



# VETERINARY TECHNOLOGY (SYSTEMS) (VTS)

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## VTS 1301 MEDICAL TERMINOLOGY

**Description:** Medical Terminology introduces the student to basic words and word structure that are essential in reading and writing medical literature. This course is essential for anyone seeking a better understanding of veterinary medical and scientific terms.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

## VTS 1313 MATH FOR VET TECHS

**Description:** This course is specifically designed to prepare students for the mathematics used on a daily basis in veterinary nursing as well as on national certification board exams. It includes concepts needed for computations in chemistry and veterinary clinical practice classes. Major subject areas and exercises address conversions within a measurement system and between measurement systems. Computations taught in this course focus on single and multiple step dosage problems and the diluting of stock solutions to desired concentrations.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

## VTS 1403 ANATOMY AND PHYSIOLOGY

**Description:** Basic body systems are studied at the tissue, organ, and system levels. Comparison of various species of common domestic animals is stressed. Laboratory exercises include a study of the skeletal system and dissection of a typical mammal.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** VTE 2811

## VTS 1511 LARGE ANIMAL TECHNIQUES I

**Description:** A course that deals with animal handling, current issues facing the livestock industry, production trends, terminology, animal growth, structure and selection, breeds, and development.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

## VTS 1513 ANIMAL CARE

**Description:** This survey course introduces the student to canine and feline husbandry, behavior, species and breed identification, and the human-animal bond. Humane animal care and management is emphasized. The care, handling, nutritional needs basic nursing skills, normal values, and administration techniques, basic grooming and obtaining objective patient data. Effective and appropriate restraint techniques are stressed. Student must be able to lift and carry 50 lbs. to take this class. This is a lecture and lab class. A 70% or above in this class is required to take Nursing I.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

## VTS 1521 LARGE ANIMAL TECHNIQUES II

**Description:** Prerequisite: VTS 1511 Large Animal Techniques I and Rabies Vaccination Specific animal physiology of large and small farm animals is studied. The course includes an introduction to nursing procedures required in veterinary practice for farm animals. Safe and effective methods of controlling various kinds of animals are discussed and practiced in a combination lecture and hands-on laboratory format. Equine, bovine, caprine, poultry, and porcine are covered, as well as other species.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

## VTS 1542 FACILITY MANAGEMENT

**Description:** (Pre req: 20 hours of veterinary clinic observation and completing the NCTA Veterinary Technology Clinic Observation Hours Form) Students study the management of animal holding facilities and the implementation of accepted animal welfare practices. Each student will participate in weekly kennel rotations providing the opportunity to care for the wide variety of animals involved in the veterinary technology program. This includes weekend care.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded

## VTS 1604 INTRODUCTION TO LABORATORY SCIENCE

**Description:** A study of biological and chemical principles and how they pertain to living systems. Through the application of fundamental biology and chemistry, students will survey the biological world in association with production, companion animals and human health. Topics include parasitology, hematology, bacteriology, virology and an overview of laboratory procedures. The goal of this course is to provide students with an introduction to the world of microbes as a foundation for an integrated approach to understanding and managing for optimal, as well as economic, animal health decisions.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Grading Option:** Graded

## VTS 1713 PHARMACY-ANESTHESIA

**Description:** Pre req: A 70% (C) or higher in VTS 1313 Math for Vet Techs and Rabies Vaccination. This course includes the study of pharmacokinetics, pharmacodynamics, dosage calculations, and a survey of the common drug types used in veterinary practice. Adverse drug reactions are discussed.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 1822 RADIOLOGY I**

