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

**Department:** Veterinary Technology  

**Year:** Fall 2012  

**Credit Hours:** Lecture 2  
Lab 1  


**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  

**Instructors:** Dr. Beth Fenton; Dr. Jennifer Martin; Dr. Catherine McMulkin  

**Room #:** Lecture – FER 507  
Lab – AG 603  

**Office Hours:** TBA  

**Phone #:**  
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**Course Placement:** Sophomore Veterinary Technology  

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

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<thead>
<tr>
<th>Task ID</th>
<th>Standard Assessment Criteria</th>
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<tbody>
<tr>
<td>EX01A1</td>
<td>Recognize and understand birds</td>
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<td>Recognize various groups of psitticines</td>
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<td>Recognize selected species of passerines</td>
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| 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 |
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 green 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
Hatching 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...
<table>
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<tr>
<th>EX02A3</th>
<th>Understand nutritional needs and diets of amphibians</th>
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<td></td>
<td>Explain the general nutritional requirements of pet amphibians</td>
</tr>
<tr>
<td></td>
<td>Research the nutritional requirements of the specific species</td>
</tr>
<tr>
<td></td>
<td>Most amphibians are insectivores and require high protein diets</td>
</tr>
<tr>
<td></td>
<td>Wild caught amphibians must be habituated to dead food and may fail to convert</td>
</tr>
<tr>
<td></td>
<td>Prepared diets are available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02A5</th>
<th>Understand nutritional needs and diets of guinea pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Classify the nutritional requirements of the guinea pig</td>
</tr>
<tr>
<td></td>
<td>Discuss appropriate diets for the guinea pig</td>
</tr>
<tr>
<td></td>
<td>Recall that guinea pigs require Vitamin C in the diet</td>
</tr>
<tr>
<td></td>
<td>Recall that guinea pigs should be fed additional fiber and vegetables/fruit</td>
</tr>
<tr>
<td></td>
<td>Explain appropriate feeding methods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02A6</th>
<th>Understand nutritional needs and diets of hamsters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Classify the nutritional requirements of the hamster</td>
</tr>
<tr>
<td></td>
<td>Discuss appropriate diets for the hamster</td>
</tr>
<tr>
<td></td>
<td>Feed commercial rodent chow</td>
</tr>
<tr>
<td></td>
<td>Place pellets directly on the floor of the cage as they cannot eat through wire hopper feeders due to their broad muzzle</td>
</tr>
<tr>
<td></td>
<td>Recall that hamsters should be fed ad libitum</td>
</tr>
<tr>
<td></td>
<td>Daily feed consumption – 10-15 g</td>
</tr>
<tr>
<td></td>
<td>Explain appropriate feeding methods</td>
</tr>
<tr>
<td></td>
<td>Use the feed within 6 months of the milling date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02A7</th>
<th>Understand nutritional needs and diets of gerbils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Classify the nutritional requirements of the gerbil</td>
</tr>
<tr>
<td></td>
<td>Discuss appropriate diets for the gerbil</td>
</tr>
<tr>
<td></td>
<td>Feed commercial rodent chow</td>
</tr>
<tr>
<td></td>
<td>Place pellets directly on the floor of the cage</td>
</tr>
<tr>
<td></td>
<td>May supplement the diet with small amounts of sunflower seeds and clean, fresh vegetables</td>
</tr>
<tr>
<td></td>
<td>Recall that gerbils should be fed ad libitum</td>
</tr>
<tr>
<td></td>
<td>Daily feed consumption – 5-7 g</td>
</tr>
<tr>
<td></td>
<td>Explain appropriate feeding methods</td>
</tr>
<tr>
<td></td>
<td>Use the feed within 6 months of the milling date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02A8</th>
