

## Essential Skills List

- Regular font text denotes didactic (knowledge-based) skills.
- *Italicized* text denotes hands-on (psychomotor) skills. Students are expected to physically perform these skills and be **evaluated individually**.
- ***Bold and italicized text denotes hands-on (psychomotor) skills that must be evaluated using a live animal.***
- Skills indicated by the designation (*GROUP*) may be performed by a group of program students with a live animal. The appropriate size of the group will be determined by the skill being performed taking into account humane treatment of the subject animal. Each member of the group must play an active role in the completion of the task.
- Skills indicated by the designation (*FLEXIBLE GROUP*) may be performed by a group of program students. Students should play an active role in the completion of the task. The following modalities are allowed:
  - Demonstration by instructor using a live animal.
  - Demonstration by instructor using a model.
- Skills indicated by the designation (*MODEL*) are assessed for each **individual student** and may be performed on a model or cadaver rather than a live animal.

Ruminant skills can be performed on cattle or small ruminants except where specified. Equine skills can be performed on horse, pony, donkey or mule.

Instruction must be provided in all essential skills.

The term “demonstrate” along with a didactic (knowledge-based) skill means that the instructor is free to determine the best method(s) for the student to demonstrate mastery or understanding of that particular skill to the instructor. The term “demonstrate” is not synonymous with “hands-on”.

### 1. OFFICE AND HOSPITAL PROCEDURES, CLIENT RELATIONS AND COMMUNICATION

**Management: Participate in a facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations.**

- Schedule appointments, admit, discharge and triage according to client, patient and facility needs through phone and in-person contact
  - Recognize and respond to veterinary medical emergencies
- Create and maintain individual client records, vaccination certificates, and other appropriate forms:
  - develop computer skills
  - be able to utilize veterinary practice management software
  - be familiar with veterinary on-line services (e.g. laboratory submissions, client financing plans, continuing education, discussion groups)
- *Develop a financial estimate and obtain and document informed consent (simulated client acceptable)*
- Perform basic filing of medical records, radiographs, lab reports, etc.
- Create and maintain all appropriate facility records and logs in compliance with regulatory guidelines (e.g. diagnostic imaging, surgery, anesthesia, radiology, laboratory, controlled substance)
- Manage inventory control



- Recognize roles of appropriate regulatory agencies
- Maintain appropriate disposal protocols for hazardous materials
- Establish and maintain appropriate sanitation and infection control protocols for a veterinary facility, including patient and laboratory area
- Handle daily client-based financial transactions

**Communication: Communicate in a professional manner in all formats – written, oral, non-verbal and electronic.**

- Demonstrate an understanding of interpersonal skills and team dynamics
- Utilize appropriate interpersonal and public relations skills
- Demonstrate telephone etiquette (e.g. through role playing, educational resources etc.)
- Recognize the legality of the veterinary-client-patient
- Develop and provide client education in a clear and accurate manner at a level the client understands (i.e., oral and written form, including educational handouts)
- Apply crisis intervention/grief management skills with clients

**Laws and Ethics: Follow and uphold applicable laws and the veterinary technology profession's ethical codes to provide high quality care to patients.**

- Understand and observe legal boundaries of veterinary health care team members
- Interact professionally with clients and fellow staff members
- Demonstrate a commitment to high quality patient care
- Respect and protect the confidentiality of client and patient information
- Demonstrate cultural competence in interactions with clients, recognizing the potential for bias

## **2. PHARMACY and PHARMACOLOGY**

**Administration: safely and effectively administer prescribed drugs to patients.**

- Read and follow veterinarian's pharmacy orders
- Recognize groups of drugs, their mechanisms and clinically relevant side effects
- Recognize the safe and effective manner in which vaccines must be administered
- recognize and explain common side effects
- Accurately perform appropriate calculations; use weights and measures correctly
- Explain appropriate drug administration route methods, and when used
- Demonstrate the ability to monitor therapeutic response
- Demonstrate the ability to accurately record medical information
- Demonstrate understanding of controlled substance regulations
- Demonstrate compliance with all federal and provincial regulatory guidelines for drug purchase, storage, administration, withdrawal, dispensing, disposal and inventory control (e.g. biologics, therapeutic agents, pesticides, hazardous materials)

**Dispensing: Accurately dispense and explain prescribed drugs to clients.**

- Given a drug order, properly prepare medications for dispensing, including performing accurate calculations
- Demonstrate compliance with regulations governing prescription drugs versus over-the-counter drugs
- Demonstrate understanding of regulations governing maintenance of controlled substances log book
- *Explain medications to clients (simulated client acceptable), such as*