**Description:** (Pre req: 18 years of age and passing of 60% (D) in VTS 1403 Anatomy & Physiology, and Rabies Vaccination) The student is presented with an overview of radiation safety, the generation of x-rays, machine operation and maintenance, patient positioning, radio-graphic film exposure, film developing, CI imaging, care of darkroom equipment, evaluation of x-ray quality, and correction in techniques for producing an x-ray the veterinarian can use for diagnostic purposes. The laboratory portion is spent applying radiation safety principles and positioning of animals for radiography using various x-ray machines, film developing and computerized imaging storage techniques. A grade of 70% (C) or higher in Radiology I is required to take Radiology II. Students must be able to lift and carry 50 lbs. and to perform the practical skills to do well in this class. It is important to remember that the hands-on skills in this class must be performed at an adequate entry skill level to do well in the class or on the job.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded

**VTS 2241 CAREER STRATEGIES**

**Description:** Pre req: Rabies Vaccination This course will provide students the opportunity to develop their "intercultural knowledge and competence" and "information literacy" skills and abilities. It will include group activities to help formulate career goals, improve academic success skills, develop a resume and cover letter, select and prepare for an appropriate internship. The course provides preparation for future employment. Students will review OSHA standards and learn about types of performance reviews common in the work place. Goal setting skills will be sharpened by developing objectives and a way to accomplish them as well as a measure for recognizing success in each area chosen. Students will develop job seeking skills as they locate an internship site.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**VTS 2243 VETERINARY TECHNOLOGY INTERNSHIP**

**Description:** Pre req: Completion of or enrolled in VTS 2241 Career Strategies, a CGPA of 2.0 or higher, successful completion of 24 credits in the chosen VTS option, and Rabies Vaccination. The internship is for a period of 8 weeks. Internship may be done during school breaks that are of at least one week in length or upon completion of all course work. Internship locations and agreements must be approved. For the Veterinary Technician Option, internship must be done with a supervising veterinarian or veterinary technician designated by the veterinarian. Agreements may include more than one site. Official agreements are entered into between the student, the employer, and the college. Students identify learning objectives, design a methodology to accomplish them during the internship and must show substantial progress toward completion of these goals through weekly reports, pictures and evaluations. Students are encouraged to carry their own medical, disability, and liability insurance and receive pre-exposure Rabies vaccination.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Pass No Pass

**VTS 2331 CLINICAL PRACTICES**

**Description:** Pre req: Rabies vaccination or concurrent enrollment, VTS 2652 Parasitology, VTS 1822 Radiology I, and VTS 2583 Nursing I. This class provides practical experience and preparation for working in a veterinary clinic setting. The students will be working in the Dr. Walter Long Veterinary Technology Teaching Clinic where basic technician based services are offered to the clinic clientele consisting of NCTA student, faculty and staff owned animals. As a field experience, students work for a minimum of 64 hours during the semester.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**VTS 2533 LARGE ANIMAL TECHNIQUES III**

**Description:** Prerequisite: VTS 1521 Large Animal Techniques II with a grade of 70% (C) or above, and Rabies Vaccination. This course includes nursing procedures, radiology, and surgery for production animals and equine. Safe and effective methods of controlling various kinds of livestock are discussed and practiced in a combination of lecture and hands-on laboratory format. Equine, bovine, ovine, caprine, porcine and poultry as well as other species may be covered.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2551 LARGE ANIMAL CLINICAL ROTATION**

**Description:** Pre req: grade of 70% (C) or better in VTS 1511 Large Animal Techniques I. Students will have several extended days (32+ hours) of experiential learning opportunities with various large animal clinics/operations in the area, where they will assist in physical exams, vaccinations, pregnancy checks, necropsies, surgeries, and other large animal procedures (as available).

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**VTS 2563 FUR AND FEATHER**

**Description:** Pre-req; Rabies Vaccination This course is an introduction to the care of the smaller furred, feathered, and scaled animals that veterinary technicians may encounter in clinical practice. Species identification, housing requirements, dietary needs, reproduction, and potential health problems will be discussed. Emphasis will be placed on birds, rodents, small mammals, and reptiles housed at NCTA. This class includes a lecture and lab component.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2583 NURSING I**