<th>Understand nutritional needs and diets of ferrets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explain nutritional needs of ferrets</td>
</tr>
<tr>
<td></td>
<td>Feed commercial ferret chow or cat chow that contains a protein content of at least 30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02B1</th>
<th>Understand watering issues of pet birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe correct placement of feed and water dishes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02B2</th>
<th>Understand watering issues of reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explain general water issues that apply to reptiles</td>
</tr>
<tr>
<td></td>
<td>Research needs of individual species being housed</td>
</tr>
<tr>
<td></td>
<td>Snakes</td>
</tr>
<tr>
<td></td>
<td>Generally require a bowl of fresh water large enough to soak in</td>
</tr>
<tr>
<td></td>
<td>Turtles</td>
</tr>
<tr>
<td></td>
<td>Require fresh water changed several times a week</td>
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</tbody>
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<table>
<thead>
<tr>
<th>EX02B3</th>
<th>Understand watering issues of amphibians</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Explain general water issues that apply to amphibians</td>
</tr>
<tr>
<td></td>
<td>Amphibians possess mucous glands that keep the skin moist to allow for respiration through the skin. This puts them at risk for desiccation</td>
</tr>
<tr>
<td></td>
<td>Use bottled spring water or conditioned water only</td>
</tr>
<tr>
<td></td>
<td>Water may be conditioned by allowing it to stand open in a container for 24 hours</td>
</tr>
<tr>
<td></td>
<td>Chlorine and other chemicals added to drinking water is toxic to amphibians</td>
</tr>
<tr>
<td></td>
<td>Water in tanks must be changed several times per week or a continuous water flow system used</td>
</tr>
<tr>
<td></td>
<td>Amphibians from ponds and slow moving water generally tolerate lower water quality better than stream species</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02B5</th>
<th>Understand watering issues of guinea pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe types of watering systems</td>
</tr>
<tr>
<td></td>
<td>Describe problems associated with different types of watering systems</td>
</tr>
<tr>
<td>EX02B6</td>
<td>Understand watering issues of hamsters</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Recall that the daily water consumption of the hamster is 9-12 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02B7</th>
<th>Understand watering issues of gerbils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recall that the daily water consumption of the gerbil is 4 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02B8</th>
<th>Understand watering issues of ferrets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe watering issues of ferrets</td>
</tr>
<tr>
<td></td>
<td>Use heavy water bowls that cannot tip over or</td>
</tr>
<tr>
<td></td>
<td>Water bottles hung inside cage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C1</th>
<th>Understand caging issues (temperature, humidity, light) of pet birds</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Describe appropriate size and type of caging for pet psitticines</td>
</tr>
<tr>
<td></td>
<td>Explain appropriate sanitation for caged birds</td>
</tr>
<tr>
<td></td>
<td>Discuss appropriate temperature, humidity and lighting for caged birds</td>
</tr>
<tr>
<td></td>
<td>Describe the necessary exercise requirements of psitticines</td>
</tr>
<tr>
<td></td>
<td>Discuss the types of environmental enrichment needed for pet psitticines</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C2</th>
<th>Understand caging issues (temperature, humidity, light) of reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explain general caging issues that apply to reptiles</td>
</tr>
<tr>
<td></td>
<td>Snakes</td>
</tr>
<tr>
<td></td>
<td>House in glass or clear plastic enclosures with adequate ventilation</td>
</tr>
<tr>
<td></td>
<td>Secure cage with appropriate fasteners as most snakes are escape artists</td>
</tr>
<tr>
<td></td>
<td>Maintain appropriate temperatures for species housed</td>
</tr>
