COLBY COMMUNITY COLLEGE

Syllabus

Course Number/Title: VT 245 Laboratory Animal & Exotic Animal Medicine
VT 246 Lab

Year: Fall 2012

Department: Veterinary Technology

Credit Hours: Lecture 2
Lab 1

Required Text: Sirois, M. Laboratory Animal Medicine Principles & Procedures, St. Louis: Elsevier (Mosby), 2005. ISBN: 0-323-01944-7.

Days/Time:
Lecture MW 9:05 am - 10:00 am
Lab 01 M 2:20 pm - 3:40 pm
Lab 02 W 2:20 pm - 3:40 pm

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Lab – AG 603

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Course Placement: Sophomore Veterinary Technology

Prerequisite: VT 130 & VT 131 Veterinary Clinical Procedures & Lab.*

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***Co-requisite**: VT 246 Laboratory Animal & Exotic Animal Medicine Lab.

Rationale

Students will acquire job skill competencies for graduate veterinary technology in laboratory animal and exotic animal medicine.

Course Description

VT245:
Prerequisite: VT 130 and VT 131 (Veterinary Clinical Procedures and Lab) Co-requisite: VT 246 (Laboratory Animal and Exotic Animal Medicine Laboratory). This course involves a study of laboratory animal medicine, regulatory medicine, and avian medicine.

Topics covered:

Avian medicine:
Restraint

- Housing
- Nutrition
- Breeding
- Identification
- Nail and beak trims
- Crop feeding
- Physical examination
- Laboratory procedures

Mice, rats, guinea pigs, gerbils, hamsters, ferret, rabbits, and non-human primates:

- Restraint
- Sexing
- Breeding
- Identification
- Handling
- Housing
- Nutrition
- Injections
- Blood collection
- Oral dosing
- Anesthesia
- Common diseases
- Euthanasia

Aquarium Care

- Appropriate fish for a beginner's tropical fresh water aquarium
- Inappropriate fish for a beginner's tropical fresh water aquarium
- Appropriate equipment for a beginner's tropical fresh water aquarium
- How to set up a basic tropical fresh water aquarium
- Appropriate feeding strategies and diets for a beginner's aquarium
- Appropriate maintenance of aquariums
- Common pitfalls of beginning aquarists
- Common disease conditions in tropical fresh water aquariums
- Signs of sick fish

Reptiles

- Species of snakes, lizards, and turtles/tortoises commonly kept in captivity
- General principles used to restrain reptiles such as snakes, lizards, and turtles/tortoises
- Nutritional needs and diets of reptiles including snakes, iguanas, turtles/tortoises
- Watering issues of reptiles including snakes, iguanas, and turtles/tortoises
- Caging issues (temperature, humidity, light) of reptiles
- Appropriate transportation methods for reptiles
- Reproduction issues of reptiles
- Common diseases

Amphibians

- Species of frogs, salamanders, and sirens commonly kept in captivity
- General principles used to restrain amphibians
- Nutritional needs and diets of amphibians
- Watering issues of amphibians
- Caging issues (temperature, humidity, light) of amphibians
- Reproduction issues of amphibians
- Appropriate transportation methods of amphibians

VT246:
Prerequisite: VT130 and VT131 (Veterinary Clinical Procedures and Lab). This hands-on laboratory teaches skills necessary for the Veterinary Technician to work with laboratory animals, pocket pets, and pet birds.

Course Outline

1. Introduction to laboratory animal medicine
    a. Describe the principles of scientific research
    b. List the members of the research team and describe their roles
        i. Principal investigator
        ii. Laboratory animal technician (LAT)
        iii. Assistant laboratory animal technician (ALAT)
        iv. Laboratory animal technologist (LATG)
        v. Laboratory animal veterinarian
        vi. Administrator
    c. Explain the legal requirements of laboratory animal use
        i. The Animal Welfare Act
            1. Describe the laws which created the AWA
            2. Explain the regulations covering laboratory animal use
            3. Define the Institutional Animal Care and Use Committee
                a. Describe the membership of the IACUC
                b. Explain the responsibilities of the IACUC
        ii. Guide for the Care and Use of Laboratory Animals
            1. Recall the agency responsible for the creation of the Guide
            2. Explain the regulations covering laboratory animal use
            3. Explain when it is necessary to comply with the Guide
        iii. Public Health Service Policy of Humane Care and Use of Laboratory Animals
            1. Recall the agency responsible for this policy
            2. Relate this policy to requirements for euthanasia of laboratory animals
        iv. Describe the Food and Drug Administration regulations as they pertain to laboratory animal research
        v. Describe the interests of the Environmental Protection Agency as they pertain to laboratory animal research
        vi. Describe the interests of the Consumer Product Safety Commission as they pertain to laboratory animal research
        vii. Describe the interests of the National Institutes of Health as they pertain to laboratory animal research
        viii. Describe the interests of NIH Research Laboratories as they pertain to laboratory animal research
        ix. Describe the interests of the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) as they pertain to laboratory animal research
    d. List and explain the three “R’s” of laboratory animal use
    e. Analyze the morals and ethics of animal research
        i. Describe the types of attitudes that exist in the general population toward the use of animals in research
        ii. Describe the benefits of animal use in research
        iii. Define the concept “human-animal bond”
2. General housing concerns
    a. Describe environmental concerns relating to animal housing
        i. Temperature and humidity

ii. Ventilation
iii. Air pressure
iv. Lighting
v. Noise
vi. Social environment
vii. Activity

b. Describe the different types of caging and list the advantages and disadvantages of different types of caging
c. Describe appropriate types of environmental enrichment for laboratory animal species
d. Differentiate between microenvironments and macroenvironments
e. Describe feeding and watering devices used for laboratory animals
f. List and describe types and sources of animals for research

3. The rat as a laboratory animal
   a. Describe the normal behavior of the rat
   b. Describe the husbandry, housing, watering, nutrition and breeding of the rat
   c. Perform the correct restraint and handling of the rat
   d. Explain identification methods used in the rat
   e. Administer medications in an appropriate manner
      i. Injections
         1. Subcutaneous
         2. Intraperitoneal
         3. Intramuscular
         4. Intravenous
      ii. Oral medications
   f. Anesthetize one animal
   g. Perform and/or describe blood collection techniques
      i. Tail clip
      ii. Toenail clip
      iii. Venous collection
      iv. Retroorbital plexus
      v. Cardiocentesis
   h. List and describe common diseases of the rat
      i. Bacterial
         1. Murine respiratory mycoplasmosis
         2. Tyzzer's disease
         3. Pasteurellosis
         4. Streptococcosis
         5. Streptobacillosis
         6. Miscellaneous bacterial infectious
      ii. Viral
         1. Sialodacroadenitis
         2. Sendai virus
         3. Other viral disease
      iii. Mycotic diseases
      iv. Parasitic diseases
         1. Blood parasites
         2. Nematodes
         3. Protozoa
         4. Cestodes and Acanthocephalans
         5. Ectoparasites
      v. Noninfectious diseases

1. Neoplasia
2. Age-associated diseases

vi. Husbandry related diseases

1. Trauma
2. Barbering
3. Nutritional diseases
4. Ringtail
5. Malocclusion

i. Perform and/or describe appropriate euthanasia procedures

4. The mouse as a laboratory animal

a. Describe the normal behavior of the mouse
b. Describe the husbandry, housing, watering, nutrition and breeding of the mouse
c. Perform the correct restraint and handling of the mouse
d. Explain identification methods used in the mouse
e. Administer medications in an appropriate manner

i. Injections

1. Subcutaneous
2. Intraperitoneal
3. Intramuscular
4. Intravenous

ii. Oral medications

f. Anesthetize one animal
g. Perform and/or describe blood collection techniques

i. Toenail clip
ii. Venous collection
iii. Retroorbital sinus
iv. Cardiocentesis

h. List and describe common diseases of the mouse

i. Bacterial

1. Pneumonia
2. Tyzzer’s disease
3. Pasteurellosis
4. Hepatitis
5. Transmissible murine colonic hyperplasia
6. Miscellaneous bacterial infections

ii. Viral

1. Sendai virus
2. Mousepox
3. Lymphocytic choriomeningitis
4. Mouse hepatitis virus
5. Reovirus type 3
6. Other viral disease

iii. Mycotic diseases
iv. Parasitic diseases

1. Blood parasites
2. Nematodes
3. Protozoa
4. Cestodes and Acanthocephalans
5. Ectoparasites

v. Noninfectious diseases

1. Neoplasia

2. Age-associated diseases

i. Perform and/or describe appropriate euthanasia procedures

5. The guinea pig as a laboratory animal
   a. Describe the normal behavior of the guinea pig
   b. Describe the husbandry, housing, watering, nutrition and breeding of the guinea pig
   c. Perform the correct restraint and handling of the guinea pig
   d. Explain identification methods used in the guinea pig
   e. Administer medications in an appropriate manner
      i. Injections
         1. Subcutaneous
         2. Intraperitoneal
         3. Intramuscular
         4. Intravenous
      ii. Oral medications
   f. Anesthetize one animal
   g. Perform and/or describe blood collection techniques
      i. Toenail clip
      ii. Venous collection
      iii. Cardiocentesis
   h. List and describe common diseases of the guinea pig
      i. Bacterial
         1. Pneumonia
         2. Cervical lymphadenitis
         3. Bacterial enteritis
         4. Tyzzer's disease
         5. Mastitis
         6. Conjunctivitis
      ii. Viral
         1. Cytomegalovirus
         2. Cavian leukemia
      iii. Mycotic diseases
      iv. Parasitic diseases
         1. Gastrointestinal parasites
         2. Ectoparasites
      v. Noninfectious diseases
         1. Neoplasia
         2. Age-associated diseases
      vi. Husbandry-related diseases
         1. Pododermatitis
         2. Trauma
         3. Alopecia
      vii. Nutritional diseases
         1. Scurvy
         2. Metastatic mineralization
         3. Muscular dystrophy
      viii. Other disease problems
         1. Antibiotic toxicity
         2. malocclusion of premolar teeth
         3. Vaginitis and preputial infections
         4. Heat stress
         5. Dystocia

