

Veterinary Technical Institute

Veterinary Technician Training Program Curriculum

The in-clinic Staff Training Program for Veterinary Technicians is broken down into the following units:

Unit 1 - Introduction to Small Animal Technology: This section provides an introduction to a career as a small animal technician. It includes the duties and responsibilities of a small animal technician, and career opportunities. The student should be able to understand:

- The various titles of members of the veterinary staff and the process of veterinary staff teamwork
- The benefits of professional instruction and training in small animal technology.
- The duties and responsibilities of a small animal technician.
- The small animal technician's role in client education.
- Personal management: professional appearance, personal attitude, and job stress.
- Specialization in small animal technology.
- The optional career opportunities available for a small animal technician.

Unit 2 - Handling and Restraint: Topics covered include animal behavior, indications for restraint, capture and restraint, and restraining aids. Proper handling techniques are discussed. The student should be familiar with:

- The different animal senses.
- Animal behavior (aggression, avoidance, and submission) and the fight-or-flight theory of animal behavior.
- Common problem behaviors and their correction.
- When and why restraint should be used on an animal, and the types of restraining devices and their application.
- How to capture and lift dogs; how to capture and carry cats.
- The various table restraint techniques, specifically for each method of venipuncture.

Unit 3 - Medical Records and the Examination: This section provides an introduction to the medical record, medical logs, and preventative care. Students are instructed on how to take a general history, obtain vital signs, and conduct a physical examination. The student should be able to understand:

- Medical record formats; what the acronym SOAP stands for and how it is used in medical records.
- When and how medical logs are used.
- Medical terminology, symbols, and acronyms, and abbreviations used in records.
- The general guidelines of preventative care.
- How to take an animal's previous medical history and how to interpret the owner's primary complaint.
- How to gather a general history to perform a system-by-system evaluation of an animal's body systems.
- How to obtain vital signs, and be familiar with the normal reference ranges.

Unit 4 – Nursing: This section discusses the general care of small animals, administering medications (oral and injectables), and specific ailments and conditions. The student should be able to understand:

- The basic necessities that should be provided to animals, pediatric and geriatric nursing, and the ethics of euthanasia.
- Proper grooming techniques: bathing, nail trimming, ear cleaning, and anal gland expression.
- How to instill medications in the eyes and ears; how to administer oral medications.
- How to properly use a syringe and administer vaccines and medications (SQ, IM, IV).
- How to do venipuncture by the following routes: cephalic, jugular, and saphenous veins; and collect a blood sample.
- How to perform a fine needle aspiration.
- How to collect urine samples by the following routes: voided, cystocentesis, and catheter.
- How to collect a fecal sample.
- How to place an intravenous catheter in the cephalic vein and maintain catheter placement.
- How to provide fluid therapy: determine fluid requirements, calculate the fluid rate, and administer fluids.
- Understand the use of blood transfusions and how to collect and administer a volume of blood for transfusion.
- How to provide basic life support and manage emergency situations.
- How to clean, prep, and medicate wounds and abscesses, and apply / remove bandages and wraps.
- The common household poisons and poisonous plants.

Unit 5 – Nutrition: This section provides a complete overview of nutritional principles, dietary analysis and evaluation, nutritional requirements (for the different life stages, obesity, and specific diseases), assisted feeding, and alimentation calculations. The student should be able to understand:

- Commercial pet food labeling and the guaranteed analysis of the food.
- The different non-energy and energy producing nutrients.
- How to determine and evaluate nutritional elements of a diet and the requirements for each of the life stages, obese animals, and specific disease conditions.
- Indications for, and methods of, assisted feeding; how to perform alimentation calculations.

Unit 6 – Radiology: Topics of this section include radiographic safety, principles, positioning, and processing. The student should be able to understand:

- Film labeling and storage.
- How x-rays are produced and the effects of scattered radiation.
- Radiographic technique and how to determine the proper settings on the x-ray machine.
- How to take diagnostic radiographs, and properly use stationary and portable x-ray machines.
- How to use hand and automatic film processors, and replace or replenish developer and fixer.
- The recommended safety measures of radiographic use and radiation protection.
- How to restrain and position animals for the different views.
- How to properly measure an animal for each view.
- How to perform contrast media studies.

Unit 7 – Dentistry: This section discusses dental anatomy, equipment use, and prophylaxis. The student is also instructed in proper dental cleaning techniques. The student should be able to understand:

- Canine and feline dental anatomy.
- Periodontal disease and other dental problems, including pedodontics and preventative care.
- How to properly use the dental equipment.
- How to perform a periodontal examination.
- The technician's role in dentistry: client education, technical support, dental cleaning.
- Oral surgical procedures.

Unit 8 - Anatomy and Physiology: This section provides an overview of canine and feline anatomy, physiology, and pathogenesis of disease. The student should be able to understand:

- The bones of the skeletal system and where they are located.
- The major veins and arteries.
- The different organ systems, their components, and various functions: optic, otic, integumentary, respiratory, cardiovascular, hepato-digestive, reproductive, and immune systems.
- The basics of breeding and gestation.

Unit 9 - Infectious Diseases: This is an in-depth section covering vaccination and vaccine protocol, and description, transmission, host predispositions, signs and effects, diagnosis, treatment, and prevention of viral diseases, bacterial diseases, and fungal and yeast infections. The student should be able to understand:

- The process of vaccination and immunity.
- The canine and feline vaccine protocols.
- The various canine and feline viral diseases.
- The rabies virus and its human health concerns.
- The various canine and feline bacterial diseases.
- The fungal and yeast infections common to small animals.
- Zoonoses and human concerns.