<tr>
<td></td>
<td>Substrate</td>
</tr>
<tr>
<td></td>
<td>Newspaper or butcher’s paper is excellent</td>
</tr>
<tr>
<td></td>
<td>Indoor/ outdoor carpet</td>
</tr>
<tr>
<td></td>
<td>Avoid bark, gravel, sand</td>
</tr>
<tr>
<td></td>
<td>Branches and shelves provide vertical space but must be nonporous and easily cleaned</td>
</tr>
<tr>
<td></td>
<td>Most snakes require a warm environment with relatively high humidity</td>
</tr>
<tr>
<td></td>
<td>Use natural lighting or artificial ultraviolet light</td>
</tr>
<tr>
<td></td>
<td>Snakes shed skin regularly—difficulties arise when the temperature or humidity is too low</td>
</tr>
<tr>
<td></td>
<td>Turtles</td>
</tr>
<tr>
<td></td>
<td>May be housed in plastic or glass tanks with inclined floors</td>
</tr>
<tr>
<td></td>
<td>Heat lamps may be used to provide a range of ambient temperatures in an enclosure</td>
</tr>
<tr>
<td></td>
<td>Thoroughly clean tanks weekly with mild detergent—rinse well</td>
</tr>
<tr>
<td></td>
<td>Wear latex gloves when handling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C3</th>
<th>Understand caging issues (temperature, humidity, light) of amphibians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explain general caging issues that apply to amphibians</td>
</tr>
<tr>
<td></td>
<td>Because amphibians come from many different habitats, it is important to research each</td>
</tr>
<tr>
<td></td>
<td>particular species’ needs</td>
</tr>
<tr>
<td></td>
<td>Amphibians can generally be housed in plastic or glass containers</td>
</tr>
<tr>
<td></td>
<td>Containers must have smooth sides to avoid abrading and traumatizing the skin</td>
</tr>
<tr>
<td></td>
<td>Water quality is important</td>
</tr>
<tr>
<td></td>
<td>Day/ night cycles have an impact on metabolism</td>
</tr>
<tr>
<td></td>
<td>Time of day of feeding can affect how food is metabolized</td>
</tr>
<tr>
<td></td>
<td>Temperature requirements are relatively narrow for tropical species</td>
</tr>
<tr>
<td></td>
<td>Temperate species may hibernate over winter</td>
</tr>
<tr>
<td></td>
<td>Many species are susceptible to toxins; for example, nicotine on the hands of smokers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C5</th>
<th>Understand caging issues (temperature, humidity, light) of guinea pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe the proper caging of the guinea pig</td>
</tr>
<tr>
<td></td>
<td>Describe the husbandry of the guinea pig</td>
</tr>
<tr>
<td></td>
<td>Describe how to move a guinea pig safely to a new cage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C6</th>
<th>Understand caging issues (temperature, humidity, light) of hamsters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recall the following information:</td>
</tr>
<tr>
<td></td>
<td>Recommended environmental temp – 21-24 degrees C</td>
</tr>
<tr>
<td></td>
<td>Recommended environmental relative humidity – 40-60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02C7</th>
<th>Understand caging issues (temperature, humidity, light) of gerbils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recall the following information:</td>
</tr>
<tr>
<td></td>
<td>Recommended environmental temp – 18-22 degrees C</td>
</tr>
<tr>
<td></td>
<td>Recommended environmental relative humidity – 45-55%</td>
</tr>
<tr>
<td>EX02C8</td>
<td>Understand caging issues (temperature, humidity, light) of ferrets</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Describe appropriate husbandry of the ferret</td>
</tr>
<tr>
<td></td>
<td>Ferrets may be housed in cages used for dogs, cats or rabbits</td>
</tr>
<tr>
<td></td>
<td>Use solid bottom cages to prevent injury to small feet</td>
</tr>
<tr>
<td></td>
<td>Place nest boxes and soft towels in cage for burrowing and hiding places</td>
</tr>
<tr>
<td></td>
<td>Ferrets are more susceptible to heat and require temperatures lower than 80oF and adequate ventilation</td>
</tr>
</tbody>
</table>
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 contaminants
  - 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 dechlorinators or conditioners
- Ich medication
- Bucket and siphon hose
  - Use only for aquarium use
- Gravel cleaning tube
- Algae scraper