6. Pregnancy toxemia

i. Perform and/or describe appropriate euthanasia procedures

6. The rabbit as a laboratory animal
   a. Describe the normal behavior of the rabbit
   b. Describe the husbandry, housing, watering, nutrition and breeding of the rabbit
   c. Perform the correct restraint and handling of the rabbit
   d. Explain identification methods used in the rabbit
   e. Administer medications in an appropriate manner
      i. Injections
         1. Subcutaneous
         2. Intramuscular
         3. Intravenous
      ii. Oral medications
   f. Anesthetize one animal
   g. Perform and/ or describe blood collection techniques
      i. Marginal ear vein
      ii. Jugular, cephalic or lateral saphenous
      iii. Cardiocentesis
   h. List and describe common diseases of the rabbit
      i. Bacterial
         1. Pasteurellosis
         2. Pneumonia
         3. Enterotoxemia and mucoid enteropathy
         4. Listeriosis
         5. Tyzzer's Disease
         6. Mastitis
         7. Treponematosis
         8. Tularemia
         9. Miscellaneous bacterial infectious
      ii. Viral
         1. Papilloma virus
         2. Rabbit pox
         3. Myxomatosis
         4. Rotavirus
         5. Viral hemorrhagic disease
      iii. Mycotic diseases
      iv. Parasitic diseases
         1. Endoparasites
         2. Coccidiosis
         3. Encephalitozoonosis
         4. Miscellaneous protozoal parasites
         5. Nematodes
         6. Cestodes
         7. Ectoparasites
      v. Noninfectious diseases
         1. Neoplasia
         2. Age-associated diseases
      vi. Husbandry-related diseases
         1. Pododermatitis
         2. Trauma
         3. Moist dermatitis

4. Buphthalmia
5. Trichobezoars
6. Splay leg
7. Malocclusion

i. Perform and/or describe appropriate euthanasia procedures

7. The hamster as a laboratory animal
   a. Describe the normal behavior of the hamster
   b. Describe the husbandry, housing and nutrition of the hamster
   c. Describe the correct restraint and handling of the hamster
   d. Explain identification methods used in the hamster
   e. Explain the administration of medications in an appropriate manner
      i. Injections
      ii. Oral medications
   f. Describe anesthesia methods in the hamster
   g. Describe blood collection techniques
   h. List and describe common diseases of the hamster
      i. Bacterial
         1. Proliferative ileitis
         2. Antibiotic-associated enterocolitis
         3. Enteritis
         4. Tyzzer's disease
         5. Pneumonia
      ii. Viral
         1. Lymphocytic choriomeningitis
      iii. Mycotic diseases
      iv. Parasitic diseases
         1. Gastrointestinal parasites
         2. Ectoparasites
      v. Noninfectious diseases
         1. Neoplasia
         2. Age-associated diseases
            a. Amyloidosis
            b. Polycystic disease
            c. Cardiovascular disease
         3. Husbandry-related diseases
            a. Trauma
            b. Barbering
            c. Nutritional diseases
   i. Describe appropriate euthanasia procedures
8. The Mongolian gerbil as a laboratory animal
   a. Describe the normal behavior of the gerbil
   b. Describe the husbandry, housing and nutrition of the gerbil
   c. Describe the correct restraint and handling of the gerbil
   d. Explain identification methods used in the gerbil
   e. Explain the administration of medications in an appropriate manner
      i. Injections
      ii. Oral medications
   f. Describe anesthesia methods in the gerbil
   g. Describe blood collection techniques
   h. List and describe common diseases of the gerbil
   i. Describe appropriate euthanasia procedures

9. The ferret
    a. Describe the normal behavior of the ferret
    b. Describe the husbandry, housing and nutrition of the ferret
    c. Describe the correct restraint and handling of the ferret
    d. Explain identification methods used in the ferret
    e. Explain the administration of medications in an appropriate manner
        i. Injections
        ii. Oral medications
    f. Describe anesthesia methods in the ferret
    g. Describe blood collection techniques
    h. List and describe common diseases of the ferret
        i. Canine distemper
        ii. Rabies
        iii. Bacterial diseases
        iv. Parasite infections
        v. Miscellaneous diseases
    i. Describe appropriate euthanasia procedures
10. Non-human primates as laboratory animals
    a. Describe the normal behavior of non-human primates
    b. Describe the husbandry, housing and nutrition of non-human primates
    c. Describe the correct restraint and handling of non-human primates
    d. Explain identification methods used in non-human primates
    e. Explain the administration of medications in an appropriate manner
        i. Injections
        ii. Oral medications
    f. Describe anesthesia methods in non-human primates
    g. Describe blood collection techniques
    h. List and describe common diseases of non-human primates
        i. Bacterial disease
            1. Gastroenteritis
                a. Shigellosis
                b. Campylobacteriosis
                c. Salmonellosis
                d. Pseudotuberculosis
                e. Helicobacteriosis
            2. Respiratory diseases
            3. Miscellaneous bacterial diseases
        ii. Viral diseases
            1. Hepatitis viruses
            2. Measles
            3. Poxviruses
            4. Simian hemorrhagic fever
            5. Retroviruses
            6. Miscellaneous viral diseases
        iii. Mycotic disease
        iv. Parasitic disease
            1. Blood parasites
            2. Gastrointestinal parasites
            3. Ectoparasites
        v. Noninfectious diseases
            1. Neoplasia

vi. Metabolic diseases
vii. Age-associated diseases
viii. Husbandry–related diseases
1. Dental disease
2. Nutritional disease

i. Describe appropriate methods of euthanasia in non-human primates

11. Aquarium Care
a. Appropriate fish for a beginner's tropical fresh water aquarium
b. Inappropriate fish for a beginner's tropical fresh water aquarium
c. Appropriate equipment for a beginner's tropical fresh water aquarium
d. How to set up a basic tropical fresh water aquarium
e. Appropriate feeding strategies and diets for a beginner's aquarium
f. Appropriate maintenance of aquariums
g. Common pitfalls of beginning aquarists
h. Common disease conditions in tropical fresh water aquariums
i. Signs of sick fish

12. Reptiles
a. Species of snakes, lizards, and turtles/tortoises commonly kept in captivity
b. General principles used to restrain reptiles such as snakes, lizards, and turtles/tortoises
c. Nutritional needs and diets of reptiles including snakes, iguanas, turtles/tortoises
d. Watering issues of reptiles including snakes, iguanas, and turtles/tortoises
e. Caging issues (temperature, humidity, light)
f. Appropriate transportation methods
g. Reproduction issues
h. Common diseases

13. Amphibians
a. Species of frogs, salamanders, and sirens commonly kept in captivity
b. Restraint
c. Nutritional needs and diets
d. Watering issues
e. Caging issues (temperature, humidity, light)
f. Reproduction issues
g. Appropriate transportation methods

14. Pet birds
a. Describe the characteristics of psitticines and passerines
b. Identify general groups of psitticines and passerines and their distinguishing characteristics
i. Lories and lorikeets
ii. Macaws and conures
iii. Cockatoos and cockatiels
iv. Parrots and parakeets
v. Lovebirds and parrolets
c. Review the anatomy of parrots
i. Skeletal system
1. Thin cortices
2. Susceptible to fractures
ii. Reproductive system
1. One ovary
2. Testes are intra-abdominal
3. Sexing methods
a. Monomorphic vs. dimorphic

b. Genetic sexing
c. Surgical sexing

4. Breeding season generally coincides with increasing photoperiods
5. Reproductive diseases

iii. Integument

1. Anatomy of feathers
2. Nail trimming
3. Beak trimming
4. Wing trimming
5. Feather diseases

iv. Gastrointestinal system (Short—affects drug absorption)

d. Avian husbandry
   i. Caging requirements
   ii. Nutrition
   iii. Environmental enrichment
   iv. Identification
   v. Sanitation
e. Clinical avian medicine
   i. Restraint
   ii. Physical examination
   iii. Blood collection
   iv. Anesthesia and surgery

Course Learning Objectives Assessed

Students will perform animal nursing and clinical diagnostic procedures, including but not limited to wound management, blood pressure measurement, and electrocardiography, to aid in the diagnosis, prognosis and implementation of prescribed treatments; will document initial and ongoing evaluations of physical, behavioral, nutritional and environmental status of animals to provide for optimal animal/ client safety and health; and will educate clients and the public about animal care, including but not limited to post-operative care, preventative care, and zoonosis, to promote and maintain the health of animals and the safety of clients and the public.

Students will prepare the surgical environment, equipment, instruments, and supplies and will prepare the patient for surgery while functioning as a sterile surgical technician and/ or a circulating surgical technician

1. The veterinary technician will be familiar with the basic principles of animal research and understand the utilization of laboratory animals in animal research. The veterinary technician will also have a working knowledge of federal, state and local animal welfare regulations.
2. Given the unique requirements of pet birds, the veterinary technician will safely obtain subjective and objective data that will allow evaluation of the patient. The veterinary technician will be able to
   a. Identify husbandry issues
   b. Discern appropriate from inappropriate nutritional support
   c. Recognize normal from abnormal behavior patterns

Course Competencies

The learning outcomes and competencies detailed in this syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course.