- *handling, storage, administration, side-effects, drug interactions, safety, reasons for use of drug)*
- *Respond to client questions*

### 3.NURSING

#### **Patient Assessment: Demonstrate and perform patient assessment techniques in a variety of animal species.**

- Recognize common domestic animal species and breeds
- Describe and use common animal identification methods
- Recognize and assess body language and behaviours (including pain assessment scales) for various animal species
- Demonstrate effective and appropriate humane restraint techniques to include efforts to reduce stress during handling for various animal species:
  - ***Properly restrain dogs and cats for procedures***
  - ***Encage and remove dogs and cats from cages***
  - ***Apply dog muzzle safely***
  - ***Apply Elizabethan collar***
  - ***Use restraint pole and other restraint aids (MODEL)***
  - ***Halter, tie and lead equid***
  - ***Restrain ruminant***
  - ***Restrain equid***
  - ***Apply mechanical twitch (equid) (FLEXIBLE GROUP)***
  - ***Apply bovine tail restraint***
  - ***Apply ruminant halter***
  - ***Safely operate cattle chute (GROUP)***
  - Restrain pocket pets and exotics
  - Restrain pigs
  - Load large animals
- ***Perform a physical examination and record physical findings in dog, cat, equine, and ruminant, including:***
  - ***Temperature (dog, cat, equid, ruminant)***
  - ***Pulse (dog, cat, equid, ruminant)***
  - ***Respiration (dog, cat, equid, ruminant)***
  - ***Auscultate heart/lungs (dog, cat)***
  - ***Auscultate heart, lungs and rumen in ruminant***
  - ***Auscultate heart, lungs and gut sounds in equine***
  - ***Assess hydration status***
  - ***Assess pain status using standardized/contemporary pain scale***
- ***Use low stress handling techniques in dogs***
- ***Use low stress handling techniques in cats***
- ***Use low stress handling techniques in ruminants***
- ***Use low stress handling techniques in equids***
- ***Perform ocular diagnostic tests (including tonometry, fluorescein staining and Schirmer tear test) (MODEL)***
- ***Properly collect diagnostic specimens for analysis (e.g. urine, blood, feces, specimens for cytology)***
  - ***Perform venipuncture:***
    - ***Dog – cephalic, saphenous, jugular***
    - ***Cat – cephalic, femoral, jugular***
    - ***Equid - Jugular***





- **Ruminant – jugular and/or cow coccygeal**
- Sublingual (dog)
- Ear (pig)
- Anterior vena cava (pig)
- Collect urine sample:
  - **Catheterize male dog (GROUP)**
  - **Collect voided urine sample (dog or cat)**
  - **Perform cystocentesis (dog or cat) (GROUP)**
  - Catheterize female dog
  - Catheterize female cat
  - Catheterize male cat
  - Catheterize large animal
- Prepare diagnostic specimens for shipment

### **Patient Care: Understand and demonstrate husbandry, nutrition, therapeutic and dentistry techniques appropriate to various animal species.**

#### **Husbandry**

- Grooming:
  - **Trim nails (dog, cat)**
  - **Apply equid tail and leg wraps**
  - **Express anal sacs (canine)**
  - **Clean and medicate ears (dog, cat)**
  - Demonstrate understanding of therapeutic bathing, basic grooming and dipping of dogs or cats
  - Trim hooves (ruminant, equid)
  - Clean sheath (equid)
- **Perform microchip implantation, scanning and documentation (MODEL)**
- Demonstrate understanding of permanent identification
- Demonstrate understanding of breeding/reproduction techniques
- **Implement sanitation procedures for animal holding and housing areas (GROUP)**
- Demonstrate understanding of care of orphan animals
- Demonstrate understanding of nursing care of newborns

#### **Nutrition**

- Understand life stage energy and nutrient requirements of well animals (dog, cat, equid, cow)
- Identify common grains and forages
- Understand key nutritional factors in disease conditions
  - Be familiar with therapeutic foods
- Understand current developments in nutritional supplements and additives including benefits and potential toxicities
- Understand and identify substances that when ingested result in toxicity:
  - Identify common poisonous plants
  - Be familiar with substances (organic or inorganic) that cause toxicity)
- Develop and communicate hospital nutrition protocols

#### **Therapeutics**

- **Administer parenteral medications:**
  - **Dog: subcutaneous, intramuscular, intravenous**
  - **Cat: subcutaneous, intramuscular, intravenous**
  - **Equid: intramuscular, intravenous**
  - **Ruminant: subcutaneous, intravenous**