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 70°F
  - 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
<table>
<thead>
<tr>
<th>EX02E7</th>
<th>Understand reproduction issues of gerbils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall the following information:</td>
<td></td>
</tr>
<tr>
<td>Puberty - females – 9-12 weeks</td>
<td></td>
</tr>
<tr>
<td>Puberty – males – 9-18 weeks</td>
<td></td>
</tr>
<tr>
<td>Female hamsters are polyestrous and monogamous pairs can be left together for life</td>
<td></td>
</tr>
<tr>
<td>4-7 day estrus cycle</td>
<td></td>
</tr>
<tr>
<td>Spontaneous ovulators</td>
<td></td>
</tr>
<tr>
<td>25 day gestation period</td>
<td></td>
</tr>
<tr>
<td>Females bred during the postpartum period often have delayed implantation and gestation periods in excess of 3 weeks</td>
<td></td>
</tr>
<tr>
<td>Gestation 23-26 days</td>
<td></td>
</tr>
<tr>
<td>Litter sizes – 3-8</td>
<td></td>
</tr>
<tr>
<td>Neonatal gerbils develop more slowly than mice</td>
<td></td>
</tr>
<tr>
<td>Weaning –21-28 days</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02E8</th>
<th>Understand reproduction issues of ferrets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain why female ferrets should be spayed if not intended for breeding</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>EX02G1</th>
<th>Understand appropriate transportation methods of pet birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe how to transport sick birds</td>
<td></td>
</tr>
<tr>
<td>Describe appropriate transportation methods for injured raptors</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EX02G2</th>
<th>Understand appropriate transportation methods of reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain general principles of transporting reptiles</td>
<td></td>
</tr>
<tr>
<td>Use sturdy, enclosed, well ventilated containers</td>
<td></td>
</tr>
<tr>
<td>Snakes, lizards and turtles</td>
<td></td>
</tr>
<tr>
<td>Place in pillowcase or snake bag</td>
<td></td>
</tr>
<tr>
<td>Securely tie</td>
<td></td>
</tr>
<tr>
<td>Place in cooler or in Styrofoam box to provide insulation from temperature changes</td>
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</tbody>
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<table>
<thead>
<tr>
<th>EX02G3</th>
<th>Understand appropriate transportation methods of amphibians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain general principles of transporting amphibians</td>
<td></td>
</tr>
<tr>
<td>Place in small, plastic container filled with damp moss or moist paper towels</td>
<td></td>
</tr>
<tr>
<td>Avoid direct sunlight and extreme temperature changes</td>
<td></td>
</tr>
<tr>
<td>Provide adequate ventilation</td>
<td></td>
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<table>
<thead>
<tr>
<th>EX02G5</th>
<th>Understand appropriate transportation methods of guinea pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain general principles of transporting guinea pigs</td>
<td></td>
</tr>
<tr>
<td>USDA Animal Welfare Act regulations stipulate</td>
<td></td>
</tr>
<tr>
<td>Primary enclosure must be sturdy, free from internal protrusions with a large, accessible opening to remove guinea pigs in case of emergency</td>
<td></td>
</tr>
<tr>
<td>Primary enclosures of corrugated fiberboard, cardboard or plastic must be covered with a wire mesh to prevent escape</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Protrusion on the outside must ensure a 1.9 cm space from other cargo during transport.</td>
<td></td>
</tr>
<tr>
<td>There must be adequate handholds to allow the enclosure to be picked up without tipping</td>
<td></td>
</tr>
<tr>
<td>The enclosure must be large enough to allow the animal to turn around freely</td>
<td></td>
</tr>
<tr>
<td>No more than 15 animals may be placed in the same enclosure</td>
<td></td>
</tr>
<tr>
<td>The enclosure must have a solid bottom that is clean and sanitized with appropriate litter to absorb waste.</td>
<td></td>
</tr>
<tr>
<td>The container must be marked “Live Animals”</td>
<td></td>
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<tr>
<td>The carrier must observe the animals at least every 4 hours</td>
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</tbody>
</table>
| 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  

