V T 54B: COMPARATIVE VETERINARY ANATOMY & PHYSIOLOGY FOR THE VETERINARY TECHNICIAN

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	5
Hours:	4 lecture, 3 laboratory per week (84 total per quarter)
Prerequisite:	V T 54A.
Advisory:	Not open to students with credit in APAV 54B.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Recognize and identify the normal anatomy of selected organs and organ systems of domestic animals and relate it to the clinical practice of veterinary technology.
- Know and explain the normal physiology of selected organs and organ systems of domestic animals and relate it to the clinical practice of veterinary technology.

Description

Comparative anatomy and physiology for veterinary technicians. Clinically relevant anatomy and physiology of the major domestic animals and birds, and includes a discussion of the similarities and differences among the species. Emphasis is placed on the normal structure and function of the major organ systems as the foundation for understanding pathology and pathophysiology of disease. Intended for students in the Veterinary Technology Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

1. Analyze and evaluate the relationship between GI system structure and function, and describe clinical applications of the GI system in various domestic species
2. Analyze and evaluate the relationship between nervous system structure and function, and describe clinical applications of the nervous system in various domestic species
3. Describe the structure and function of the special senses, and describe clinical applications of the special senses in various domestic species
4. Analyze and evaluate the relationship between endocrine system structure and function, and describe clinical applications of the endocrine system in various domestic species
5. Analyze and evaluate the relationship between urinary system structure and function, and describe clinical applications of the urinary system in various domestic species
6. Analyze and evaluate the relationship between reproductive system structure and function, and describe clinical applications of the reproductive system in various domestic species
7. Compare avian to mammalian anatomy and physiology, and apply to the clinical setting

Course Content

1. Digestive system
    a. Basic structure
        i. Monogastric animals
        ii. Ruminant animals
    b. Physiology of the GI tract
    c. Related organs
        i. Liver
        ii. Pancreas
    d. Application of GI system in clinical practice
2. Nervous system
    a. Neurons and supporting cells
    b. Organization
        i. CNS
        ii. PNS
    c. Neuron physiology
    d. Autonomic nervous system
    e. Application of neurology in clinical practice
3. Sense organs
    a. General senses
    b. Special senses
    c. Application of special senses in clinical practice
4. Endocrine system
    a. Cellular structure of glands
        i. Characteristics
        ii. Control of secretion
    b. Anatomy of major endocrine glands
    c. Physiology of endocrine system
    d. Application of the endocrine system to clinical practice
5. Urinary system
    a. Structures
    b. Function
        i. Micturition
    c. The urinary tract in clinical practice
6. Reproductive system
    a. Meiosis
        i. Spermatogenesis
        ii. Oogenesis
    b. Male reproductive
        i. Structure
        ii. Function
    c. Female reproductive system

i. Structures
ii. Function
1. Pregnancy
2. Placentas
3. Parturition

d. Mammary glands and lactation
e. Application of the reproductive system in clinical practice

7. Basic orientation to the anatomy and physiology of avian species and comparison to mammals
a. Terminology
b. Skeleton
c. Muscles
d. Gastrointestinal
e. Cardiac
f. Pulmonary
g. Nervous
h. Genitourinary

Lab Content

1. Cell and tissue identification for these systems:
a. Gastrointestinal
b. Nervous system
c. Sense organs
d. Endocrine
e. Urinary
f. Reproduction
2. Laboratory skills
a. Identification of major cell and tissue types on prepared histology slides of systems covered
b. Keep a laboratory notebook
c. Participate in a necropsy procedure as an essential skill to apply anatomical knowledge
3. Comparative anatomy between mammalian and avian structures

Special Facilities and/or Equipment

1. Lecture and laboratory facility with high-quality overhead projector, instructor's computer with internet access, video microscope, visualizer, and Zoom capabilities.
2. Student computers and ports for student laptops, bench space, anatomy and physiology models, microscopes, microscope slides (cytology and histology).
3. Preserved specimens.
4. Dissection equipment.
5. Fresh anatomy specimens from licensed purveyors, which will be properly disposed of.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Two written midterm exams
Written final exam
Laboratory evaluations, quizzes, and practical exams

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion
Laboratory
Demonstration

Representative Text(s) and Other Materials

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology for Veterinary Technicians. 2016.

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology Laboratory Manual for Veterinary Technicians. 2016.

This is the most current version available of the seminal textbook in the field for veterinary technicians.

Merck Veterinary Manual is available free, online, and supports content: https://www.merckvetmanual.com/

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Weekly reading assignments in the lecture text (~40 pages/week)
2. Weekly reading assignments in the lab manual (~15 pages/week)
3. Additional reading assigned as needed to supplement the texts (~10 pages/week)
4. Various assignments in Laboratory Notebook to support learning
5. Participate in necropsy procedure

Discipline(s)

Registered Veterinary Technician