- Intradermal
  - Intramammary (ruminant mastitis therapy)
- *Administer enteral medications:*
  - **Balling gun (ruminant) (GROUP)**
  - **Dose syringe (ruminant, equid)**
  - **Hand pilling (dog, cat)**
  - Dose syringe (pig)
  - Oral speculum and stomach tube (ruminant)
  - Nasogastric intubation
- **Administer topical medications (including otic and ophthalmic)**
- **Administer enema (Group)**
- *Gastric intubation (dog or cat) (FLEXIBLE GROUP)*
- Gastric lavage (dog)
- *Collect/evaluate skin scrapings (MODEL)*
- Fluid Therapy
  - **administer subcutaneous fluids**
  - **place intravenous catheters – cephalic (dog or cat), saphenous (dog), jugular**
  - maintain and care for catheters
  - determine/maintain fluid infusion rate
  - monitor patient hydration status
  - develop familiarity with fluid delivery systems
- Understand how to administer constant rate infusions (CRIs)
- *Apply and remove bandages and splints (MODEL)*
- Remove casts
- Develop understanding of wound management and abscess care
- Perform physical therapy:
  - hydrotherapy
  - post-operative
  - orthopedic
  - neurological
  - explain care of recumbent patient
- Perform critical care:
  - maintain chest, tracheostomy tubes
  - **crossmatch blood for transfusion (GROUP)**
  - blood typing
  - perform blood transfusions (autotransfusions may be considered)
- Apply established emergency protocols (simulation acceptable)
  - maintain emergency medical supplies/crash cart
  - *perform first aid and CPR*
  - *use resuscitation bag (ambu bag)*
  - *apply emergency splints and bandages*

#### Dentistry

- **Perform Comprehensive Oral Health Assessment and Treatment (COHAT) (scaling and polishing, manual and machine)**
- Understand client education regarding home care
- Float teeth (equid)
- Trim teeth (rabbits, rodents, pigs)





#### 4. ANESTHESIA

**Patient Management: Safely and effectively manage and maintain patients in all phases of anesthesia.**

- **Administer anesthetic-related drugs by**
  - **Injection**
  - **Endotracheal tube**
  - **Mask**
- **Perform endotracheal intubation in patients**
- **Use clinical signs and monitoring equipment to monitor patient status in all stages of anesthesia (e.g. esophageal stethoscope, blood pressure monitor, capnometer, electrocardiogram, pulse oximeter)**
- **Perform appropriate resuscitation procedures as needed (e.g. Calculate and administer anesthetic antagonists and emergency drugs as directed)**
- **Complete controlled substance log (does not need to be official controlled substance log; mock logs may be utilized)**
- **Record and maintain anesthesia records**
- **Administer local anesthetic techniques (MODEL) (examples: dog/cat dental blocks, bovine epidural, bovine line block)**
- **Administer analgesia by epidural injection (MODEL)**
- **Calculate dosages of anesthetic-related drugs**
- **Evaluate patient and implement pain management protocols as directed**
- **Recognize and respond appropriately to patients in compromised states**

**Equipment/Facility Management: Safely and effectively select, utilize and maintain anesthetic delivery and monitoring instruments and equipment**

- **Maintain and operate anesthetic delivery and monitoring equipment:**
  - **Pulse oximeter**
  - **Capnometer**
  - **Esophageal stethoscope**
  - **Electrocardiograph (e.g. recognize abnormal rhythms/audible sounds, properly apply leads)**
  - **Anesthetic machines, including rebreathing systems; non-rebreathing systems and masks**
  - **Endotracheal tubes**
  - **Resuscitation bag (intermittent positive pressure ventilation)**
  - **Scavenging system**
  - **Oxygen sources**
  - **Blood pressure monitoring devices**
  - **Laryngoscopes**
  - **Temperature monitoring device (e.g. thermometer etc.)**
  - **Ventilator**
  - **Defibrillator**

#### 5. Surgical Nursing

- **Knowledge of routine surgical procedures and related equipment, including surgeries in these categories:**
  - **Ovariohysterectomy (dog, cat)**
  - **Cesarean section – all common species**
  - **Orthopedic procedures**
  - **Orchiectomy – all common species**
  - **Dystocias – all common species**





- Dehorning (cattle, goats)
- Prolapsed organs – common types, species and incidence
- ***Students must have participated in surgeries in these categories:***
  - ***Ovariohysterectomy (dog, cat)***
  - ***Orchiectomy (dog, cat, other common species)***

**Patient Management: Understand and integrate all aspects of patient management for common surgical procedures in a variety of animal species.**