23
| 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 pneumonia*
- **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
<table>
<thead>
<tr>
<th>LA13</th>
<th>Understand restraint of non-human primates</th>
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<tbody>
<tr>
<td></td>
<td>Explain that safety of the handler is paramount</td>
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<td>Handlers must receive training</td>
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<td>Handlers must wear protective equipment including face shields, protective gloves and full-length arm covers</td>
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<td></td>
<td>Most NHP are four to 10 times stronger than humans of the same weight</td>
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<td>NHP can transmit serious and fatal diseases through bites and scratches</td>
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<td>Chemical restraint is usually needed for NHP</td>
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<td>Describe manual restraint methods for small NHP</td>
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<td>Collar and catch pole</td>
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<td>Squeeze cage</td>
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<td>Most NHP are easily stressed by restraint</td>
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<tr>
<th>LA14</th>
<th>Demonstrate knowledge of zoonotic diseases and modes of transmission</th>
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<tr>
<td></td>
<td>Recall that laboratory animals species can carry disease with zoonotic potential. Some diseases include</td>
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<tr>
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<td>Rats:</td>
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<td></td>
<td><em>Streptobacillus moniliformis</em>, known as rat bite fever</td>
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<td><em>Corynebacterium suischui</em>, pseudotuberculosis</td>
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<td>Hantavirus</td>
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<td><em>Trichophyton mentagrophytes</em>, or ringworm</td>
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<td>Mice:</td>
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<td>Leptospirosis</td>
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<td>Rat bit fever</td>
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<td>Lymphocytic choriomeningitis; aerosol contamination and bite wounds</td>
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<td></td>
<td>Ringworm</td>
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<td>Guinea pigs:</td>
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<td>Rat bite fever</td>
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<td></td>
<td>Ringworm</td>
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<td>Hamsters:</td>
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<td></td>
<td><em>Campylobacter jejuni</em></td>
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<td></td>
<td>Lymphocytic choriomeningitis</td>
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<td></td>
<td>Ringworm</td>
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<td>Ferrets:</td>
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<tr>
<td></td>
<td>Ringworm</td>
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<tr>
<td></td>
<td>Rabies</td>
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<td>Rabbits:</td>
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<td>Tularemia: direct contact, bite wounds</td>
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<td></td>
<td>Ringworm</td>
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<td></td>
<td>Non-human primates:</td>
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<td>Shigella</td>
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<td></td>
<td><em>Campylobacter jejuni</em></td>
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<td></td>
<td>Tuberculosis inhalation</td>
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<td></td>
<td>Herpesvirus, esp Herpes virus B</td>
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<td>Poxviruses</td>
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<td></td>
<td>Hepatitis viruses, esp, Hepatitis A (fecal/oral) and B (aerosol, contact with body fluids)</td>
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<td>Measles</td>
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<td>Ringworm</td>
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<td>Entamoeba</td>
