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|--------------------------|--------------------|---------------|----------------|--|-----|
| Course Unit              | Physiology I       |               | Field of study | Biology and Biochemistry                             |     |
| Bachelor in              | Veterinary Nursing |               | School         | School of Agriculture                                |     |
| Academic Year            | 2019/2020          | Year of study | 1              | Level  | 1-1 |
| Type                     | Semestral          | Semester      | 1              | ECTS credits   | 6.0 |
| Workload (hours)         |                    | 162           | Contact hours  | T 30   TP -   PL 30   TC -   S -   E -   OT 20   O - |     |
| Code 9085-408-1103-00-19 |                    |               |                |  |     |

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Teresa Maria Montenegro Araújo A. Correia

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:  
Learn about homeostasis and endocrinology. Understand the factors that influence the neuroendocrine system, homeostatic mechanisms, biological rhythms, establishment/ functions of the endocrine system.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Students should have some knowledge of anatomy.

### Course contents

Homeostatic mechanism and cellular communication. Components of homeostatic control system. Biological rhythms. Chemical control of cells, regulation of receptors and signal transduction pathways. Principles of hormonal control systems. Control of hormone secretion. Control system involving the hypothalamus and pituitary, pineal, thymus, adrenal thyroid, parathyroid, pancreas and reproductive glands. Gastrointestinal hormones. Endocrine disorders

### Course contents (extended version)

1. Homeostatic mechanisms and cellular communication Notions of homeostasis Feedback positive
2. Feedback negative Intracellular regulation Intrinsic control Acclimation
3. Biological rhythms Chemical control of cells Inter cellular union
4. Chemical messenger Target cells Membrane and cytoplasmic receptors
5. Affinity and dose effect Stimulating transduction Endocrinology General concepts
6. Chemical messengers Concept of hormone as a second chemical messenger
7. Hormones classification Metabolism of hormones Regulation of hormone secretion
8. The epiphysis Melatonin Hypothalamus Constitution and main chemical messengers
9. Constitution of pituitary gland Pituitary regulation Hormones from adenohypophysis
10. Hormones of the middle portion of pituitary gland Posterior pituitary gland: hormones
11. Thyroid gland Constitution and functions hormones Parathyroid gland Constitution and functions PTH
12. Pancreas Constitution and functions Endocrine and exocrine pancreas Hormones
13. Adrenal gland Adrenal cortex Constitution and functions Hormones
14. The adrenal medulla Constitution and functions Hormones Endocrine disorders
15. Reproductive glands Hormones Gastrointestinal hormones Endocrine disorders

### Recommended reading

1. GRECO, D. S. ; DAVIDSON, A. P. , 2017. Small Animal Endocrinology and Reproduction. Wiley Blackwell. USA
2. MOONEY, C. T. , 2012. Manual of Canine and feline Endocrinology. 4th edition BSAVA, RU.
3. FELDMAN, E. et al. , 2015. Canine and Feline Endocrinology. 4ª edição, Saunders, Filadélfia, EUA.
4. MOONEY, C. T. , PETERSON, M. E. , 2009. Endocrinologia canina e Felina. Editora Roca, São Paulo, Brasil.
5. CUNNINGHAM, J. G. , 2004. Tratado de fisiologia veterinária. 3ª Ed. Editora Guanabara Koogan, Rio de Janeiro, Brasil.

### Teaching and learning methods

Teaching classes (included practices of laboratory and field work). In no present classes, the students will have to produce a work handing to a teacher over a final report, present and discuss it. Resources: audiovisual, multimedia, computer, online library, laboratory equipment, live animals in the ESAB and dead animals from the slaughterhouse.

### Assessment methods

1. Continuous - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 60% (Minimum score of 8, 5 values.)
  - Final Written Exam - 10% (Minimum score of 9, 5 values.)
  - Practical Work - 30%
2. Final examination. - (Regular, Student Worker) (Final, Supplementary, Special)

### Language of instruction

Portuguese

### Electronic validation

|   |                             |                              |                              |
|---|-----------------------------|------------------------------|------------------------------|
| Teresa Maria Montenegro Araújo A. Correia | Maria Lurdes Cicouro Galvão | Hélder Miranda Pires Quintas | Alfredo Jorge Costa Teixeira |
| 11-11-2019                                | 11-11-2019                  | 11-11-2019                   | 11-11-2019                   |