

VT-1401: VETERINARY SCIENCE I

Cuyahoga Community College

Viewing: VT-1401 : Veterinary Science I

Board of Trustees:

1/30/2025

Academic Term:

Fall 2025

Subject Code

VT - Veterinary Technology

Course Number:

1401

Title:

Veterinary Science I

Catalog Description:

Recognition of physical and behavioral characteristics of commonly encountered dog and cat breeds. Introduction to basic companion animal and laboratory animal behavior, husbandry and nutrition. Laboratory focuses on non-invasive clinical management techniques including physical examination, grooming and other in-office procedures as well as minor invasive procedures such as injections and venipuncture.

Credit Hour(s):

4

Lecture Hour(s):

3

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

Departmental approval: admission to program.

Outcomes

Course Outcome(s):

Recognize common behavior patterns and problems in cats and dogs and describe appropriate preventive and management strategies.

Objective(s):

1. Describe common canine behavioral problems, including but not limited to, aggression, excessive barking, house training, chewing, self-mutilation and separation anxiety.
2. Describe common feline behavioral problems, including but not limited to, aggression, scratching, and inappropriate elimination.
3. Recognize the basic normal behavior patterns of the dog and cat and assess whether or not an animal is submissive or aggressive.
4. Describe the normal developmental behavior patterns of a puppy and kitten and apply this knowledge to the creation and evaluation of adult behavior problems.

Course Outcome(s):

Identify the fundamental elements of nutrition, evaluate a diet's suitability for a patient and make appropriate dietary recommendations.

Objective(s):

1. Identify the basic nutrient requirements of dogs, cats, rabbits, guinea pigs, rats/mice and ferrets.
2. Describe how to properly feed cats and dogs during growth, maintenance, pregnancy/lactation and geriatric phases of the animal's life cycle.
3. Describe each of the six basic nutrient groups and the role of each in nutrition.
4. Recognize the clinical outcomes of common nutrient deficiencies or excesses in cats and dogs.
5. Evaluate a variety of types of pet foods for nutritional quality and advise an owner on appropriate feeding practices.

Course Outcome(s):

Coordinate and execute common exam room diagnostic tests, veterinary grooming procedures and blood collection for cats, dogs, pocket pets and birds.

Objective(s):

1. Demonstrate safe restraint of an unsedated dog, cat, rabbit, rat, mouse, and bird for physical exams and other common non-invasive procedures routinely encountered in clinical practice and/or research facilities.
2. Describe how to safely transport dogs, cats and pocket pets for long- or short-distance travel.
3. Conduct a physical assessment, including collection of vital parameters (temperature and pulse and respiration rate) and auscultation of heart and lungs on a dog, cat, rabbit, rat, mouse and bird.
4. Describe the basic husbandry of the rabbit, rat, mouse, guinea pig, ferret and bird including normal temperature, normal pulse, sex determination, estrus characteristics, litter sizes, life spans, gestation lengths, and behavioral physical characteristics of these species.
5. Administer medications to dogs, cats, rabbits, rats and mice via oral and parenteral routes (including subcutaneous and intramuscular injections).
6. List the indications and contraindications for common diagnostics of the eye (Schirmer tear test, fluorescein stain and intraocular pressure measurement) and perform these tests in dogs or cats.
7. Administer ocular medications to a dog or cat in liquid or ointment form.
8. Apply otic medications and perform therapeutic ear cleaning in dogs and cats.
9. Obtain blood for the purpose of routine sampling or diagnostics via venipuncture of the cephalic, saphenous, and jugular vein of a dog or cat.
10. Describe the common blood collection sites of rabbits, rats and mice.
11. Complete a therapeutic bath for a dog and describe the process of therapeutic bathing in dogs and cats noting the differences between the use of a medicated shampoo and a dip.

