PHYSIOLOGY I

Code: 90017 **Curricular Year: 2nd** **Semester**:**3rd** **Compulsory Credits: ECTS:** 4.5

Teaching staff : Graça Ferreira Dias (CCP, R), Prof. António Freitas Duarte

1. Contact hours

Theoreticals: 28 h **Practicals:** 28 h

2. Objectives:

Theoretical and practical learning of the different concepts and physiologic mechanisms for maintaining homeostasis in domestic animals. Development of the necessary skills to understand, explain, and interpret the knowledge of veterinary physiology, and integrate it with animal production and pathology/clinics courses.

3. Programme:

Neurophysiology Introduction to neuromuscular system. Physiology of the muscle and neuromuscular synapse. Concept of reflex and stretch receptors of the skeletal muscle.
Concept of upper and lower neurones and their dysfunction. Control of posture and motion by the brain - Cerebellum functions. Autonomic nervous system.
Endocrinology: The neuroendocrine system. Endocrine glands and their function: The thyroid gland; the adrenal glands; Endocrine pancreas; Calcium and phosphate metabolism.
Gastrointestinal physiology: Regulation of the gastrointestinal function. Movements of the gastrointestinal tract. Secretions of the gastrointestinal tract. Digestion and absorption: non-fermentative processes. Digestion in ruminants: fermentative processes.
Respiratory function: Respiratory system structure and function. Ventilation, diffusion and gas transport to the periphery. Ventilation-perfusion relationships. Mechanics of breathing and control of ventilation.

4. Recommended Bibliography:

Klein J. G. 2013. Cunningham´s Textbook of Veterinary Physiology. 5th Ed. W. B. Saunders Company. Philadelphia.
Koeppen B. M., Stanton B.A. 2010. Berne & Levy Principles of Physiology. 6th Ed. Mosby Elsevier, Philadelphia.
Laboratory handouts prepared by the teaching staff.

5. Evaluation:

Theoretical and practical knowledge will be evaluated by either “Traditional Evaluation” or “Continuous Evaluation” (optional to the students). “Traditional Evaluation” – knowledge will be assessed during the Final Exam, during the evaluation break.
“Continuous Evaluation”- 30% of the final grade corresponds to the mean obtained on the Quizzes performed at the end of each lectures block (nervous, endocrine, gastrointestinal and respiratory systems); 70% corresponds to the grade obtained on the Final Exam, during the evaluation break.