Physiology Lab. Animal Immobilization for sample taking of Biologic Material and Running Physiology Experiments 2. Characteristics of Electrolyte Solutions – Testing of Diffusion and Osmosis. Characteristics of Colloid Dispersions – Testing of the Brownian Movement. 3. Exploration and nerve conductivity Basics: Determining the threshold of excitability, Determination inflow velocity nervous summation time monitoring, central and peripheral inhibition demonstration; Morphofunctional characteristics of synapses. 4. Functional characteristics of muscle and muscle contraction mechanism. Registration of basic functional activities of striated and smooth muscle: a simple contraction of striated muscle, contraction composed of striated, elasticity in resting striated muscle. 5. Blood collection technique in different species of animals. Anticoagulant substances. Preparation of serum and blood plasma. Differentiation of blood plasma of blood serum 6. Determination of hematocrit (PVC). Determination of protein 7. . Counting of formed elements of blood. Counting of blood cells / erythrocytes. 8. Counting leukocytes 9. Determination of erythrocytes sedimentation rate (ESR). Determination of hemoglobin (Hb). Determination of glicemia 10. Determination of blood group factors - the compatibility of blood. 11. Leukogram – mammals 12. Leukogram – fish and birds 13. Leukogram – exotic animals 14. Interpretation of hemmoleukograme.</p>	<p>Theoretical presentation of the practical work, followed by interactive discussions based on the approached theme and execution of the work</p>	<p>A 3-hour session weekly</p>
<p><i>Compulsory bibliography:</i> CUNINGHAM J.G. – Textbook of Veterinary Physiology. Ed. W.B. Saunders USA, 1993. OGNEAN L., DOJANĂ N. - Fiziologia animalelor. Vol.II. Editura Presa Universitară Clujeană, Cluj-Napoca, 2001. OGNEAN L., DOJANĂ N., ROȘIORU CORINA - Fiziologia animalelor. Vol.I - ediția a II-a. Editura Presa Universitară Clujeană, Cluj-Napoca, 2001. STATOV C. - Fiziologie animală. Editura Triade, Cluj-Napoca, 2001. STATOV C., DANA PUSTA, OGNEAN L., CRISTINA TODORAN – Indrumător pentru lucrări practice de fiziologie. Ed. ICPIAF Cluj-Napoca 2001. OGNEAN, L., CRISTINA CERNEA – Aplicații practice de fiziologie medical veterinară. Ed.AcademicPres, Cluj-Napoca, 2006 OGNEAN, L., CRISTINA CERNEA – Aplicații practice în fiziologia animalelor. Ed.AcademicPres, Cluj-Napoca, 2011</p>		
<p><i>Optional bibliography:</i> CONSTANTIN N., COTRUT M., SONEA A. - Fiziologia animalelor domestice. Ed. Coral Sanivet București, 1998. DOJANA N. – Fiziologia animalelor domestice. Ed. Printech București, 2001. 1. PINTEA V., COTRUT M., MANTA D., SALAGEAN GH. – <i>Fiziologie</i>, 1982.</p>		

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

The course structure is related to the educational program of the preclinical disciplines department, constituting a transitional link between preclinical, paraclinical and clinical learning.
The discipline content is developed in correlation with necessary requirements for "day one skills" and "year one skills"

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3.
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10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.4. Lecture	The notions assimilated during the lectures will be evaluated orally in the exam session.	Oral examination, each student having two individual subjects	66,67%
10.5. Seminar/Laboratory	Laboratory work assessment must highlight the assimilation degree (theoretical and practical) obtained by the student.	The laboratory assessment is organized in one practical examinations and award the final grade practical work.	33,33%
10.6. Minimum performance standards			
Knowing of physiology concepts and learning theoretical knowledge and practical application in clinical medicine.			

- ¹ Cycle of studies- choose of the three options: Bachelor/Master/Ph.D.
- ² Discipline status (content)- for the undergraduate level, choose one of the options:- **FD** (fundamental discipline), **BD** (basic discipline), **CS** (specific disciplines-clinical sciences), **AP** (specific disciplines-animal production), **FH** (specific disciplines-food hygiene), **UO** (disciplines based on the university's options).
- ³ Discipline status (compulsoriness)- choose one of the options – **CD** (compulsory discipline) **OD** (optional discipline) **ED** (elective discipline).
- ⁴ One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on
1 October 2013

Course coordinator
Lecturer DMV PhD
Stefanu Laura Cristina

Laboratory work/seminar coordinator
Lecturer DMV PhD
Stefanu Laura Cristina

Approved by the
department on
12.10.2013

Head of the Department
Professor DVM PhD
Damian Aurel