Unit 10 - Parasitic Diseases: This section discusses the common internal and external parasites that may affect dogs and cats, including their transmission, host predispositions, signs and effects, diagnosis, treatment, and prevention. The topics covered include rickettsial parasites, protozoal parasites, helminths, bloodsucking ectoparasites, mites, and tissue-feeding ectoparasites. The student should be able to understand:

- The common types of rickettsial, protozoal, and helminth parasites, and their life cycles.
- The transmission cycle of heartworms, and the heartworm treatment protocol.
- The life cycles of fleas and ticks, and methods to control them.
- The different type of mites and common tissue-feeding ectoparasites, and their methods of treatment.

Unit 11 - Laboratory Techniques: This section is an in-depth overview of laboratory principles and equipment, hematology, microbiology, blood chemistry, urinalysis, immunology and serology, and diagnosing internal and external parasites. The student should be able to understand:

- Common laboratory procedures performed in an in-house laboratory and principles of laboratory safety.
- The variables and variations that may affect the outcome of laboratory results (quality control).
- The principles of enzymology.
- The proper collection, specimen volume, and transport techniques for bacteriologic and histologic specimens.
- How to perform a urinalysis and be familiar with reference ranges.
- How to prepare blood smears and cytology samples, and identify blood cells under the microscope.
- Hematology: sample collection, CBC, cell counts, coagulation, blood chemistries, and serology.
- How to perform a fecal flotation or direct examination, and identify common internal parasites.
- How to test for and identify common blood parasites (i.e. heartworms).
- How to perform a skin scraping and microscopically identify the different types of external parasites.
- Enzyme tests and how to perform them (i.e. thyroid, adrenal gland, and pancreatic function tests).
- How to perform in-house immunology tests (i.e. to test for FeLV, parvovirus, and heartworms).

Unit 12 – Tumors: This section discusses neoplastic development, progression, and classification, diagnosing and treating cancer, predispositions to neoplasms, paraneoplastic syndromes, non-neoplastic tumors, and neoplastic tumors. The student should be able to understand:

- The key terms and definitions commonly used in the field of oncology.
- The different stages of neoplastic development (initiation and promotion, progression, and patterns of behavior).
- Neoplasm classification.
- The methods of diagnosing and treating cancer.
- Individual predispositions to cancer.
- What paraneoplastic syndromes are, and some of the tumors that can initiate them.
- The common types of non-neoplastic tumors.
- The common types of benign and malignant neoplastic tumors.

Unit 13 – Pharmacology: Topics covered in this section include pharmacy principles, antimicrobials, anti-inflammatories, antiparasitics, and drug protocols. The student should be able to understand:

- Pharmacy terminology.
- How to perform pharmacy math, use weights and measures correctly, and calculate drug dosages.
- How to read, fill, label, and package dispensed drugs correctly.
- General pharmacy principles.
- The different routes and methods of drug administration.
- What drugs are considered controlled substances, and how they should be inventoried and handled.
- The different classes, types, and functions of antimicrobial drugs used in small animal pharmacy.
- The principles of antiinflammatory action, and their classes, types, and functions.
- The different types of internal and external antiparasitics used in small animals, and their functions.
- The different drug protocols for diseases and problems of the gastrointestinal system, respiratory system, cardiovascular system, nervous system, and endocrine system.

Unit 14 - Systemic Problems and Diseases: This section provides a system-by-system review, including the optic, nasal, otic, and integumentary systems, and the gastrointestinal, cardiovascular, respiratory, urogenital, and endocrine systems. Specific problems and diseases of each system are discussed. The student should be able to understand:

- The major disorders of the eyes, nose, ears, and skin.
- The major disorders of the following systems: the gastrointestinal system: digestive system, hepatic system, and pancreas; the cardiovascular system and respiratory system; and the urogenital system and endocrine system.

Unit 15 - Surgery and Anesthesia: This section instructs in instrumentation, aseptic technique, surgical preparation, anesthesia (anesthetic induction, maintenance, recovery, and anesthetic emergencies), hemostasis, lavage, and common surgical techniques and risks. The anesthetic machine is also described in great detail. The student should be able to understand:

- The different types of surgical instruments and their uses.
- Aseptic techniques and their importance in surgery.
- How to prepare, sterilize, and store surgical packs, and maintain an autoclave.
- How to sanitize the surgery room and care for equipment.
- How to position the animal for common surgical procedures and prepare the surgical materials for surgery.
- How to prepare for surgery (scrubbing, gloving, gowning, and masking) and assist the veterinarian with suiting.
- The different types of anesthetic drugs used.
- How to induce anesthesia and maintain it throughout the surgery. This requires a solid understanding of the anesthetic machine as well.
- The equipment and procedures for monitoring animals under an anesthetic, how to handle anesthetic emergencies, and how to assist animals in anesthetic recovery.
- How to provide surgical assistance through hemostasis, lavage techniques, instrument handling, care of exposed tissues and organs, and maintenance of asepsis.
- Routine elective surgeries (i.e. ovariohysterectomy, castration, Caesarian section, tail docking, declawing, and orthopedic procedures); how they are prepared for, performed, and possible complications.
- Waste anesthetic disposal and knowledge of human toxicity.

Staff Training Program: Veterinary Technicians—Program Materials

The program materials include:

- The *Veterinary Technician Training Program* step-by-step guide
- The *Small Animal Technician* textbook, VTI, 2006
- The *Veterinary Technician Training Program* Evaluation Exams and Answer Discussions (1-15)
- The *Veterinary Technician Training Program* Skills Handbook