SCUOLA DI SCIENZE AGRARIE, FORESTALI, ALIMENTARI ED AMBIENTALI

COURSE: **ANATOMY AND PHYSIOLOGY OF DOMESTIC ANIMALS**

ACADEMIC YEAR: **2019/2020**

TYPE OF EDUCATIONAL ACTIVITY: **CHARACTERISTIC**

TEACHER: **EMILIA LANGELLA**

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Language: **ENGLISH**

ECTS: n. CFU: **9** (n.8 of classroom lessons and n.1 tutorials/practices)	n. hours: **80** (n.64 of classroom lessons and n.16 of tutorials/practices)	Campus: **Potenza** School: **SAFE** Program: **SCIENZE E TECNOLOGIE AGRARIE**	Semester: **SECOND PERHIOD**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The educational task of our course aims to introduce students to significance of Anatomy and Physiology to Agricultural, Forest, Food and Environmental Sciences School and to supply the essential concepts of animals' structure with the study of functions of the body and any of its parts. A thorough knowledge of the Anatomy of majors mammal species imparts a lot of scientifically information about the various functions it is capable of performing. The course provides different and comparative scientific topics for understanding the key roles and many mechanisms involving on homeostasis and maintenance of physiological equilibrium as well as environmental conditions of animal body. Moreover, to describe and to understand the basis and some specific anatomical and physiological differences and similarities of these animals as well as to explain how they can be used in farm animals management livestock. The students will be able to understand basic concepts (including history of, applications and future developments) of veterinary Anatomy and Physiology.

- **Knowledge and learning skills:** The student must show to have the good knowledge of basic concepts of mammals' anatomical structures and visceral apparatus; in addition, to be able to compare the physiological differences between similar animal species.
- **Ability to use own knowledge:** the student must show:
  - to apply the acquire scientific contents of management livestock and breeding systems into animal production sciences areas. Interview with academic teachers;
  - to explain the anatomical and physiological concepts using an specific language;
  - to develop ideas and review on arguments of Anatomy and Physiology course.
- **Self assessment:** the student must show to have the good knowledge of mammals' anatomical and physiological contents explain at lessons; in addition, to be able of value in illustrating ideas and management livestock solution deal with the "real-working" situations with professional approach.
- **Communication skills:** the student must show to have a good communication skills and he has to be able to explain the Anatomy and Physiology contents. In addition, the student must be able to use an appropriate scientific language to take the final exam.
- **Learning ability:** the students must show to have, after the end of the course, good skills of improve own knowledge, using the information literacy and resources to stay current in the fields of animals' Anatomy and Physiology sciences.

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PRE-REQUIREMENTS

The students must have a good knowledge about:

- basic concepts of life sciences;
- fundamental concepts of animal's cell and tissues;
- fundamental laws of Chemistry and Physical sciences.

SYLLABUS

Area 1. (n. 14 hrs in classroom and 4 hrs in lab)

Significance and aims of our course; many properties to animals' cells and tissues – taxonomic classification of mammals and livestock classes.

Regional compartments of animal body and anatomic terms.

The skeleton: anatomy of bones, common joints of bone.

Muscles: smooth muscle, striated voluntary muscle, cardiac muscle. Morphological and functional characteristics. Comparative interspecies concepts.

Area 2. (n.24 hrs in classroom and 6 hrs in lab)

Respiratory system: anatomy of trachea, bronchial tree, lungs, physiology of respiration, gaseous exchange, rate and depth of breathing.

The circulatory system: composition of blood, functions of blood, blood vessels, arteries, veins, capillaries, physiology of the circulatory system, rates of heart beats, spleen, lymphatic system.

The digestive system: mouth, tongue, teeth, esophagus. Simple stomach, small and large intestine. Ruminant stomach, accessory organs of the digestive system; mechanism and roles of feed absorption and utilization in Ruminants and non-Ruminants species; enzymes, breakdown by microorganisms, action of micro-organisms, utilization of the end products of digestion.

Area 3. (n.24 hrs in classroom and 6 hrs in lab)

The urinary and genital systems: anatomy of kidneys, bladder; physiology of urinary system, excretion mechanisms in different animals. The reproductive system: anatomy and physiology of the male and female reproductive systems; many hormones production; estrus cycle and fertility. Animal growth factors: development and functions of endocrine system: many glands of mammal body. Hormones: activity and key roles on productive and reproductive efficiency: influence and physiologic mechanisms which affect the size of mammals. Structure of the mammary glands, secretion of milk, milk ejection, reproduction data for cows, sows and ewes.

Moreover, n. 2 hrs of academic seminars activity are made into the classroom, by external expert (PhD student et al.).

TEACHING METHODS

Power point presentations, modified online lectures, face-to-face tutorials, reading of journal articles, texts and video projection DVD, e-mail support etc.

Our course consists of n. 80 hrs for 9 CFU teaching (n. 64 hrs of classroom lessons and n. 16 hrs of laboratory practices). The face-to-face tutorials and technical hours are made at the end of each classroom teaching area. Moreover, the students will have free access into the lab even after the end of the course, for any other individual insights. In addition, technical visits (i.e. at livestock farms, at dairy products animals' farms, etc.) are expected during the academicals teaching, to provide a concrete "real-work" situations.

EVALUATION METHODS

The conclusive evaluation methods is based on an oral exam. Each exam aims of to evaluate:

- the degree knowledge achieved based on the educational goals expected;
- the individual skills in explaining the required topics;
- the individual skills in illustrating ideas and solution deal with the "real-working" situations.

Students receive a Pass grade after the end of the oral exam if they will demonstrate to have completed all course requirements, performed satisfactorily on the final assessment and each section of the oral final examination, and exhibited professional behavior in the course.

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TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

*1 A. Gobetto, S. Pellegrini, "***Anatomia e fisiologia degli animali domestici"** UTET 1974*.*

*2 G.V. Pelagalli, V. Botte, "***Anatomia Veterinaria Sistematica e Comparata"** EDI-ERMES 1993.

3. R. Bortolami, E. Callegari, V. Beghelli, "**Anatomia e Fisiologia degli Animali Domestici"** Edagricole 1982.

The educational materials (power point presentations, etc.) is available to the students.

INTERACTION WITH STUDENTS

For institutional communications with teacher, will collected data students': name, surname, registration number and e-mail address.

Days of reception of students: Tuesday, 15.00-17.00; Wednesday and Thursday 9.30-12.30

In addition, the teacher is also available at e-mail address.

EXAMINATION TEACHERS

Emilia LANGELLA

Adriana DI TRANA

Paola DI GREGORIO

Raffaele BONI

EXAMINATION SESSION (FORECAST) [1]

21/01/2020, 18/02/2020, 24/03/2020, 14/04/2020, 19/05/2020, 16/06/2020, 14/07/2020, 22/09/2020, 20/10/2020, 17/11/2020, 15/12/2020.

SEMINARS BY EXTERNAL EXPERT YES

[1] Potrebbero subire variazioni: consultare la pagina web del docente o del Dipartimento/Scuola per eventuali aggiornamenti