- Properly identify patients and surgical procedures
- Patient assessment:
  - Organize medical records/consent forms
  - Review pre-operative evaluation
  - Evaluate current patient status
  - Organize and implement anesthesia
- ***Palpate the urinary bladder and express it if needed***
- ***Prepare surgical site using aseptic techniques***
- ***Position patient for common procedures***
- ***Provide surgical assistance:***
  - ***Demonstrate proper operating room conduct and asepsis***
  - ***Provide aseptic surgical assistance with care of exposed tissues***
  - ***Aseptically handle and pass instruments and supplies***
  - ***Demonstrate ability to perform aseptic surgical scrub and drying of hands***
  - ***Demonstrate ability to don surgical cap and mask, and aseptically don gown and gloves***
  - Operate and maintain suction and cautery machines
  - Perform basic suturing techniques
- Coordinate pain management with the anesthesia/surgical team
- Provide post-operative care:
  - Pain management
  - Fluid therapy
  - Adequate nutrition
  - Wound management
  - Bandaging
  - Discharge instructions
  - *Suture removal (MODEL)*
  - *Staple removal (MODEL)*

**Procedural Management: Understand and provide the appropriate instruments, supplies and environment to maintain asepsis during surgical procedures.**

- *Prepare surgical instruments and supplies*
- *Prepare gowns, masks, gloves and drapes*
- *Operate and maintain autoclaves (GROUP)*
- *Sterilize instruments and supplies using appropriate methods*
- *Perform pre-surgical set-up*
- *Provide operating room sanitation and care*
- *Perform post-surgical clean-up (e.g. equipment, instruments, room, proper disposal of hazardous medical waste) (GROUP)*
- Identify and know proper use for instruments
- Identify common suture materials, types and sizes
- Maintain proper operating room conduct and asepsis





## 6. LABORATORY PROCEDURES

**Specimen Management: Demonstrate knowledge of proper handling, packaging and storage of specimens for laboratory analysis to ensure safety of patients, clients and staff.**

- *Select and maintain laboratory equipment*
- *Implement quality control measures (GROUP)*
- *Prepare, label, package and store specimens for laboratory analysis*
- *Understand how to ensure safety of patients, clients and staff in the collection and handling of samples*

**Specimen Analysis: Properly perform analysis of laboratory specimens.**

- *Perform urinalysis:*
  - *Determine physical properties (e.g. color, clarity, specific gravity)*
  - *Test chemical properties*
  - *Examine and identify sediment*
- *Perform CBC to include:*
  - *Hemoglobin*
  - *Packed cell volume*
  - *Total protein (refractometer)*
  - *White cell count (manual or automated)*
  - *Red cell count (manual or automated)*
- *Perform microscopic examination of blood films:*
  - *prepare blood film and stain using a variety of techniques*
  - *perform leukocyte differential, normal vs. abnormal*
  - *evaluate erythrocyte morphology, normal vs. abnormal*
  - *estimate platelet numbers*
  - *calculate absolute values*
  - *correct white blood cell counts for nucleated cells*
- *Calculate hematologic indices*
- *Coagulation tests – perform one of the following (GROUP):*
  - *Buccal mucosal bleeding time*
  - *activated clotting time (ACT)*
  - *prothrombin time (PT)*
  - *partial thromboplastin time (PTT)*
  - *fibrinogen assay*
- *Perform blood chemistry tests (BUN, glucose, common enzymes)*
- *Perform blood glucose test using a glucometer*
- *Perform serologic test (e.g. ELISA, slide/card agglutination, lateral flow tests)*
- *Identify blood parasites:*
  - *Dirofilaria sp/Acanthocheilonema (formerly Dipetalonema sp)*
  - *Other blood parasites of veterinary importance*





- Perform parasitological procedures for external parasites and identify:
  - Mites
  - Lice
  - Ticks
  - Fleas
  - Flies
- Perform diagnostic procedures for parasites:
  - *Antigen kit, direct, Knotts (GROUP)*
  - *Fecal flotation*
  - *Fecal sedimentation*
  - *Direct smear*
  - *Centrifugation with flotation*
  - Adhesive tape retrieval of pinworm ova
  - Fecal egg count using McMaster method
  - Flotation solution preparation
- Identify common parasitic forms, their ova and apply knowledge of common parasite life cycles:
  - Nematodes
  - Trematodes
  - Cestodes
  - Protozoa
- Perform coprologic tests
- Perform microbiologic procedures
  - *Perform staining procedures*
  - *Conduct mastitis testing (CMT, bacterial culture) (GROUP)*
  - Collect representative samples
  - Culture bacteria & perform sensitivity tests
  - Identify common animal pathogens using commercially available media and reagents
  - Perform common biochemical tests
  - Culture and identify common dermatophytes
- Perform cytologic evaluation:
  - ***Collect, prepare and evaluate ear cytology***
  - *Collect, prepare and evaluate canine vaginal smears (FLEXIBLE GROUP)*
  - Assist in collecting, preparing and evaluating transudate, exudate and cytologic specimens (joint, cerebrospinal, airway, body cavity)
  - Perform fine needle tissue aspirates and impression smear preparation (differentiate benign vs malignant)
  - Prepare and stain bone marrow specimens
  - Evaluate semen
  - Understand timing and types of pregnancy testing
  - Assist with artificial insemination
- Perform necropsy procedures:
  - *perform a postmortem examination or dissection on non-preserved animal [GROUP]*
  - *collect samples, store and ship according to laboratory protocols [GROUP]*
  - explain how to handle rabies suspects and samples safely
  - handle disposal of dead animals
  - perform humane euthanasia procedures