Methods of Evaluation:

1. Written lecture quizzes
2. Written laboratory quizzes
3. Hands-on evaluation of skills in animal handling, treatments and diagnostic techniques
4. Laboratory written and practical examinations
5. Lecture unit and final examinations
6. Homework assignments
7. Journal article review
8. Research papers
9. Creation of a PowerPoint

Course Content Outline:

1. Principles of learning
 - a. Behavior modification
 - b. Operant conditioning
 - c. Classical conditioning
 - d. Punishment vs. reinforcement
 - e. Sensitization vs. habituation
2. Normal canine development and adult behavior
 - a. Physical milestones of development
 - b. Behavioral milestones of development
 - c. Impact of negative experiences during puppyhood on adult behavior

3. Common canine behavior problems and behavior therapies
 - a. Pharmaceutical modification of behavior
 - b. Aggression
 - i. Forms of aggression
 - c. Separation anxiety
 - d. Destructive behavior
 - e. Coprophagy
 - f. House training
4. Normal feline developmental and adult behavior
 - a. Physical milestones of development
 - b. Behavioral milestones of development
 - c. Impact of negative experiences during kittenhood on adult behavior
5. Common feline behavior problems and behavior therapies
 - a. Pharmaceutical modification of behavior
 - b. Aggression
 - i. Forms of aggression
 - ii. Differences between manifestation of aggression between cats and dogs
 - c. Inappropriate elimination
 - d. Destructive clawing
6. Animal nutrition
 - a. Basic nutrient categories
 - i. Carbohydrates
 - ii. Fats
 - iii. Protein
 1. Differences in protein quality and digestibility
 - iv. Water
 - v. Vitamins
 1. Fat-soluble vitamins
 2. Water-soluble vitamins
 3. Common vitamin deficiencies and associated clinical signs
 4. Common vitamin toxicities and associated clinical signs
 - vi. Minerals
 1. Common mineral deficiencies and associated clinical signs
 2. Common mineral toxicities and associated clinical signs
7. Types of pet food
 - a. Canned
 - b. Dry
 - c. Semi-moist
 - d. Raw
 - e. Home-prepared
8. Pet food labels
 - a. Required information
 - b. Regulation of pet food
 - c. Analyzing and interpreting label information
 - i. Ingredient quality
 - ii. Nutrient density
9. Marketing of pet foods
 - a. Generic brands vs. premium brands
10. Nutrient requirements
 - a. General requirements
 - b. Species requirements
 - i. Taurine for cats
 - ii. Cats as obligate carnivores
 - iii. Vitamin C for guinea pigs
 - iv. Roughage for rabbits and guinea pigs
11. Analyzing pet food packages for nutritional
12. Feeding for life stages
 - a. Puppies and kittens, newborn through weaning
 - b. Orphan puppies and kittens

