VT-1410: VETERINARY SCIENCE II

Cuyahoga Community College

Viewing: VT-1410 : Veterinary Science II

Board of Trustees:
1/30/2025

Academic Term:
Fall 2025

Subject Code
VT - Veterinary Technology

Course Number:
1410

Title:
Veterinary Science II

Catalog Description:
Fundamentals of physical and behavioral characteristics of horses, cattle, sheep, goats, pigs, poultry and camelids. Introduces basic husbandry and nutrition for these species. Laboratory focuses on restraint, handling and performance of common veterinary procedures used as part of large animal management and/or treatment of common clinical conditions. Field trips required for laboratory portion of course.

Credit Hour(s):
3

Lecture Hour(s):
2.5

Lab Hour(s):
1

Requisites

Prerequisite and Corequisite
VT-1401 Veterinary Science I , BIO-1420 Anatomy and Physiology of Domestic Animals II , or concurrent enrollment.

Outcomes

Course Outcome(s):
Describe the husbandry and nutrition of common farm animal species.

Objective(s):
1. Describe the different types of usages of horses, cows, sheep, goats, pigs, camelids and poultry.
2. Describe the differences between various commercial production systems for cattle (dairy and beef), sheep, goats, pigs and poultry.
3. Compare the nutritional needs of horses, cattle (dairy and beef), sheep, goats, pigs, camelids and poultry.
4. Describe the normal milking timetables, procedures and risks associated with dairy cattle production.
5. Describe the various breeding programs used in the managed reproduction of horses, cattle, pigs, sheep, goats and pigs, including the pharmacology of drugs utilized in these various programs.
6. Describe the concept of biosecurity and provide examples of common biosecurity practices that are used in veterinary medicine and on farms.

Course Outcome(s):
Coordinate and execute common in-clinic and on-farm medical procedures used in horses and production livestock.

Objective(s):

1. Obtain a blood sample from a horse, cow, sheep, goat, or pig.
2. Recognize proper grooming procedures for horses
3. Recognize proper hoof care for horses and cloven-hooved animals.
4. Describe the routine surgical practices performed as part of food animal management including dehorning/disbudding, castration, removal of needle teeth, and tail docking.
5. Explain the equipment and methodology required for the safe passage of a stomach tube in both horses and food animals.
6. Conduct physical assessments, including vital signs, on horses, cows, sheep, goats, pigs, camelids or poultry.
7. Acquire diagnostic radiographs of the equine distal limb using portable x-ray equipment.
8. Safely restrain a horse, cow, sheep, goat, pig, camelid or livestock bird.
9. Administer medication parenterally to a horse, cow, sheep, goat, or pig.
10. Administer medication orally to a horse, cow, sheep, goat, camelid or production bird.

Course Outcome(s):

Recognize normal and abnormal horse or food animal behavior and common use- or husbandry-associated diseases.

Objective(s):

1. Recognize the difference between normal behavior of a horse, cow, sheep, goat, pig or production bird and those behaviors associated with illness or injury.
2. Describe the inherent dangers of working with horses and food animals and assess the behavior of these animals in order to assure the safety of the owner, veterinary personnel, and the animal.
3. Describe causes of lameness in horses and cattle and the associated treatments.
4. Describe the impact of diet on gastrointestinal system function in horses and food animals and the diseases that result from improper husbandry or feeding practices.

Methods of Evaluation:

1. Quizzes
2. Practical examinations
3. Attendance
4. Written examinations
5. Homework assignments
6. Journal article review
7. Research paper

Course Content Outline:

1. Biosecurity
    a. Definition
    b. Common practices
    c. Consequences and impacts of breaks in biosecurity protocols
    d. Biosecurity measures for production operations vs the veterinary profession
2. Equine behavior, nutrition, husbandry, and techniques
    a. Different usages of horses
    b. Normal equine behavior patterns
        i. Herd behavior
        ii. Assessing equine behavior toward humans
    c. Gaits of the horse
        i. Walk
        ii. Trot
        iii. Canter
        iv. Gallop
        v. Other gaits
    d. Grooming and bathing of the horse
    e. Equine restraint procedures
        i. Application of a halter
        ii. Lead shank restraint

iii. Twitches
iv. Lifting a leg
v. Hobbles
vi. Stocks

f. Hoof care
i. Routine care and maintenance of the hoof
ii. Types of horseshoes

g. Equine dental care

h. Nutrition of the horse
i. Types of concentrates
ii. Types of roughages
iii. Feed supplements
iv. Nutritional requirements of the horse

i. Administration of oral and parenteral medications
i. Oral paste
ii. Intramuscular injections

j. Passage of nasogastric tubes

k. Routine venipuncture techniques for blood sampling, drug administration and catheterization

l. Leg and tail bandage application

m. Position Horse to obtain diagnostic radiography of the equine distal limb

n. Physical assessment
i. Obtaining vital signs (e.g., pulse, respiratory rate, temperature, digital pulses)
ii. Auscultation of heart, lungs and gut sounds