## 7. IMAGING

- *Implement and observe recommended radiation safety measures*
- ***Position live animals and produce diagnostic radiographic images (dogs, cats, equid)*** (birds)
- ***Position, for dental imaging, an intubated model, cadaver or live animal for one half mouth and intubated live animal at least one view (dog or cat)***
- *Appropriately label, file, and store images*
- *Demonstrate an understanding of completing a radiographic log for systems, reports, files, and records*
- ***Perform radiographic contrast studies – perform one of the following: [GROUP]***
  - ***GI Series***
  - ***Pneumocystogram***
  - ***Intravenous pyelogram***
  - ***Other***
- ***Perform, on a sedated canine, radiographic techniques utilized in screening for canine hip dysplasia [GROUP]***
- *Use and care of ultrasonography equipment (FLEXIBLE GROUP)*
- *Implement radiographic quality control measures*
- *Properly utilize radiographic technique charts*
- *Demonstrate an understanding of the modifications of diagnostic imaging techniques as they apply to mice or rats, guinea pigs, lizards and amphibians*
- *Demonstrate proper maintenance of radiographic equipment, including recognition of faulty equipment operation*
- *Use and care of endoscopic equipment*

## 8. LABORATORY ANIMAL PROCEDURES

- ***Recognize and restrain (mouse/rat, rabbit)***
- ***Determine sex*** and understand reproduction (*mouse/rat, rabbit*)
- Perform and/or supervise basic care procedures:
  - ***handling (mouse/rat, rabbit)***
  - ***provide food, water, and enrichment in a species-appropriate manner (mouse/rat, rabbit)***
  - trim nails
  - identification
  - nutritional needs/diet
- *Perform methods of injection:*
  - *subcutaneous (mouse/rat, rabbit) (FLEXIBLE GROUP)*
  - *intraperitoneal (mouse/rat) (FLEXIBLE GROUP)*
  - intramuscular (rabbit)
  - intradermal (rabbit)
  - intravenous
- Collect blood samples:
  - ***Intravenous (mice/rat, rabbit) (GROUP)***
- ***Perform oral dosing (mouse/rat) (GROUP)***
- Have working knowledge of anesthetic and recovery procedures
- Identify and describe clinical signs of common diseases
- Perform necropsy and collect specimens
- Clean and medicate ears (rabbit)
- Anesthetize mouse/rat, and rabbit





## 9. AVIAN, EXOTIC and SMALL MAMMAL PROCEDURES

- **Recognize, understand and perform restraint techniques of birds including low stress handling techniques** (reptiles, amphibians, ferrets)
- Understand unique husbandry issues for each species (birds, reptiles, amphibians, guinea pigs, hamsters, gerbils, and ferrets) and provide client education:
  - nutritional needs/diet
  - watering
  - caging (temperature, humidity, light)
  - aquarium care
  - understand reproduction
  - basic grooming (beak, wing, and nail clipping)
  - appropriate transportation methods
- **Demonstrate the ability to perform a physical exam and accurately record results: birds** (reptiles, amphibians, and ferrets)
- **Perform nail trim: bird GROUP** (exotic, small mammal)
- Perform injections using appropriate sites:
  - subcutaneous
  - intramuscular
  - intradermal
  - intraperitoneal
  - intravenous
- Administer drugs or medicaments using appropriate sites and routes
- Understand appropriate sites for intravenous catheter placement
- Understand tube feeding in birds
- Perform laboratory procedures
- Anesthetize birds and exotic animals
- Recognize normal and abnormal behavior patterns
- Explain inadvisability of keeping wildlife as pets
- Collect blood samples
- Identify husbandry issues
- Discern appropriate from inappropriate nutritional support
- Recognize normal from abnormal behavior patterns