Students will be required to demonstrate proficiency in job competencies utilizing the following competency rating scale:

3: Excellent; able to work independently
2: Satisfactory; entry level skills
1: Unsatisfactory
0: Not applicable

Course Competencies: VT 245

Task ID	Standard Assessment Criteria
EX01A1	Recognize and understand birds Recognize various groups of psitticines Lories Lorikeets Macaws Conures Cockatoos Cockatiels Parrots Parakeets Lovebirds Parrolets Identify species of psitticines that make good talkers Recognize selected species of passerines Zebra finch Canaries Doves
EX01A1	Recognize and understand birds Recognize various groups of psitticines Lories Lorikeets Macaws Conures Cockatoos Cockatiels Parrots Parakeets Lovebirds Parrolets Identify species of psitticines that make good talkers Recognize selected species of passerines Zebra finch Canaries Doves

EX01B1	Recognize and understand reptiles Identify species of snakes commonly kept in captivity Constrictors Boas Pythons Rat snakes Milk snakes Racer snakes Gopher snakes Garter snakes Identify species of lizards commonly kept in captivity Green iguana Leopard gecko Identify species of turtles/ tortoises commonly kept in captivity Common and ornate box turtles Leopard tortoise Red-eared slider African Spurred Tortoise or Sulcata Tortoise Russian Tortoise or Horsfield's Tortoise
EX01F1	Recognize and understand hamsters Identify *Mesocricetus auratus,* the Syrian or golden hamster
EX01F2	Restrain hamsters Describe the general principles used to restrain hamsters Moving from one cage to another Make sure the hamster is awake and aware of your presence, so it doesn't bite Scoop the hamster up in your hand or place a can in the cage for the hamster to enter and carry it in the can Can also pick up by grasping the loose skin over the neck Procedural Restraint Grasp the loose skin over the neck Skin must be fully gathered otherwise the hamster can turn and bite Place the hamster in the palm of the hand
EX01G1	Recognize and understand gerbils Identify *Meriones unguiculatus* the Mongolian Gerbil
EX01G2	Restrain gerbils Describe the general principles used to restrain gerbils Similar to mice Do not pick up by the tail because the skin can slip off
EX01H1	Recognize and understand ferrets Identify European ferret Recognize coat colors Fitch or sable Albino Cinnamon Shetland sable
EX01H2	Restrain ferrets Describe general principles used to restrain ferrets Most ferrets can be easily restrained by picking them up and cradling them in the crook of the arm For firmer restraint, grasp the loose skin over the back of the neck and hold animal suspended For invasive procedures Place hand across shoulders with thumb under the chin and fingers around the neck and behind the forelimbs Use other hand to restrain the hindquarters by placing a hand across the pelvis just cranial to the forelimbs

EX02A1	Understand nutritional needs and diets of pet birds Discuss the advantages and disadvantages of pelleted diets Nutritionally complete Less waste Less palatable Explain the general disadvantages of all seed diets Deficient in calcium Deficient in Vitamin A Too high in fat Discuss the need for cuttle bone and other calcium supplements Explain the feeding patterns of larger psitticines in the wild

EX02A2	Understand nutritional needs and diets of reptiles Explain the general nutritional requirements of pet reptiles Snakes Boas and pythons Consume whole prey items (rats, mice, gerbils, hamsters) Avoid live prey which can injure the snake Jiggle dead prey in front of snake with tongs—never fingers Feed juveniles every 6-7 days and adults every 7-14 days Keep snake at proper temperature range Iguanas Vegetarians—feed only vegetable matter or commercially prepared diets Hatchlings (up to 14 inches) Finely chopped food twice daily Up to 3 feet Medium chopped food once daily Adults 2 ½ years old or over 3 feet Coarsely chopped food every other day Foods 80-90% percent of diet should be dark-green leafy vegetables Collard greens Turnip greens Mustard greens Bok choy Swiss chard Clover Red or geen cabbage Watercress Savoy Kohlrabi Dandelions Escarole Parsley Alfalfa pellets 10-15% of diet should be from the following Frozen mixed vegetables Squash Sprouts Carrots Cooked sweet potato Cucumber Okra Parsnips Spineless cactus pads Asparagus Mushrooms Green and red peppers Peas Beans Corn Green beans Backyard weeds can be offered as forage Fruit should make up the remainder of the diets (use as top dressing—they are mineral poor but more palatable) Turtles and tortoises Research the species that is to be fed Natural lighting or full-spectrum lighting is necessary for vitamin D production Feed tortoises 95% vegetables with majority dark-green leafy Chop small enough so animal cannot pick and choose Hatchling feed daily Adults feed every other day Young box turtles eat primarily animal material—earthworms, slugs, snails, beetles, millipedes, spiders, crayfish and grasshoppers Aquatic turtles are difficult to care for Require clean, warm water for swimming. Almost always eat their meals in the water Feed a variety, such as

EX02A3	Understand nutritional needs and diets of amphibians Explain the general nutritional requirements of pet amphibians Research the nutritional requirements of the specific species Most amphibians are insectivores and require high protein diets Wild caught amphibians must be habituated to dead food and may fail to convert Prepared diets are available
EX02A5	Understand nutritional needs and diets of guinea pigs Classify the nutritional requirements of the guinea pig Discuss appropriate diets for the guinea pig Recall that guinea pigs require Vitamin C in the diet Recall that guinea pigs should be fed additional fiber and vegetables/fruit Explain appropriate feeding methods
EX02A6	Understand nutritional needs and diets of hamsters Classify the nutritional requirements of the hamster Discuss appropriate diets for the hamster Feed commercial rodent chow Place pellets directly on the floor of the cage as they cannot eat through wire hopper feeders due to their broad muzzle Recall that hamsters should be fed ad libitum Daily feed consumption – 10-15 g Explain appropriate feeding methods Use the feed within 6 months of the milling date
EX02A7	Understand nutritional needs and diets of gerbils Classify the nutritional requirements of the gerbil Discuss appropriate diets for the gerbil Feed commercial rodent chow Place pellets directly on the floor of the cage May supplement the diet with small amounts of sunflower seeds and clean, fresh vegetables Recall that gerbils should be fed ad libitum Daily feed consumption – 5-7 g Explain appropriate feeding methods Use the feed within 6 months of the milling date
EX02A8	Understand nutritional needs and diets of ferrets Explain nutritional needs of ferrets Feed commercial ferret chow or cat chow that contains a protein content of at least 30% Feed in large heavy (indestructible) bowls that cannot tip over placed on the cage floor
EX02B1	Understand watering issues of pet birds Describe correct placement of feed and water dishes
EX02B2	Understand watering issues of reptiles Explain general water issues that apply to reptiles Research needs of individual species being housed Snakes Generally require a bowl of fresh water large enough to soak in Turtles Require fresh water changed several times a week
EX02B3	Understand watering issues of amphibians Explain general water issues that apply to amphibians Amphibians possess mucous glands that keep the skin moist to allow for respiration through the skin. This puts them at risk for desiccation Use bottled spring water or conditioned water only Water may be conditioned by allowing it to stand open in a container for 24 hours Chlorine and other chemicals added to drinking water is toxic to amphibians Water in tanks must be changed several times per week or a continuous water flow system used Amphibians from ponds and slow moving water generally tolerate lower water quality better than stream species
EX02B5	Understand watering issues of guinea pigs Describe types of watering systems Describe problems associated with different types of watering systems

EX02B6	Understand watering issues of hamsters Recall that the daily water consumption of the hamster is 9-12 ml
EX02B7	Understand watering issues of gerbils Recall that the daily water consumption of the gerbil is 4 ml
EX02B8	Understand watering issues of ferrets Describe watering issues of ferrets Use heavy water bowls that cannot tip over or Water bottles hung inside cage
EX02C1	Understand caging issues (temperature, humidity, light) of pet birds Describe appropriate size and type of caging for pet psitticines Explain appropriate sanitation for caged birds Discuss appropriate temperature, humidity and lighting for caged birds Describe the necessary exercise requirements of psitticines Discuss the types of environmental enrichment needed for pet psitticines
EX02C2	Understand caging issues (temperature, humidity, light) of reptiles Explain general caging issues that apply to reptiles Snakes House in glass or clear plastic enclosures with adequate ventilation Secure cage with appropriate fasteners as most snakes are escape artists Maintain appropriate temperatures for species housed Substrate Newspaper or butcher's paper is excellent Indoor/ outdoor carpet Avoid bark, gravel, sand Branches and shelves provide vertical space but must be nonporous and easily cleaned Most snakes require a warm environment with relatively high humidity Use natural lighting or artificial ultraviolet light Snakes shed skin regularly—difficulties arise when the temperature or humidity is too low Turtles May be housed in plastic or glass tanks with inclined floors Heat lamps may be used to provide a range of ambient temperatures in an enclosure Thoroughly clean tanks weekly with mild detergent—rinse well Wear latex gloves when handling
EX02C3	Understand caging issues (temperature, humidity, light) of amphibians Explain general caging issues that apply to amphibians Because amphibians come from many different habitats, it is important to research each particular species' needs Amphibians can generally be housed in plastic or glass containers Containers must have smooth sides to avoid abrading and traumatizing the skin Water quality is important Day/ night cycles have an impact on metabolism Time of day of feeding can affect how food is metabolized Temperature requirements are relatively narrow for tropical species Temperate species may hibernate over winter Many species are susceptible to toxins; for example, nicotine on the hands of smokers
EX02C5	Understand caging issues (temperature, humidity, light) of guinea pigs Describe the proper caging of the guinea pig Describe the husbandry of the guinea pig Describe how to move a guinea pig safely to a new cage
EX02C6	Understand caging issues (temperature, humidity, light) of hamsters Recall the following information: Recommended environmental temp – 21-24 degrees C Recommended environmental relative humidity – 40-60%
EX02C7	Understand caging issues (temperature, humidity, light) of gerbils Recall the following information: Recommended environmental temp – 18-22 degrees C Recommended environmental relative humidity – 45-55%

EX02C8	Understand caging issues (temperature, humidity, light) of ferrets Describe appropriate husbandry of the ferret Ferrets may be housed in cages used for dogs, cats or rabbits Use solid bottom cages to prevent injury to small feet Place nest boxes and soft towels in cage for burrowing and hiding places Ferrets are more susceptible to heat and require temperatures lower than 80oF and adequate ventilation