3. Ruminant behavior, nutrition, husbandry, and techniques

a. Different usages of cattle, sheep, and goats
i. Veal operations, feedlot cattle, dairy
ii. Meat and wool sheep
iii. Dairy goats

b. Confinement animal feeding operations (CAFOS)
i. Advantages and disadvantages
ii. Manure handling
iii. Environmental concerns

c. Behavior patterns of cattle, sheep, and goats
i. Herd/flock behavior
ii. Assessing behavior toward humans

d. Restraint of cattle, sheep, and goats
i. Chutes/stocks/head gates
ii. Bull leads
iii. Tail jack
iv. Kicking restraints
v. Holding and setting up sheep

e. Nutrition of cattle, sheep, and goats
i. Types of concentrates
ii. Types of forage
iii. Feed supplements
iv. Dairy vs beef cattle
v. Copper sensitivity of sheep

f. Milk production and milking techniques

g. Routine medical herd management procedures
i. Dehorning/disbudding
ii. Castration
iii. Supernumerary teat removal
iv. Intramammary infusions

h. Routine medical/surgical procedures
i. Administration of oral medications (drenches, boluses and feed additives)
ii. Administration of parenteral medications
1. Subcutaneous injection
2. Intramuscular injection
iii. Rectal palpation

iv. Orogastric intubation
v. Routine tail vein and jugular venipuncture and intravenous administration
vi. Physical assessment
1. Obtaining vital signs (pulse, respiration rate and temperature)
2. Auscultation (heart, lungs and rumen sounds)

4. Modern breeding techniques and reproduction
a. Management of estrous cycling in horses
b. Management of estrous cycling in cattle
i. (Implants vs injectables
c. Pharmacology of common reproductive medications
d. Normal parturition in the horse, cow, sow and small ruminants
e. Foals
i. Proper handling of a foal and foal behavior
ii. Foal management
iii. Retained meconium
iv. Foal heat diarrhea
f. Calves
i. Calf management practices and housing
g. Management of dystocia in large animals
5. Swine behavior, nutrition, husbandry, and techniques
a. Agricultural and pet use of swine
b. Normal swine behavior patterns
c. Restraint of swine
i. Catching pigs
ii. Moving pigs (hog panels)
iii. Pig snares
d. Swine nutrition and feeding practices
e. Swine management practices and housing
f. Normal farrowing
g. Routine medical herd management procedures
i. Castration
ii. Tail dock
iii. Needle teeth
iv. Ear notch techniques for identification
h. Routine medical/surgical procedures
i. Administration of medications via feed and watering systems
ii. Administration of parenteral medications
iii. Routine venipuncture sites and techniques
6. Poultry behavior, nutrition, husbandry and techniques
a. Catching and restraint
b. Housing
i. Commercial vs backyard
c. Nutrition
7. Camelid behavior, nutrition, husbandry and techniques
a. Behavior
i. Defense mechanisms – spitting
ii. Dung piles
b. Restraint
i. Halters
ii. Stocks
c. Nutrition
d. Parturition and breeding
e. Housing
8. Use- or nutrition-related diseases in horses
a. Lameness
i. Forelimb
1. Soft tissue
2. Bony
ii. Hindlimb

1. Soft tissue
2. Bony

b. Exertional rhabdomyolysis (tying up)
c. Colic
   i. Types
   ii. Causes
   iii. Treatment
      1. Surgical vs non-surgical
   iv. Prevention

9. Use- or nutrition-related diseases in ruminants
   a. Displaced abomasum
      i. RDA vs LDA
      ii. Causes
      iii. Treatment
      iv. Prevention
   b. Grain overload (cattle)
   c. Bloat (cattle and sheep)
   d. Periparturient hypocalcemia (milk fever of cattle)
   e. White muscle disease

Resources

Kristin J. Holtgrew-Bohling. *Large Animal Clinical Procedures for Veterinary Technicians, 3rd Edition*. 4th. St. Louis, Missouri, 2020. 2020.

Bassert, Joanna M. and Thomas, John A. *McCurnin's Clinical Textbook for Veterinary Technicians*. 10th ed. St. Louis, MO: Elsevier Saunders, 2021.

Belanger, Jerry and Bredesen, Sara Thomsen. *Storey's Guide To Raising Dairy Goats*. 4th ed. Pownal,Vermont: Storey's Publishing, 2010.

Cebra, Chris, Anderson, David E., Tibary, Ahmed, Van Saun, Robert J., and Johnson, LaRue Willard. *Llama and Alpaca Care: Medicine, Surgery, Reproduction, Nutrition, and Herd Health*. 1st ed. St. Louis, MO: Elsevier, 2014.

Cooper, Carlotta. *The Complete Guide to Raising Pigs.* 1st ed,. Ocala, FL: Atlantic Publishing Group, Inc., 2011.

Holderread, David. *Storey's Guide to Raising Ducks.* 2nd ed. North Adams, MA: Storey Publishing, 2011.

Herring, Andy D. *Beef Cattle Production Systems*. 1st ed. Oxfordshire, UK: CABI, 2014.

Damerow, Gail. *Storey's Guide to Raising Chickens*. 4th ed. North Adams, MA: Storey Publishing, 2017. December 26, 2017.

Reeve, Moira C. and Biggs, Sharon. *The Original Horse Bible: The Definitive Source for All Things Horse*. 1st ed. Irvine, CA: Bow Tie Press, 2011.

Rockett, Jody and Bosted, Susanna. *Veterinary Clinical Procedures in Large Animal Practices.* 2nd ed. Boston, MA: Cengage Learning, 2015.

Risco, Carlos, and Melendez, Pedro. *Dairy Production Medicine.* 1st ed. St. Louis, MO: Wiley Blackwell, 2011.

Smith, Bradford P. *Large Animal Internal Medicine.* 6th ed. St. Louis, MO: Elsevier Mosby, 2020.

Resources Other

www.nppc.org (National Pork Producers Council)
www.usda.gov(United States Department of Agriculture)
www.odpa.org (Ohio Dairy Producers Association)

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