

## PHYSIOLOGY II

**Curricular Year: 2<sup>nd</sup>**

**Semester: 4<sup>th</sup>**

**Compulsory**

**Credits: ECTS: 4.5**

**Teaching staff:** Prof. Graça Ferreira-Dias (CCP, R), Prof. António Freitas Duarte, Prof. Maria de S. José Centeno

**1. Time allocated (per student): 28 h Theoretical + 28 h Practicals**

### **2. Objectives:**

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

### **3. Programme:**

Renal Physiology: Glomerular filtration. Reabsorption of solutes. Water equilibrium. Acid-base homeostasis.

Cardiovascular Physiology: Cardiovascular system structure and function. Electric activity of the heart and the electrocardiogram. Systemic and pulmonary circulation. Capillaries and gas exchange dynamics. Control of blood flow. Neural and hormonal control of blood pressure and blood volume.

Reproduction and Lactation: Development of gonads and gametes. Physiology of the oestrous cycle. Reproductive cycles and fertilization. Male reproductive physiology. Gestation and parturition. The mammary gland. Seasonal reproduction.

### **4. Recommended Bibliography:**

Klein B.G. 2020. Cunningham's Textbook of Veterinary Physiology. 6<sup>th</sup> Ed. W. B. Saunders Company. Philadelphia.

Laboratory handouts prepared by the teaching staff.

### **Additional bibliography**

García Sacristan A. 2018. *Fisiología Veterinaria*. Editorial Tébar Flores. 2<sup>a</sup> Ed. Madrid.

Hall J. E. 2016. *Guyton and Hall Textbook of Medical Physiology*. 13<sup>a</sup> Ed. Elsevier.

Senger, P.L. 2015. *Pathways from Pregnancy to Parturition*. (3<sup>a</sup> ed.), Current Conceptions, Inc., Pullman, WA, USA.

Koeppen B.M., Stanton B.A. 2017. *Berne & Levy Physiology*. (Updated Edition: with Student Consult online access) (7<sup>a</sup> ed.) Elsevier. USA.

Johnson M.H. 2013. *Essential Reproduction*, Includes Wiley E-Text (7<sup>a</sup> ed.), Blackwell Publishing, London.

### **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 in 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 (Reproductive, renal, and cardiovascular systems); 70% corresponds to the grade obtained on the Final Exam, during the evaluation Break.