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<td>Giardia</td>
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<td>Lice, fleas, and mites</td>
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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
  - Silks 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 |
<table>
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<tr>
<th>Code</th>
<th>Task Description</th>
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</thead>
<tbody>
<tr>
<td>EX05A</td>
<td><strong>Perform oral dosing: birds</strong>&lt;br&gt;Prepare medication to be given in a syringe&lt;br&gt;For tube feeding, warm food gently—avoid microwaving food&lt;br&gt;Test food warmth by placing a small amount of food on your wrist&lt;br&gt;Prepare oral speculum—for rubber feeding tubes&lt;br&gt;Select feeding needle of the correct size&lt;br&gt;Restrain the bird correctly&lt;br&gt;Insert mouth speculum if rubber feeding tube is to be used&lt;br&gt;For ball tip feeding needle&lt;br&gt;  - Lubricate tip with water soluble lubricating jelly&lt;br&gt;  - Insert feeding needle into commissure of beak and advance gently along the roof of the mouth allowing the needle to advance into the crop&lt;br&gt;Palpate the needle end in the crop&lt;br&gt;Administer medication&lt;br&gt;Gently withdraw feeding needle</td>
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<tr>
<td>EX10E</td>
<td><strong>Anesthetize avian and exotic animals: Guinea Pigs</strong>&lt;br&gt;Obtain accurate weight for the patient&lt;br&gt;Properly calculate the dosage of drug to be administered&lt;br&gt;Properly administer the anesthetic agent&lt;br&gt;Use proper monitoring techniques to assess the depth of anesthesia&lt;br&gt;  - Rate and pattern of respiration&lt;br&gt;  - Heart rate&lt;br&gt;  - CNS depression&lt;br&gt;  - Palpebral reflex&lt;br&gt;  - Muscle tone&lt;br&gt;  - Righting reflex&lt;br&gt;Monitor patient until the instructor terminates the procedure</td>
</tr>
<tr>
<td>IM04E</td>
<td><strong>Position animals for radiographic studies: birds</strong>&lt;br&gt;Select proper film/screen combination to allow for improved detail&lt;br&gt;Select the appropriate machine settings for the size of patient and film/screen combination used&lt;br&gt;Use the smallest cassette that allows visualization of the area to be studied&lt;br&gt;Select appropriate patient restraint or sedation as needed&lt;br&gt;Position patient correctly on the film using radiolucent tape&lt;br&gt;Collimate the primary beam to the smallest size appropriate for study&lt;br&gt;Position the radiographic label correctly&lt;br&gt;Expose film&lt;br&gt;Process film&lt;br&gt;Evaluate radiographic for diagnostic quality</td>
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<tr>
<td>IM04F</td>
<td><strong>Demonstrate an understanding of the modifications of diagnostic imaging techniques as they apply to mice, rats, guinea pigs, lizards, and amphibians</strong>&lt;br&gt;Select proper film/screen combination to allow for improved detail&lt;br&gt;Select the appropriate machine settings for the size of patient and film/screen combination used&lt;br&gt;Use the smallest cassette that allows visualization of the area to be studied&lt;br&gt;Select appropriate patient restraint or sedation as needed&lt;br&gt;Position patient correctly on the film using radiolucent tape&lt;br&gt;Collimate the primary beam to the smallest size appropriate for study&lt;br&gt;Position the radiographic label correctly&lt;br&gt;Expose film&lt;br&gt;Process film&lt;br&gt;Evaluate radiographic for diagnostic quality</td>
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<tr>
<td>LA01B</td>
<td>Restrain mice</td>
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<tr>
<td></td>
<td>Move mouse to a new cage</td>
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<td></td>
<td>Pick up by tail close to the body</td>
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<td></td>
<td>Move mouse quickly to a new cage</td>
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<td>Pick up a docile mouse</td>
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<td>Use first two fingers of one hand to stabilize the head or place fingers behind the front two legs</td>
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<td>Use the other hand to support the hind quarters</td>
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<td></td>
<td>SQ and IM injection restraint</td>
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<td>Remove mouse from cage and place on cage lid</td>
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<td></td>
<td>Grasp base of tail</td>
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<td></td>