EX02D	Understand unique husbandry issues for each species: aquarium care Recommend appropriate fish for a beginner's tropical fresh water aquarium Most tetras Barbs Danios Recall fish to avoid for a beginner's tropical fresh water aquarium Goldfish (tropical tanks are inappropriate) Chinese Algae Eaters Male Bettas Large catfish Mollies (sensitive to water conditions) Sharks Cichlids (not appropriate for beginners) Select appropriate equipment for a beginner's tropical fresh water aquarium Tank Glass is cheaper than acrylic Rectangular shape more appropriate for beginners and provides greater surface area Bigger tanks are better and easier to establish and maintain Minimum size 20 gallons Stand The stand should be specifically designed for the tank Consider weight of tank is at least 10 pounds per gallon Cover Plastic Glass Substrates Not necessary for most fish Most commonly used is gravel—a medium gravel is best to avoid trapping fish or debris Decorations Select only safe items that are suitable for the type of tank to be set up Provides hiding places for fish Live plants require stronger lighting for health Lights Heater and thermometer Most aquarium species will do well between 76 and 80 degrees F Heaters may be hang-on or submersible Submersible heaters tend to be more reliable and accurate Purchase appropriate size heater for size of aquarium Stick on thermometers are acceptable Filtration Mechanical filtration removes suspended matter but does not remove waste load in water Chemical filtration absorbs water contaminates Activated charcoal or carbon filtration Avoid other chemical media Biological filtration Most important Filtration is performed by microscopic organisms in the filter Removes ammonia and nitrites from aquarium water Water test equipment pH Alkalinity Hardness Aquarium salt Water dechlorinator/ conditioner Ich medication Bucket and siphon hose Use only for aquarium use Gravel cleaning tube Algae scraper Net Explain how to set up a basic tropical fresh water aquarium Describe appropriate feeding strategies and diets for a beginner's aquarium Offer a variety of food types Dry prepared foods Freeze-dried foods Frozen foods

EX02E1	Understand reproduction issues of pet birds Recall that most psitticines require increasing photoperiods to breed Discuss various breeding behaviors of psitticines May exhibit behavioral changes Describe nesting requirements Recall breeding problems associated with pet psitticines Egg binding Sexual frustration Chronic egg laying
EX02E2	Understand reproduction issues of reptiles Explain general breeding issues as they apply to reptiles Some reptiles lay eggs; other deliver live young Egg layers All turtles All tortoises All crocodilians Some lizards Iguanas Water dragons Geckos Veiled chameleons Panther chameleons Monitors Snakes All pythons Kingsnakes Milksnakes Rat snakes Corn snakes Livebearers Some lizards Solomon Island skink Blue-tongue skink Shingle-backed skink Some chameleons Jackson's chameleon Some snakes All boas All vipers Garter snakes Females do not need the presence of a male in order to lay eggs Some species are sexually dimorphic; most species have only subtle differences between male and female Sexing Sex probe Visual exam Ultrasound Surgery Radiographs Males have internal testicles and a copulatory organ, either a single penis or a pair of hemipenes Correct caging, lighting, heating, and diet is essential for successful reproduction Most reptile eggs are artificially incubated In most species that lay eggs, the female digs a hole, deposits the eggs, and hen completely covers the hold Lack of a suitable digging hole is a primary cause of dystocia

EX02E3	Understand reproduction issues of amphibians Explain general breeding issues as they apply to amphibians Research breeding needs of specific species (Example: African clawed frog) Males are identified easily Vocalize during the evening Have smooth rumps Are one half the size of females For breeding give plenty of room Two males and two females require 5-50 gallons of water that is 8-9 inches deep Keep water clean and around 70oF Animals are sexually mature at 10-12 months Fertilization is via inguinal amplexus and can take place any time Sticky eggs are cast loose singly Average length of time from egg to froglet is 6-8 weeks For tadpoles 1 pint water per tadpole Keep separated from adults Change 98% of water daily Feed powdered egg or finely ground goldfish food
EX02E5	Understand reproduction issues of guinea pigs Recall the following information Puberty: 3-4 weeks Sows should be bred before 6 months to avoid dystocia due to fusion of the pubic symphysis Estrus cycle: 16 days Gestation: 63 days Average litter size: 2-6 Babies are born precocious
EX02E6	Understand reproduction issues of hamsters Recall the following information: Puberty - females – 6 weeks Puberty – males – 8 weeks Female hamsters are continuously polyestrous 4 day estrus cycle Shortly after ovulation, the female will produce a creamy white vaginal discharge (usually the second day of the estrous cycle) The female is usually bred in the evening of the third day after the appearance of the vaginal discharge Female is placed in the male's cage on that evening If mating does not occur within 5 minutes or the female becomes aggressive, she is removed from the cage If mating occurs, they are left together until the next morning Vaginal plug present for several hours after mating Gestation 15-18 days Litter sizes – 5-10 pups Pups are born hairless, blind, and deaf, weigh 2 to 3 g, and have teeth Ears open – 3 days Eyes open – 12-14 days Can eat solid food after 1 week Weaning – 19-21 days Leave females undisturbed for 1 week after parturition to reduce the incidence of cannibalism

EX02E7	Understand reproduction issues of gerbils Recall the following information: Puberty - females – 9-12 weeks Puberty – males – 9-18 weeks Female hamsters are polyestrous and monogamous pairs can be left together for life 4-7 day estrus cycle Spontaneous ovulators 25 day gestation period Females bred during the postpartum period often have delayed implantation and gestation periods in excess of 3 weeks Gestation 23-26 days Litter sizes – 3-8 Neonatal gerbils develop more slowly than mice Weaning –21-28 days
EX02E8	Understand reproduction issues of ferrets Explain why female ferrets should be spayed if not intended for breeding
EX02G1	Understand appropriate transportation methods of pet birds Describe how to transport sick birds Describe appropriate transportation methods for injured raptors
EX02G2	Understand appropriate transportation methods of reptiles Explain general principles of transporting reptiles Use sturdy, enclosed, well ventilated containers Snakes, lizards and turtles Place in pillowcase or snake bag Securely tie Place in cooler or in Styrofoam box to provide insulation from temperature changes
EX02G3	Understand appropriate transportation methods of amphibians Explain general principles of transporting amphibians Place in small, plastic container filled with damp moss or moist paper towels Avoid direct sunlight and extreme temperature changes Provide adequate ventilation
EX02G5	Understand appropriate transportation methods of guinea pigs Explain general principles of transporting guinea pigs USDA Animal Welfare Act regulations stipulate Primary enclosure must be sturdy, free from internal protrusions with a large, accessible opening to remove guinea pigs in case of emergency Primary enclosures of corrugated fiberboard, cardboard or plastic must be covered with a wire mesh to prevent escape Ventilation must be on two opposite sides covering 16% of the surface area (or 8% of surface area if ventilation is on four sides) with 1/3 of ventilation on lower 1/3 of enclosure and 1/3 on top. Protrusion on the outside must ensure a 1.9 cm space from other cargo during transport. There must be adequate handholds to allow the enclosure to be picked up without tipping The enclosure must be large enough to allow the animal to turn around freely No more than 15 animals may be placed in the same enclosure The enclosure must have a solid bottom that is clean and sanitized with appropriate litter to absorb waste. The container must be marked “Live Animals” The carrier must observe the animals at least every 4 hours

EX02G6	Understand appropriate transportation methods of hamsters Explain general principles of transporting hamsters USDA Animal Welfare Act regulations stipulate Primary enclosure must be sturdy, free from internal protrusions with a large, accessible opening to remove hamsters in case of emergency Ventilation must be on two opposite sides covering 16% of the surface area (or 8% of surface area if ventilation is on four sides) with 1/3 of ventilation on lower 1/3 of enclosure and 1/3 on top Protrusion on the outside must ensure a 1.9 cm space from other cargo during transport There must be adequate handholds to allow the enclosure to be picked up without tipping The enclosure must be large enough to allow the animal to turn around freely No more than 50 animals may be placed in the same enclosure The enclosure must have a solid bottom that is clean and sanitized with appropriate litter to absorb waste The container must be marked “Live Animals” The carrier must observe the animals at least every 4 hours
EX02G7	Understand appropriate transportation methods of gerbils Explain general principles of transporting gerbils USDA Animal Welfare Act regulations stipulate Primary enclosure must be sturdy, free from internal protrusions with a large, accessible opening to remove gerbils in case of emergency Ventilation must be on two opposite sides covering 16% of the surface area (or 8% of surface area if ventilation is on four sides) with 1/3 of ventilation on lower 1/3 of enclosure and 1/3 on top Protrusion on the outside must ensure a 1.9 cm space from other cargo during transport There must be adequate handholds to allow the enclosure to be picked up without tipping The enclosure must be large enough to allow the animal to turn around freely The enclosure must have a solid bottom that is clean and sanitized with appropriate litter to absorb waste The container must be marked “Live Animals” The carrier must observe the animals at least every 4 hours
EX02G8	Understand appropriate transportation methods of ferrets Explain general principles of transporting ferrets USDA guidelines for transporting species of warm blooded animals other than dogs, cats, rabbits, hamsters, guinea pigs, nonhuman primates and marine mammals are similar to those for the rabbit
EX06A	Administer or inject drugs using appropriate sites: birds Administer IM injection in the breast muscle Palpate the breast muscle on either side of the keel bone Gently part the feathers using Nolvasan or a small amount of alcohol Select the appropriate size needle and syringe, for example, pet parrots use 1 ml syringe with 5/8 in 25 g needle Insert the needle into the middle of the breast muscle Aspirate Inject medication Withdraw needle and apply pressure at the injection site
EX06E	Administer or inject drugs using appropriate sites: guinea pigs List the appropriate sites for administering drugs in the guinea pig Subcutaneous—no more than 5-10 ml Intraperitoneal—less than 8 ml Intramuscular—less than 0.5 ml
EX06F	Administer or inject drugs using appropriate sites: hamsters List the appropriate sites for administering drugs in the hamster Subcutaneous - No more than 3-4 ml under the skin over the nape of the neck Intramuscular - No more than 0.5 ml/site Sites: Quadriceps, Gluteal muscles Intraperitoneal Injections - Introduce needle into the lower right or left quadrant of the abdomen

