

PHYSIOLOGY II

Study programme: MIMV Curricular Year: 2nd Semester: 4th Compulsory ECTS:4,5

Lecturers: Graça Ferreira-Dias (CCP, R), António Freitas Duarte

1. Contact Hours: Lectures - 28; Practical – 28

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:

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.

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

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. Bibliography:

- Klein B.G. (2020). *Cunningham's Textbook of Veterinary Physiology*. 6th Ed. W.B. Saunders
- García-Sacristan A. (2018). *Fisiología Veterinaria*. 2^a Ed., Editorial Tébar Flores, Madrid.
- Hall J.E. & Hall M.E. (2020). *Guyton and Hall Textbook of Medical Physiology*. 14th Ed. Elsevier.
- Senger, P.L. (2015). *Pathways from Pregnancy to Parturition*. 3rd Ed., Current Conceptions
- Koeppen B.M., Stanton B.A. (2023). *Berne & Levy Physiology*. 8th Ed., Elsevier.
- Zao P., Stabler T.N., Smith L.A., Lokuta A. & Griff E. (2020) *PhysioEx 10.0: Laboratory Simulations in Physiology*, 1st Ed., Pearson.
- Laboratory handouts prepared by the teaching staff.

5. Assessment

Theoretical and practical knowledge will be assessed by either "Traditional Evaluation" or "Continuous Evaluation" (optional to the students). "Traditional Evaluation" – knowledge will be assessed only in the Final Exam.

"Continuous Evaluation" - 30% of the final grade corresponds to the mean obtained on the quizzes performed at the end of each lecture block (cardiovascular, renal and reproductive systems); 70% corresponds to the grade obtained on the Final Exam.