<td>Grasp large fold of skin over head between mandibles</td>
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<td></td>
<td>Place tail between fingers of hand holding body</td>
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<td></td>
<td>IP injection restrain</td>
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<td>Remove mouse from cage and place on cage lid</td>
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<td></td>
<td>Grasp large fold of skin over head between mandibles</td>
</tr>
<tr>
<td></td>
<td>Hold rear legs and tail with other hand</td>
</tr>
<tr>
<td></td>
<td>Point head toward floor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA01C</th>
<th>Restrain rats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move rat to a new cage</td>
</tr>
<tr>
<td></td>
<td>Pick up by tail close to the body</td>
</tr>
<tr>
<td></td>
<td>Move rat quickly to a new cage</td>
</tr>
<tr>
<td></td>
<td>Pick up a docile rat</td>
</tr>
<tr>
<td></td>
<td>Use first two fingers of one hand to stabilize the head or place fingers behind the front two legs</td>
</tr>
<tr>
<td></td>
<td>Use the other hand to support the hind quarters</td>
</tr>
<tr>
<td></td>
<td>SQ and IM injection restraint</td>
</tr>
<tr>
<td></td>
<td>Remove rat from cage and place on cage lid</td>
</tr>
<tr>
<td></td>
<td>Grasp base of tail</td>
</tr>
<tr>
<td></td>
<td>Grasp large fold of skin over head between mandibles</td>
</tr>
<tr>
<td></td>
<td>Place tail between fingers of hand holding body</td>
</tr>
<tr>
<td></td>
<td>IP injection restrain</td>
</tr>
<tr>
<td></td>
<td>Remove rat from cage and place on cage lid</td>
</tr>
<tr>
<td></td>
<td>Grasp base of tail</td>
</tr>
<tr>
<td></td>
<td>Grasp large fold of skin over head between mandibles</td>
</tr>
<tr>
<td></td>
<td>Hold rear legs and tail with other hand</td>
</tr>
<tr>
<td></td>
<td>Point head toward floor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA01D</th>
<th>Restrain rabbits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remove rabbit from cage</td>
</tr>
<tr>
<td></td>
<td>Grasp loose skin on back of neck</td>
</tr>
<tr>
<td></td>
<td>Support hindquarters with other hand</td>
</tr>
<tr>
<td></td>
<td>Tuck animal in the crook of the arm</td>
</tr>
<tr>
<td></td>
<td>SQ and IM injection restraint</td>
</tr>
<tr>
<td></td>
<td>Remove rabbit from cage and wrap in a soft towel</td>
</tr>
<tr>
<td></td>
<td>Grasp fold of skin over the back as for a subQ injection</td>
</tr>
<tr>
<td></td>
<td>Remove a limb from the towel as for an IM injection</td>
</tr>
<tr>
<td></td>
<td>IV injection restrain</td>
</tr>
<tr>
<td></td>
<td>Obtain cat bag</td>
</tr>
<tr>
<td></td>
<td>Place animal in bag and remove from bag</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA02A1</th>
<th>Determine sex: mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Restrain mouse appropriately</td>
</tr>
<tr>
<td></td>
<td>Examine genital area</td>
</tr>
<tr>
<td></td>
<td>Note larger genital papilla in males (neonate)</td>
</tr>
<tr>
<td></td>
<td>Note greater distance between papilla and anus in males (neonate)</td>
</tr>
<tr>
<td></td>
<td>Confirm findings with the instructor</td>
</tr>
<tr>
<td>Code</td>
<td>Task</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 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 |
| LA03A2    | Basic care: mouse: watering  
Perform watering of mice  
Remove waterer from cage  
Clean with hot copay water  
Rinse well  
Fill with cold water  
Check sipper tube to make sure water flows appropriately  
Return waterer to cage |
| LA03A3    | Basic care: mouse: feeding  
Perform feeding of a mouse  
Place rodent feed on slots in cage lid  
Recall that rodents are fed ad lib |
| LA03A4    | Basic care of mice: identification  
Describe methods used to permanently identify mice  
Microchip  
Tattoo  
Ear punch |
| LA03A5    | 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 |
| LA03B1    | Basic care of rats: 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 |
| LA03B2    | Basic care of rats: feeding  
Perform feeding of a rat  
Place rodent feed on slots in cage lid  
Recall that rodents are fed ad lib |
| LA03B3    | Basic care of rats: identification  
Describe methods used to permanently identify mice  
Microchip  
Tattoo  
Ear punch |
<table>
<thead>
<tr>
<th>LA03C1</th>
<th>Basic care: rabbits: handling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move a rabbit safely to a new cage</td>
</tr>
<tr>
<td></td>
<td>Remove rabbit from cage</td>
</tr>
<tr>
<td></td>
<td>Grasp loose skin on back of neck</td>
</tr>
<tr>
<td></td>
<td>Support hindquarters with other hand</td>
</tr>
<tr>
<td></td>
<td>Remove rabbit from cage with its head facing the door of the cage</td>