EX06G	Administer or inject drugs using appropriate sites: gerbils List the appropriate sites for administering drugs in the gerbil Similar to mice IM rarely used IV – Lateral metatarsal vein
EX06H	Administer or inject drugs using appropriate sites: ferrets List appropriate drug administration sites in the ferret Subcutaneous—usually in loose skin between shoulders Intramuscularly in quadriceps or semimembranous muscles (like cat) Intraperitoneally Intravenously Cephalic Saphenous Jugular
EX07A	Knowledge of sites for catheter placement: birds List appropriate sites for catheter placement in pet birds
EX08	Understand tube feeding in birds Restrain bird correctly in upright position Select appropriate size metal feeding tube Lubricate tube Insert tube in corner of bill over the tongue and into esophagus Palpate tip of feeding needle in crop Administer fluids or food Withdraw needle gently Avoid regurgitation
EX11A	Recognize normal from abnormal behavior patterns in pet birds List general signs of illness in the pet bird Listlessness Ruffled feathers Lack of appetite Recall that birds will generally hide illness until they are very ill
EX11D	Recognize normal from abnormal behavior patterns in rabbits Describe the normal behavior of the rabbit Rarely bite Easily litter box trained Group housed rabbits may fight Will develop dominance hierarchies Males are territorial during breeding season Nocturnal May squeal loudly when frightened or injured Communicate through scent cues and touch and thump their hind limbs on the ground to warn of danger
EX11E	Recognize normal from abnormal behavior patterns in guinea pigs Describe the normal behavior of the guinea pig In the wild, live in open, grassy areas and use burrows deserted by others Are social animals living in groups Pets are docile, rarely bite or scratch Active most of the day When frightened, try vigorously to escape Creatures of habit—like routine Have many vocalizations and so vocalize in pain or distress
EX11H	Recognize normal from abnormal behavior patterns in ferrets Describe normal ferret behavior Friendly, inquisitive Can be housed singly or in groups Rarely bite unless frightened Females with litters often become aggressive Males housed together usually fight during the breeding season

EX12	Explain inadvisability of keeping wildlife as pets Recall reasons that wildlife should not be kept as pets Zoonotic disease transmission (e.g. rabies) Animals are undomesticated and may revert to instinctive behavior State/ local laws may prevent keeping wildlife as pets Escape potential of wildlife Potential to cause injury to humans or other animals
LA01A	Recognize and restrain mice, rats, guinea pigs and rabbits List the four laboratory animals used in this course
LA02B1	Understand reproduction: mice Recall the following information Puberty: 4-6 weeks Estrus cycle: 4-5 days, will come into estrus 3 days after introduction to male Gestation: 19-21 days Average litter size: 6-12
LA02B2	Understand reproduction: rats Recall the following information Puberty: 4-6 weeks Estrous cycle: 4-5 days, will come into estrus 3 days after introduction to the male Gestation: 20-22 days Average litter size: 7-14
LA02B3	Understand reproduction: rabbits Recall the following information Puberty: 22-52 weeks Estrus cycle: induced ovulators Gestation: 30-33 days Average litter size: 6-10
LA03A2	Basic care: mouse: nutritional needs/ diet Explain general principles of mouse nutrition Feed ad libitum Commercial rodent chow Contains 14% protein Place pellets in the V-shaped hopper on a wire cage lid Use the feed within 6 months of the milling date Powdered or meal diets Commonly fed if medication or special nutrients are to be mixed with the feed Seed-based diets Spiny mice may be maintained on seed-based diets Other mice tend to become obese and the diet is nutritionally deficient
LA03B2	Basic care: rat: nutritional needs/ diet Explain general principles of rat nutrition Feed ad libitum Commercial rodent chow Contains 20% to 25% protein and 4% fat Place pellets in the V-shaped hopper on a wire cage lid Use the feed within 6 months of the milling date
LA03C2	Basic care: rabbits: nutritional needs/ diet Explain general principles of rabbit nutrition Herbivorous and Coprophagic Commercial rabbit feed Contains 15% protein and 10% fiber Feeding ad libitum may result in obesity Dietary supplements Clean, raw carrots and vegetables fed a few times per week Higher fiber diets Given as needed to prevent hairballs and minimize obesity

LA08A	Have working knowledge of anesthetic and recovery procedures: mice Recognize forms of anesthesia commonly used in mice General anesthesia is used because mice respond poorly to local and regional anesthesia Recognize variables that may affect response to anesthesia such as age, strain, and health Understand anesthesia is given to effect and factors such as room temperature, the animal itself, and the anesthetic agent given can affect the anesthetic depth Understand how to monitor rodents using the toe pinch, respiratory rate, and movement of whiskers and ears in response to a puff of air Recognize common inhalant anesthetics used in mice such as methoxyflurane and isoflurane Recognize common injectable anesthetics used in mice such as barbiturates (pentobarbital and thiamylal) and dissociative agents (ketamine). Calculate anesthesia dosages for several injectable anesthetic protocols Explain recovery procedures such as monitoring the patient until fully awake and walking, keeping the animal warm during recovery, and recovering the patient in a quiet environment
LA08B	Have working knowledge of anesthetic and recovery procedures: rats Recognize forms of anesthesia commonly used in rats General anesthesia is used because rats respond poorly to local and regional anesthesia Recognize variables that may affect response to anesthesia such as age, strain, and health Understand anesthesia is given to effect and factors such as room temperature, the animal itself, and the anesthetic agent given can affect the anesthetic depth Understand how to monitor rodents using the toe pinch, respiratory rate, movement of whiskers and ears in response to a puff of air, and rectal temperature Recognize common inhalant anesthetics used in rats such as methoxyflurane and isoflurane Recognize common injectable anesthetics used in rats such as barbiturates (pentobarbital and thiamylal) and dissociative agents (ketamine). Calculate anesthesia dosages for several injectable anesthetic protocols Explain recovery procedures such as monitoring the patient until fully awake and walking, keeping the animal warm during recovery, and recovering the patient in a quiet environment
LA08C	Have working knowledge of anesthetic and recovery procedures: rabbits Recognize that rabbits present a greater anesthetic risk than other laboratory animals because they are easily stressed by anesthesia, are difficult to intubate, and have highly variable responses to anesthetic agents Recall that up to 50% of rabbits have a serum enzyme called atropine esterase which hydrolyzes atropine Recall that respiratory center of rabbits is very sensitive to anesthetics Recall that the high body fat reserves of rabbits complicates barbiturate anesthesia Recall that fasting is not necessary in rabbits because they cannot vomit Recall that fasting should be kept to a minimum because rabbits have a high metabolic rate and prolonged fasting can lead to hypoglycemia and alteration in acid-base balance Understand how to monitor rabbits anesthetic depth as well as their cardiovascular system and respiratory system under anesthesia Recognize common inhalant anesthetics used in rabbits such as isoflurane and sevoflurane Recognize common injectable anesthetics used in rabbits such as dissociative agents (ketamine and tiletamine), ketamine combined with alpha-2 adrenergic agonists, and propofol Calculate anesthesia dosages for several injectable anesthetic protocols Explain recovery procedures such as monitoring the patient until fully awake and walking, keeping the animal warm during recovery, and recovering the patient in a quiet environment

LA09A	Explain common disease signs in the mouse Recall the following signs of respiratory disease Weight loss Ruffled coat Hunched posture Anorexia Dyspnea Death Recall the following information regarding Tyzzer's disease Etiology: *Clostridium piliformis* Clinical signs: dehydration, weight loss, diarrhea, death Recall the following clinical signs of mites Alopecia Pruritus Dermatitis
LA09B	Explain common disease signs in the rat Recall the following signs of respiratory disease Weight loss Ruffled coat Hunched posture Anorexia Dyspnea Death Recall the following information regarding Murine mycoplasmosis Etiology: *Mycoplasma pneuemonia* Clinical signs: respiratory symptoms, head tilt, breeding problems Recall that mammary tumors are significant in the rat
LA09C	Explain common disease signs in the rabbit Recall the following information regarding Pasteurellosis Also known as snuffles Etiology: *Pasteurella multocida* Clinical signs: respiratory symptoms and nasal and ocular discharges Recall the following information regarding trichobezoars Also known as hairballs Clinical sign: anorexia Recall the following information regarding coccidiosis Clinical signs Diarrhea Abdominal swelling Anorexia and weight loss Icterus
LA11	Clean and medicate ears (rabbit) Describe how rabbit ears are cleaned and medicated Visualize tympanic membrane with otoscope and insure that it is intact Select appropriate cleaning solution Instill cleaning solution into ear Restrain animal so that it does not shake its head Fill ear canal until liquid is visualized at opening of ear canal Massage ear canal gently Massage ear contents in horizontal ear canal upward into vertical ear canal Clean outer ear with cotton ball Clean ear canal Remove as much material as possible with cotton balls Clean upper portion of vertical ear canal grooves with cotton tipped applicator Do not use cotton tipped applicators in horizontal ear canal If ear canal is not clean repeat above procedure Select appropriate medication for ear Instill medication properly Use correct amount Massage ear canal to distribute Label medication for use in treated patient only