- c. Growing dogs and cats (through 6-10 mos. of age)
- d. Adult dogs and cats
- e. Pregnant and lactating dogs and cats
- f. Performance and working dogs
- g. Geriatric animals
- 13. Feeding for appropriate body condition
 - a. Body condition scoring procedures
 - b. Obesity in pets
 - c. Designing feeding plans for resolving obesity
 - d. Appropriate use and types of treats
- 14. Food additives
 - a. Preservatives
 - b. Flavorings
 - c. Essential fatty acids
 - d. Supplements (e.g., glucosamine)
- 15. Canine techniques
 - a. Safe restraint of the unsedated animal
 - b. Therapeutic bathing and grooming
 - c. Physical assessment
 - i. Assessment of vital signs (temperature, pulse rate and quality, respiratory rate and quality)
 - ii. Cardiac and pulmonary auscultation
 - d. Ear cleaning
 - e. Expression of anal sacs
 - f. Proper application of topical ophthalmic and otic preparations
 - g. Ophthalmic diagnostics (Schirmer tear test, fluorescein stain, intraocular pressure measurement using a tonometer)
 - h. Administration of oral and parenteral medications
 - i. Routine venipuncture techniques
 - j. Nail trimming
- 16. Feline techniques
 - a. Safe restraint of the unsedated animal
 - b. Therapeutic bathing and grooming
 - c. Physical assessment
 - i. Assessment of vital signs (temperature, pulse rate and quality, respiratory rate and quality)
 - ii. Cardiac and pulmonary auscultation
 - d. Ear cleaning
 - e. Proper application of topical ophthalmic and otic preparations
 - f. Administration of oral and parenteral medications
 - g. Routine venipuncture techniques
 - h. Claw trimming
- 17. Rabbit techniques
 - a. Safe restraint of the unsedated animal
 - b. Routine husbandry and associated clinical problems
 - c. Physical assessment
 - d. Administration of oral and parenteral medications
 - e. Routine venipuncture techniques
- 18. Rat and mouse techniques
 - a. Safe restraint of the unsedated animal
 - b. Routine husbandry and associated clinical problems
 - c. Environmental enrichment
 - d. Physical assessment
 - e. Administration of oral and parenteral medications
 - f. Routine venipuncture techniques
- 19. Avian techniques
 - a. Safe restraint of the unsedated animal
 - b. Routine husbandry and environmental enrichment
 - c. Physical assessment

- d. Trimming nails
- e. Physical assessment and obtaining objective data (e.g., vital stats)

Resources

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

Boyle, Jennifer. *Crow and Walshaw's Manual of Clinical Procedures in the Dog, Cat Rabbits and Rodents*. 4th ed. St. Louis, MO: Wiley Blackwell, 2016.

Anderson, Lynn C., Otto, Glen, Pritchett-Corning, Kathleen R., Whary, Mark T., and Fox, James G. *Laboratory Animal Medicine*. 3rd ed. San Diego, CA: Academic Press, 2015.

Fascetti, Andrea J. and Delaney, Sean J. *Applied Veterinary Clinical Nutrition*. 1st ed. West Sussex, UK: Wiley Blackwell, 2012.

Horwitz, Debra F. . *Blackwell's Five Minute Veterinary Consult Clinical Companion: Canine & Feline Behavior*. 2nd ed. Ames, IA: Blackwell Publishing, 2018.

Landsberg, Gary, Hunthausen, Wayne, and Ackerman, Lowell. *Behavior Problems of the Dog and Cat*. 3rd ed. Edinburgh, UK: Elsevier, Ltd., 2011.

Meric Taylor, Susan. *Small Animal Clinical Techniques*. 2nd ed. St. Louis, MO: Elsevier, 2016.

Quesenberry, Katherine, Mans, Christophe, Orcutt, Connie and Carpenter, James W. *Ferrets, Rabbits, and Rodents - Clinical Medicine and Surgery*. 4th ed. St. Louis, MO: Elsevier, 2020.

Rodan, Ilona, and Heath, Sarah. *Feline Behavioral Health and Welfare*. 1st ed. St. Louis, MO: Elsevier, 2016.

Weiss, Emily, Mohan-Gibbons, Heather, and Zawistowski, Stephen. *Animal Behavior for Shelter Veterinarians and Staff*. 1st ed. Ames, IA: Wiley-Blackwell, 2015.

Yin, Sophia. *Low Stress Handling, Restraint and Behavior Modification of Dogs and Cats: Techniques for Developing Patients Who Love Their Visits*. 1st ed. Davis, CA: Cattle Dog Publishing, 2009.

Resources Other

1. <https://go.atdove.org/>
2. Essential Calculations for Veterinary Nurses and Technicians, 4th e. Lake, Terry. 2022. ISBN: 9780702084010

3. Clinical Anatomy & Physiology for Veterinary Technicians, 4th e. Colville. 2023 ISBN: 9780323793414
4. Review Questions and Answers for Veterinary Technicians, 6th e. Prendergast. 2021 ISBN: 9780323759878

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