</tr>
<tr>
<td></td>
<td>Tuck animal in crook of arm</td>
</tr>
<tr>
<td></td>
<td>Return animal to a new cage</td>
</tr>
<tr>
<td></td>
<td>Open cage door</td>
</tr>
<tr>
<td></td>
<td>Hold rabbit by scruffing it with one hand and supporting its hindquarters with the other hand</td>
</tr>
<tr>
<td></td>
<td>Return rabbit to cage with its head facing towards the cage door</td>
</tr>
<tr>
<td></td>
<td>Close cage door</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA03C3</th>
<th>Basic care: rabbits: watering</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perform watering of rabbits</td>
</tr>
<tr>
<td></td>
<td>Remove waterer from cage</td>
</tr>
<tr>
<td></td>
<td>Clean with hot soapy water</td>
</tr>
<tr>
<td></td>
<td>Rinse well</td>
</tr>
<tr>
<td></td>
<td>Fill with cold water</td>
</tr>
<tr>
<td></td>
<td>Check sipper tube to make sure water flows appropriately</td>
</tr>
<tr>
<td></td>
<td>Return waterer to cage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA03C4</th>
<th>Basic care: rabbits: feeding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perform feeding of rabbits</td>
</tr>
<tr>
<td></td>
<td>Remove J-shaped feed hopper from cage</td>
</tr>
<tr>
<td></td>
<td>Clean with hot soapy water</td>
</tr>
<tr>
<td></td>
<td>Rinse well</td>
</tr>
<tr>
<td></td>
<td>Spray with chlorhexidine solution</td>
</tr>
<tr>
<td></td>
<td>Rinse well</td>
</tr>
<tr>
<td></td>
<td>Dry feed hopper</td>
</tr>
<tr>
<td></td>
<td>Return hopper to cage and fasten to cage</td>
</tr>
<tr>
<td></td>
<td>Fill with rabbit feed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA03C5</th>
<th>Basic care of rabbits: identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe methods used to permanently identify mice</td>
</tr>
<tr>
<td></td>
<td>Microchip</td>
</tr>
<tr>
<td></td>
<td>Tattoo</td>
</tr>
<tr>
<td></td>
<td>Ear punch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA05A1</th>
<th>Perform methods of injections: mice: subQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use appropriate and safe restraint technique</td>
</tr>
<tr>
<td></td>
<td>Locate proper site on patient for SQ injection</td>
</tr>
<tr>
<td></td>
<td>Choose proper needle size</td>
</tr>
<tr>
<td></td>
<td>Use proper technique of swabbing the site</td>
</tr>
<tr>
<td></td>
<td>Aspirate before injection</td>
</tr>
<tr>
<td></td>
<td>Use correct injection technique</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA05A4</th>
<th>Perform methods of injections: mice: IP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use appropriate and safe restraint technique</td>
</tr>
<tr>
<td></td>
<td>Locate proper site on patient for IP injection</td>
</tr>
<tr>
<td></td>
<td>Choose proper needle size</td>
</tr>
<tr>
<td></td>
<td>Use proper technique of swabbing site</td>
</tr>
<tr>
<td></td>
<td>Aspirate before injection</td>
</tr>
<tr>
<td></td>
<td>Use correct injection technique</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA05A4</th>
<th>Perform methods of injections: mice: IV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recall that the patient must be anesthetized for IV injections</td>
</tr>
<tr>
<td></td>
<td>List venipuncture sites</td>
</tr>
<tr>
<td></td>
<td>Lateral tail vein</td>
</tr>
<tr>
<td></td>
<td>Describe the technique of IV drug administration in the mouse</td>
</tr>
</tbody>
</table>
| 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 syringe 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 syringe 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 site 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 |
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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 restrain laboratory animal as for an IP injection  
  - The veterinarian will administer euthanasia solution using correct technique for an IP injection  
  - Auscultate heart for lack of heart beat  
  - Palpate heart and insure absence of heart beat  
  - If a heart beat is auscultated 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 |
Administer parenteral injections: intraperitoneal
Administer intraperitoneal injections in the rat
Properly restrain the rat with its head directed downward at approximately a 30 degree 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:

\[
\begin{align*}
90 - 100\% & = A \\
80 - 89\% & = B \\
70 - 79\% & = C \\
< 70\% & = F
\end{align*}
\]

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:

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

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 must 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**
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