LA13	Understand restraint of non-human primates Explain that safety of the handler is paramount Handlers must receive training Handlers must wear protective equipment including face shields, protective gloves and full-length arm covers Most NHP are four to 10 times stronger than humans of the same weight NHP can transmit serious and fatal diseases through bites and scratches Chemical restraint is usually needed for NHP Describe manual restraint methods for small NHP Collar and catch pole Squeeze cage Most NHP are easily stressed by restraint
LA14	Demonstrate knowledge of zoonotic diseases and modes of transmission Recall that laboratory animals species can carry disease with zoonotic potential. Some diseases include Rats: *Streptobacillus moniliformis*, known as rat bite fever *Corynebacterium sutschui*, pseudotuberculosis Hantavirus *Trichophyton mentagrophytes*, or ringworm Mice: Leptospirosis Rat bit fever Lymphocytic choriomeningitis; aerosol contamination and bite wounds Ringworm Guinea pigs: Rat bite fever Ringworm Hamsters: *Campylobacter jejuni* Lymphocytic choriomeningitis Ringworm Ferrets: Ringworm Rabies Rabbits: Tularemia: direct contact, bite wounds Ringworm Non-human primates: Shigella *Campylobacter jejuni* Tuberculosis inhalation Herpesvirus, esp Herpes virus B Poxviruses Hepatitis viruses, esp, Hepatitis A (fecal/oral) and B (aerosol, contact with body fluids) Measles Ringworm Entamoeba Giardia Lice, fleas, and mites

NU37	Clip teeth Explain tooth-height reduction of incisors Perform procedure under general anesthesia using a nose cone Place tongue depressor behind incisors to stabilize the jaw and protect the lips and tongue Use a cylindrical diamond bur on a high-speed handpiece (e.g. Dremel motor tool) Restore the normal occlusive plane If pulp exposure occurs, a partial pulpectomy and direct pulp capping are indicated List instruments which should not be used to clip teeth Nail trimmers Wire cutters Cutting disk on a straight handpiece on a Dremel tool

Course Competencies VT 246

Task ID Standard Assessment Criteria

EX01A2	Restrain birds Demonstrate correct restraint technique for small to medium sized psitticines Capture parrot correctly using a towel to envelop the bird Remove cage furniture Allow bird to face away from you and come to rest Quickly envelop bird in a towel Place thumb and middle finger on sides of the head close to bill Place index finger on top of the head Grasp firmly so that bird cannot bite Loosely grasp wings and body of the bird Do not constrict sternum May use towel or hand restraint Demonstrate correct restraint technique for small passerines Demonstrate correct restraint technique for pigeons and doves Demonstrate correct restraint technique for small to medium raptors
EX01E1	Recognize and understand guinea pigs Recognize breeds of guinea pigs English guinea pig Smooth, short, straight hair Peruvian guinea pig Fine, long hair coat Abyssinian variety Short, coarse hair coat that grows in whorls or rosettes Other breeds are described in the pet trade Silkies or shelties—Long-haired, hair does not cover the face or part down the back Teddy—Coarse, short, thick coat with kinked hair shafts without ridges or rosettes American crested—short hair with a single whorl of contrasting color on the forehead Self—smooth coat, all one color Agoutis—short, silky hair interspersed with a second color throughout the coat Himalayan—white, silky coat with black or chocolate ears, nose and feet Dutch—self or agouti coloring with a white saddle across the back and a white blaze running from the forehead down to the nose Roan—similar to agouti except the body is black with interspersed white hairs and solid black hair on the head and feet Dalmation—similar to Dalmation dog Tortoiseshell—bicolored or tricolored and have marking similar to a tortoiseshell cat

EX01E2	Restrain guinea pigs Pick up guinea pig and safely return to cage Place one hand in front of the guinea pig to stop its motion and the other around the thorax Gently scoop the animal up and move front hand to support hindquarters SQ and IM injection restraint Place guinea pig on soft towel and hold in position IP injection restraint Use one hand to support hindquarters Place other hand gently around shoulder area under front legs Turn animal on its back and point head toward floor
EX02F	Basic grooming (beak, wing, and nail clipping) Restrain bird correctly Trim nails Select appropriate size and type of nail trimmer Examine toe nail and see if the length is correct Restrain toe and clip nail to appropriately length Treat bleeding correctly Trim beak Restrain bird correctly Select appropriate instrument to trim beak For parrots Hold beak shut and groom top bill Lace top beak into bottom beak to groom bottom bill Trim wings Retrain bird correctly Identify dorsal covert feathers Identify primary flight feathers Select appropriate instrument to trim feathers Cut feather shaft for primary flight feathers at the level of the dorsal coverts Cut the appropriate number of flight feathers to prevent flight
EX03A	Demonstrate the ability to obtain objective data: birds Restrain bird correctly Perform physical examination Head, eyes, ears, feathers, air sacs Body, body condition score, feathers Palpate abdomen Examine cloaca Use mouth speculum and examine oral cavity
EX04A1	Perform injections using appropriate sites: subcutaneous: birds Recall that the skin of birds is relatively inelastic and only small amounts of SQ medications may be administered Select the appropriate gauge needle and syringe Locate the correct site for injection Inject 0.1 ml sterile saline Cap needle appropriately and dispose of needle and syringe
EX04B1	Perform injections using appropriate sites: intramuscular: birds List appropriate IM injection sites in pet birds Breast Thigh Select the appropriate gauge needle and syringe Draw up 0.1 ml sterile saline in a 1ml syringe with 25 g needle Restrain bird appropriately for species used Palpate breast muscle Direct needle into the breast muscle; aspirate; inject 0.1 ml sterile saline Withdraw needle and apply pressure to injection site to prevent hemorrhage Cap needle appropriately and dispose of needle and syringe

EX05A	Perform oral dosing: birds Prepare medication to be given in a syringe For tube feeding, warm food gently—avoid microwaving food Test food warmth by placing a small amount of food on your wrist Prepare oral speculum—for rubber feeding tubes Select feeding needle of the correct size Restrain the bird correctly Insert mouth speculum if rubber feeding tube is to be used For ball tip feeding needle Lubricate tip with water soluble lubricating jelly Insert feeding needle into commissure of beak and advance gently along the roof of the mouth allowing the needle to advance into the crop Palpate the needle end in the crop Administer medication Gently withdraw feeding needle
EX10E	Anesthetize avian and exotic animals: Guinea Pigs Obtain accurate weight for the patient Properly calculate the dosage of drug to be administered Properly administer the anesthetic agent Use proper monitoring techniques to assess the depth of anesthesia Rate and pattern of respiration Heart rate CNS depression Palpebral reflex Muscle tone Righting reflex Monitor patient until the instructor terminates the procedure
IM04E	Position animals for radiographic studies: birds Select proper film/screen combination to allow for improved detail Select the appropriate machine settings for the size of patient and film/screen combination used Use the smallest cassette that allows visulatization of the area to be studied Select appropriate patient retraint or sedation as needed Position patient correctly on the film using radiolucent tape Collimate the primary beam to the smallest size appropriate for study Position the radiographic label correctly Expose film Process film Evaluate radiographic for diagnostic quality
IM04F	Demonstrate an understanding of the modifications of diagnostic imaging techniques as they apply to mice, rats, guinea pigs, lizards, and amphibians Select proper film/screen combination to allow for improved detail Select the appropriate machine settings for the size of patient and film/screen combination used Use the smallest cassette that allows visulatization of the area to be studied Select appropriate patient retraint or sedation as needed Position patient correctly on the film using radiolucent tape Collimate the primary beam to the smallest size appropriate for study Position the radiographic label correctly Expose film Process film Evaluate radiographic for diagnostic quality

LA01B	Restrain mice Move mouse to a new cage Pick up by tail close to the body Move mouse quickly to a new cage Pick up a docile mouse Use first two fingers of one hand to stabilize the head or place fingers behind the front two legs Use the other hand to support the hind quarters SQ and IM injection restraint Remove mouse from cage and place on cage lid Grasp base of tail Grasp large fold of skin over head between mandibles Place tail between fingers of hand holding body IP injection restrain Remove mouse from cage and place on cage lid Grasp base of tail Grasp large fold of skin over head between mandibles Hold rear legs and tail with other hand Point head toward floor
LA01C	Restrain rats Move rat to a new cage Pick up by tail close to the body Move rat quickly to a new cage Pick up a docile rat Use first two fingers of one hand to stabilize the head or place fingers behind the front two legs Use the other hand to support the hind quarters SQ and IM injection restraint Remove rat from cage and place on cage lid Grasp base of tail Grasp large fold of skin over head between mandibles Place tail between fingers of hand holding body IP injection restrain Remove rat from cage and place on cage lid Grasp base of tail Grasp large fold of skin over head between mandibles Hold rear legs and tail with other hand Point head toward floor
LA01D	Restrain rabbits Remove rabbit from cage Grasp loose skin on back of neck Support hindquarters with other hand Tuck animal in the crook of the arm SQ and IM injection restraint Remove rabbit from cage and wrap in a soft towel Grasp fold of skin over the back as for a subQ injection Remove a limb from the towel as for an IM injection IV injection restrain Obtain cat bag Place animal in bag and remove from bag
LA02A1	Determine sex: mouse Restrain mouse appropriately Examine genital area Note larger genital papilla in males (neonate) Note greater distance between papilla and anus in males (neonate) Confirm findings with the instructor

LA02A2	Determine sex: rat Restrain rat appropriately Examine genital area Note larger genital papilla in males (neonate) Note greater distance between papilla and anus in males (neonate) Confirm findings with the instructor
LA02A3	Determine sex: rabbits Restrain rabbit appropriately Apply gentle digital pressure along genital opening Note slit like opening in females Note rounded urethral opening in males and gently extrude penis Confirm findings with the instructor
LA03A1	Basic care: mouse: handling Move a mouse safely to a new cage Pick up mouse by tail close to body Move mouse quickly to new cage
LA03A3	Basic care: mouse: watering Perform watering of mice Remove waterer from cage Clean with hot coapy water Rinse well Fill with cold water Check sipper tube to made sure water flows appropriately Return waterer to cage
LA03A4	Basic care: mouse: feeding Perform feeding of a mouse Place rodent feed on slots in cage lid Recall that rodents are fed ad lib
LA03A5	Basic care of mice: identification Describe methods used to permanently identify mice Microchip Tattoo Ear punch
LA03B1	Basic care: rat: handling Move a rat safely to a new cage Pick up rat by tail close to body Move rat quickly to new cage
LA03B3	Basic care: rat: watering Perform watering of rats Remove waterer from cage Clean with hot coapy water Rinse well Fill with cold water Check sipper tube to make sure water flows appropriately Return waterer to cage
LA03B4	Basic care: rat: feeding Perform feeding of a rat Place rodent feed on slots in cage lid Recall that rodents are fed ad lib
LA03B5	Basic care of rats: identification Describe methods used to permanently identify mice Microchip Tattoo Ear punch

LA03C1	Basic care: rabbits: handling Move a rabbit safely to a new cage Remove rabbit from cage Grasp loose skin on back of nect Support hindquarters with other hand Remove rabbit from cage with its head facing the door of the cage Tuck animal in crook of arm Return animal to a new cage Open cage door Hold rabbit by scruffing it with one hand and supporting its hindquarters with the other hand Return rabbit to cage with its head facing towards the cage door Close cage door
LA03C3	Basic care: rabbits: watering Perform watering of rabbits Remove waterer from cage Clean with hot coapy water Rinse well Fill with cold water Check sipper tube to made sure water flows appropriately Return waterer to cage
LA03C4	Basic care: rabbits: feeding Perform feeding of rabbits Remove J-shaped feed hopper from cage Clean with hot soapy water Rinse well Spray with chlorhexidine solution Rinse well Dry feed hopper Return hopper to cage and fasten to cage Fill with rabbit feed
LA03C5	Basic care of rabbits: identification Describe methods used to permanently identify mice Microchip Tattoo Ear punch
LA05A1	Perform methods of injections: mice: subQ Use appropriate and safe restraint technique Locate proper site on patient for SQ injection Choose proper needle size Use proper technique of swabbing the site Aspirate before injection Use correct injection technique
LA05A4	Perform methods of injections: mice:IP Use appropriate and safe restraint technique Locate proper site on patient for IP injection Choose proper needle size Use proper technique of swabbing site Aspirate before injection Use correct injection technique
LA05A4	Perform methods of injections: mice: IV Recall that the patient must be anesthetized for IV injections List venipuncture sites Lateral tail vein Describe the technique of IV drug administration in the mouse

LA05B1	Perform methods of injections: rat: subQ Use appropriate and safe restraint technique Locate proper site on patient for SQ injection Choose proper needle size Use proper technique of swabbing the site Aspirate before injection Use correct injection technique
LA05B4	Perform methods of injections: rat: IP Use appropriate and safe restraint technique Locate proper site on patient for IP injection Choose proper needle size Use proper technique of swabbing site Aspirate before injection Use correct injection technique
LA05B5	Perform methods of injections: rats: IV Use appropriate and safe restraint technique Obtain a 22 gauge or smaller needle and 1 cc syringe silled with 0.2 ml sterile saline Occlude the lateral tail vein by applying pressure at the base of the tail Clean the tail Please a syirnge with an attached small-gauge needle nearly parallel to the tail alongside the vein Hold the tail firmly and insert the needle into the lumen of the vein at the level of the middle of the tail with a smooth motion Withdraw the plunger of the syrgine barrel slightly to verify correct placement in the vein Inject the medication slowly and smoothly Withdraw the needle from the vein and apply pressure to the venipuncture sit to ensure hemostasis Properly dispose of needle and syringe
LA05C1	Perform methods of injections: rabbits: subQ Use appropriate and safe restraint technique Locate proper site on patient for SQ injection Choose proper needle size Use proper technique of swabbing the site Aspirate before injection Use correct injection technique
LA05C2	Perform methods of injections: rabbits: IM Use appropriate and safe restraint technique Locate proper site on patient for IM injection Choose proper needle size Use proper technique of swabbing site Aspirate before injection Use correct injection technique
LA05C5	Perform methods of injections: rabbits: IV Use appropriate and safe restraint technique Locate marginal ear vein or lateral saphenous vein (vein chosen will depend upon the breed of rabbit used in the lab) Choose proper needle size Use proper technique of swabbing site Aspirate before injection Use correct injection technique
LA06A1	Collect blood samples: mice: retro-orbital Apply a small amount of ophthalmic lubricant to the cornea Hold the upper and lower eyelids open with one hand Place a capillary tube into the orbit at the site slightly dorsal to the medial canthus Slide the capillary tube along the side and back of the globe Gently rotate and advance the tube through the conjunctival membrane Blood should flow into the tube If blood does not flow freely, slightly withdraw the capillary tube Collect blood sample Remove capillary tube

LA06B1	Collect blood samples: rats: retro-orbital Apply a small amount of ophthalmic lubricant to the cornea Hold the upper and lower eyelids open with one hand Place a capillary tube into the orbit at the site slightly dorsal to the medial canthus Slide the capillary tube along the side and back of the globe Gently rotate and advance the tube through the conjunctival membrane Blood should flow into the tube If blood does not flow freely, slightly withdraw the capillary tube Collect blood sample Remove capillary tube
LA06B2	Collect blood samples: rat Use appropriate and safe restraint for technique for sampling Choose proper needle size Blood collection: Lateral tail vein Firmly and safely restrain the rat Swab tail with alcohol and let dry Occlude the vein at the base of the tail Enter the vessel approximately one third to one half the distance of the tail from the body. Place fingers or block beneath tail for stabilization Insert needle and collect sample slowly Remove needle and apply pressure to the vein for hemostasis
LA06C1	Blood collection: rabbits Properly restrain rabbit Marginal ear vein technique: Warm the ear by holding the ear against your hand or by applying a warm, moist cloth Wipe the ear with an alcohol soaked cotton ball and let dry Apply a small amount of topical anesthetic to the venipuncture site Hold pressure at the base of the ear to act as a tourniquet Introduce a 25 gauge needle into the vessel Collect blood from the hub of the needle using a microhematocrit tube Remove needle and apply pressure to the venipuncture site with a dry cotton ball Lateral saphenous vein technique: Properly restrain rabbit Clip fur over the location of the lateral saphenous vein Wipe site with an alcohol soaked cotton ball and let dry Hold pressure at the proximal aspect of the limb to act as a tourniquet Introduce a 25 gauge needle with syringe attached into the vessel Collect blood Remove needle and apply pressure to the venipuncture site with a dry cotton ball
LA07A	Perform oral dosing: mouse Select a stainless steel feeding needle, 20 gauge and 1.5 inches in length with a ball tip end Use appropriate and safe restraint. Insure that the animal's head does not move Lubricate the needle Insert needle at the diastema and gently advance along upper palate into the esophagus Verify placement of needle Administer oral medication Do not rotate the needle Remove feeding needle gently
LA07B	Perform oral dosing: rat Select a stainless steel feeding needle, 16-18 gauge and 2-3 inches in length with a ball tip end Use appropriate and safe restraint Insure that the animal's head does not move Lubricate the needle Insert needle at the diastema and gently advance along upper palate into the esophagus Verify placement of needle Administer oral medication Do not rotate the needle Remove feeding needle gently

LA07C	Perform oral dosing: rabbit Use appropriate and safe restraint Measure distance between oral cavity and stomach of rabbit and mark tube correctly Select the correct size feeding tube Insert mouth speculum correctly Lubricate the feeding tube Insert tube at diastema and pass tube along roof of mouth into esophagus Administer saline through tube Kink end of tube and withdraw
LA10	Perform necropsy and collect specimens The veterinarian will properly euthanize the specimen Organize necessary equipment Scalpel Scissors Thumb forceps Gloves Slides Formalin and specimen containers Examine the exterior of the specimen Skin Eyes Mouth Dentition Vulva/ prepuce Incise the specimen along the midline and obtain culture specimens of the following Peritoneal fluid Identify organs Diaphragm Liver Stomach Pancreas Small intestine Kidneys Reproductive organs Urinary bladder Ureters Adrenal glands Extend the incision into the chest and identify organs Lungs Heart Esophagus Trachea Vena cava Obtain specimens and make impression smears of the following Liver Kidney Lung Obtain specimens and place in formalin Small intestine Liver Heart Properly dispose of carcass Properly dispose of all biohazard materials

LA12A	Anesthesia: mice Obtain accurate weight for the patient Properly calculate the dosage of drug to be administered Properly administer the anesthetic agent Use proper monitoring techniques to assess the depth of anesthesia Rate and pattern of respiration Heart rate CNS depression Palpebral reflex Muscle tone Righting reflex Monitor patient until the instructor terminates the procedure
LA12B	Anesthesia: rats Obtain accurate weight for the patient Properly calculate the dosage of drug to be administered Properly administer the anesthetic agent Use proper monitoring techniques to assess the depth of anesthesia Rate and pattern of respiration Heart rate CNS depression Palpebral reflex Muscle tone Righting reflex Monitor patient until the instructor terminates the procedure
LA12C	Anesthesia: rabbits Weigh animal accurately Calculate a dose of 25 mg/ kg of ketamine and 1 mg/ kg of xylazine Record controlled substances correctly Draw up both drugs into appropriate syringe Restrain animal correctly Administer xylazine and ketamine into gluteal muscles correctly Monitor anesthesia Recover patient correctly
LB21A	Perform prosection examination or dissection on non-preserved animal Select and arrange proper necropsy equipment Wear PPE Select and arrange proper sample containers, slides and other sampling equipment Arrange carcass on the necropsy table Assist veterinarian perform necropsy and collect samples Properly dispose of carcass Properly clean up area
LB21D	Handle disposal of dead animals Dispose of euthanized rodent in plastic bag Label bag with masking tape with the type of animal Place bag in freezer until the carcass taken to landfill and deeply buried
LB21E	Perform humane euthanasia procedures Perform euthanasia of laboratory animals Obtain appropriate amount of euthanasia solution from instructor Properly restraint laboratory animal as for an IP injection The veterinarian will administer euthanasia solution using correct technique for an IP injection Ascultate heart for lack of heart beat Palpate heart and insure absence of heart beat If a heart beat is ascultated or palpated, consult instructor and repeat IP injection with appropriate amount of euthanasia solution Auscultate heart to confirm absence of heartbeat; verify findings with the veterinarian Properly dispose of animal
NU09C4	Trim nails exotic/ special species Use appropriate and safe restraint technique Select appropriate nail trimming device Trim nails

NU21D	Administer parenteral injections: intraperitoneal Administer intraperitoneal injections in the rat Properly restrain the rat with its head directed downward at approximately a 30degree angle Clean injection site with an alcohol soaked cotton ball Allow alcohol on the site to dry Insert a 25 gauge needle into the lower left quadrant of the abdomen Attach syringe and aspirate If blood or fluid enters the syringe, withdraw Insert new needle in a different site and attach syringe and aspirate If the syringe remains empty following aspiration, the medication may be administered Withdraw needle

Method of Instruction

Lecture, discussion, online assignments, and laboratory.

Method of Evaluation

Online examinations, quizzes, homework, and assessments will be given for the students to demonstrate their proficiency over the course material. A comprehensive final examination will be given at the end of the semester.

Grades will be based on the total number of points the student earns divided by the total number of points possible and assigned using the following scale:

90 - 100% = A
80 - 89% = B
70 - 79% = C
< 70% = F

Assessment score ratings are as follows:

3: Excellent; able to work independently
2: Satisfactory; entry level skills
1: Unsatisfactory
0: Not applicable

Total assessment scores can be converted to a percentage score according to the following scale:

3.00	= 100	2.67	= 89	2.34	= 78
2.97	= 99	2.64	= 88	2.31	= 77
2.94	= 98	2.61	= 87	2.28	= 76
2.91	= 97	2.58	= 86	2.25	= 75
2.88	= 96	2.55	= 85	2.22	= 74
2.85	= 95	2.52	= 84	2.19	= 73
2.82	= 94	2.49	= 83	2.16	= 72
2.79	= 93	2.46	= 82	2.13	= 71
2.76	= 92	2.43	= 81	2.10	= 70
2.73	= 91	2.40	= 80	2.00	= 70
2.70	= 90	2.37	= 79		

Course Requirements

This course adheres to published Veterinary Technology Program Policies and Procedures; however, course requirements may be more stringent.

The online portion of this course adheres to the online and hybrid course policies as published in the Veterinary Technician Policies and Procedures. All Veterinary Technology Program assessments must be successfully completed by each student. Failure to successfully complete all assessment documents may result in a failing grade for the course in which that assessment is evaluated.

Because this course is a required course for graduation with a degree in Veterinary Technology, course requirements will be interpreted in light of the intent and objectives of the Veterinary Technology Program.

It is imperative that the students review Veterinary Technology Program Policies and Procedures and understand the safety guidelines for this course as well as instructor's expectations of the student's professional attitude and classroom conduct.

Veterinary Technology Program Policies and Procedures Section 9.02 states that "the Veterinary Technology student is expected to act in a professional manner in all classroom and activity situations. Students will act professionally in their dress, language and demeanor." Students who are disruptive to fellow classmates or the instructor by acting in an unprofessional manner may be required to leave the classroom.

Students are expected to conduct themselves in a professional manner in attitude, dress and behavior in all laboratory settings. This course requirement prepares students for actual workplace skills and attitudes. Since laboratories simulate workplace situations, students are expected to dress in a manner that will promote respect and confidence from others. Students are required to wear appropriate dress to lab. Appropriate dress may be professional, business-like dress or skirt and blouse or shirt; or jeans or slacks and a professional business-like shirt or blouse. A clean smock most be worn over street clothing. For all laboratory sections of VT 131, VT 237, VT 246 and VT 276, students may chose to wear a coordinated scrub top and scrub pants. Due to safety considerations, it is highly recommended that students wear enclosed, oxford style shoes with a non-skid sole. All clothing must be clean and in a state of good repair. The instructor reserves the right to decide when clothing is inappropriate and may ask students not to wear particular outfits to lab again, or the instructor may dismiss students to go home and change. Students are responsible for making up any missed laboratory work that is incurred by such a request to change clothing.

Students are required to attend all lecture and laboratory sessions as described in the Attendance Policy section of the syllabus.

If students check out equipment (such as CDs, Videotapes, Sutures boards, etc) to be used for instructional purposes in this class, they must fill out the appropriate Equipment Loan Agreement form. Failure to return the equipment in a timely manner will obligate the student to pay the price of the equipment value as stated on the Equipment Loan Agreement form. A hold will be placed on the student’s grades, transcripts and diploma until the college is reimbursed for the cost of the equipment or the equipment is returned.

Use of cell phones during class is prohibited (lecture/lab). Cell phones must be turned off prior to class and remain off during class time.

Students are required to purchase a minimum of two ultrafine Sharpie markers and have these markers in their possession during laboratories for the purpose of recording keeping on medication vials, labeling syringes, and other labeling which requires a permanent marking pen. Students are also required to purchase a watch, either digital or analog, capable of displaying seconds. The watch is to be worn in all

laboratory sessions. Students are also required to purchase a calculator and small pad of paper, and bring them to all laboratory sessions.

Assignment Policy

Written assignments or projects are expected to be done on or before the due date. Past due assignments will not be accepted.

Test Policy

Tests are scheduled to be given only during class time. If students are going to be absent, they must notify the instructor in advance and reschedule a time to make up the test. Tests must be rescheduled within a reasonable time frame (one to two days unless there are extreme extenuating circumstances). The test must be taken at the rescheduled time. After the instructor has graded and returned the test to the class, no make up is possible.

No quizzes will be made up unless students are absent due to illness or other excused absence (see definition of excused under Attendance Policy). Rescheduling for make-up quizzes is subject to the same guidelines as those for major tests. In the case of illness, it is the students' responsibility to contact the instructor to check and see if a quiz was given before the next class period begins. Pop quizzes will be given whenever the instructor wishes. If a quiz is given at the beginning of class and students are late, they will not be able to make up the quiz.

Attendance Policy

Each student is allowed one excused absence from lab. (Excused means a letter from nurse, a phone call prior to lab left on the instructor's voicemail to verify time, or an arrangement made with the instructor at least one week in advance.) No messages carried by peers will be accepted. Arrangements must be done by the student taking the excused absence. After one excused absence, the student will make up four hours of lab time for each additional two hours of excused absences.

An unexcused lab cut results in one week of duty (floors, ward care or wherever help is needed) that will be assigned by the instructor. In addition, for each two-hour lab that is unexcused, the student will make up four hours of lab time.

Attendance at the lecture portion of the classes is vital to the acquisition of workplace skills; therefore, attendance at lecture classes is required. Quizzes will be given at the beginning of the class period on a daily or random basis. No make up will be allowed for those students not in attendance. If a student is absent for more than four lecture periods per eight weeks, then the grade for the class will automatically be dropped one letter grade. Absences due to extenuating circumstances will be reviewed by the program staff and adjustments made where merited.

Because attendance in lab and lecture is vital to the acquisition of workplace competencies, students are expected to be on time for all scheduled lectures and laboratory classes. On time is defined as in the classroom and prepared to do coursework at the scheduled starting time. Any time other than on time is late. Students choosing to arrive late are responsible for checking with the instructor for announcements, assignments or notes they may have missed. In addition, late students may not be permitted to make up quizzes and/or will not be granted additional quiz or exam time beyond that scheduled in class.

Academic Integrity Policy

Colby Community College defines academic integrity as learning that leads to the development of knowledge and/or skills without any form of cheating or plagiarism. This learning requires respect for

Colby's institutional values of quality, service and integrity. All Colby Community College students, faculty, staff, and administrators are responsible for upholding academic integrity.

Cheating is giving, receiving, or using unauthorized help on individual and group academic exercises such as papers, quizzes, tests, and presentations through any delivery system in any learning environment. This includes impersonating another student, sharing content without authorization, fabricating data, and altering academic documents, including records, with or without the use of personal and college electronic devices.

Plagiarism is representing or turning in someone else's work without proper citation of the source. This includes unacknowledged paraphrase, quotation, or complete use of someone else's work in any form. It also includes citing work that is not used and taking credit for a group project without contributing to it.

The following procedure will be used for students who violate the policy:

- First Offense – Student will receive a zero for the assignment and the student will be reported to the Dean of Academic Affairs.
- Second Offense – The student will be reported to the Dean of Academic Affairs and removed from the class.
- Third Offense – The student will be reported to the Dean of Academic Affairs and dismissed from the college.

Any questions about this policy may be referred to the Dean of Academic Affairs.

Assessment

Colby Community College assesses student learning at several levels: general education, program, and course. The goal of these assessment activities is to improve student learning. As a student in this course, you will participate in various assessment activities. An example of your work, a paper, some test questions, a presentation, or other work may be selected for assessment. This process will not affect your grade, will not require you do additional work and your evaluation will be confidentially handled. Results of these activities will be used to improve teaching and learning at Colby Community College.

Syllabus Information Disclaimer

"I reserve the right to change any information contained in this document, when necessary, with adequate notice given to the student. Notice shall be given in the classroom during class. No other notice is required. It is the students' responsibility to stay current with any changes, modifications, adjustments or amendments that are made to this document."

Accommodations for Students with Disabilities

According to the Americans with Disabilities Act, it is the responsibility of each student with a disability to notify the college of his/her disability and to request accommodation. If a member of the class has a documented learning disability or a physical disability and needs special accommodations, he/she should contact Student Support Services, which is located in the Student Union.

Equipment

Equipment used in this course is located in the Veterinary Technology laboratory. A list of all equipment available and required is published and may be found in the laboratory.

Bibliography

Sirois, M. Laboratory Animal Medicine Principles & Procedures, St. Louis: Elsevier (Mosby), 2005. ISBN: 0-323-01944-7.

Recommended Resources

None

An Equal Employment/Educational Opportunity Institution

CCC does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs, activities, and employment. The following persons have been designated to handle inquiries regarding the non-discrimination policies:

Title IX Coordinator and Section 504 ADA: Dr. Keegan Nichols -Vice President of Student Affairs
Colby Community College, 1255 S. Range Ave., Colby, KS 67701
(785) 460-5490