**Description:** Pre req: A 70% (C) or higher in VTS 1313 Math for Vet Techs and VTS 1513 Animal Care, and Rabies Vaccination . Basic animal nursing skills that are vital to the veterinary technician career are introduced. A large variety of skills are studied and practiced. This class includes a lecture and lab component. This class must be passed with a 70% (C) or higher to take Nursing II.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2593 NURSING II**

**Description:** Pre req: VTS 1542 Facility Mgt. and VTS 2583 Nursing I, and Rabies Vaccination. This course is a continuation of Nursing I. Advanced animal nursing skills are studied and practiced. This class includes a lecture and laboratory component. This class is a pre req for VTS 1713 Pharmacy-Anesthesia.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2652 PARASITOLOGY**

**Description:** Pre req: VTS 1604 Intro to Laboratory Science with at least a 70% (C), and Rabies Vaccination. Students study parasitic life cycles and parasite identification methods for both internal and external parasites of domestic animals, lab animals and birds. This class includes the collection and preparation of samples and diagnostic tests commonly used by veterinary technicians in the field and those available through commercial laboratory analysis. A survey of current therapy and products available for use will be included in this course.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded

**VTS 2662 HEMATOLOGY**

**Prerequisites:** Parasitology with at least 70%

**Description:** Pre req: Rabies Vaccination Student will learn skills pertaining to the study of blood. Included in the class will be: principles of laboratory safety, proper operation and maintenance of clinical laboratory equipment (microscope, centrifuge, hemacytometer, refractometer, and hemoglobinometer) and preparation of microscopic slides (collection of samples, staining techniques, identification of blood elements, reporting of results, and identification of blood parasites). Correct techniques for performing total blood counts, hematocrits, differentials, reticulocyte counts, coagulation tests and hemoglobin determinations will also be included in this course.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded

**VTS 2672 CLINICAL PATHOLOGY**

**Prerequisites:** Hematology with at least a 70%

**Description:** Pre req: Rabies Vaccination Students will continue laboratory testing in the areas of hematology (including blood chemistries); parasitology (including skin scraping analysis); bacteriological culturing, isolation and identification; urinalysis and sample submission.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded

**VTS 2733 DISEASES OF VET MED**

**Description:** Pre req: VTS 1403 Anatomy and Physiology and VTS 1604 Intro to Laboratory Science and Rabies Vaccination. Students study the causes of animal diseases and the principles of preventive veterinary medicine pertaining to livestock, dogs, cats and laboratory animals. Study includes investigation of specific diseases and disease control measures including biosecurity as well as parasite management in animals. Important zoonoses are covered as well. The necropsy lab provides students the opportunity to learn proper necropsy technique, sample collection and submission for diagnostic tests and appropriate disposal procedures.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2823 RADIOLOGY II**

**Description:** Pre req: 60% (D) or higher grade in VTS 1822 Radiology I. This course is a continuation of Radiology I with emphasis placed on principles governing x-ray generation, establishment of technique charts, automatic film development, computerized imaging, exotic, equine, canine and feline radiographs and small animal contrast studies.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2824 DIAGNOSTIC IMAGING**

**Description:** (Pre req: 18 years of age and passed Anatomy with a 60% or above). The student is presented with an overview of radiation safety, the generation of x-rays, the principles governing x-ray generation, OFA, and other health standard radiographic evaluations, equine, dental radiographs, small animal contrast studies, machine operation and maintenance, patient positioning, radiographic film exposure, film developing, computerized imaging, digital imaging, care of darkroom equipment, evaluation of x-ray quality, and correction in techniques for producing an x-ray the veterinarian can use for diagnostic purposes. We will also cover the basics and equipment for ultrasound, endoscopy, and fluoroscopy. Students should be able to lift and carry 50 lbs to perform the practical skills to do well in this class. It is important to remember that the hands-on skills in this class must be performed at an adequate entry skill level to do well in the class or on the job.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Grading Option:** Graded

**VTS 2933 ANESTHESIOLOGY**

**Prerequisites:** A grade of 70% or currently enrolled in Radiology I, Nursing II, Pharmacology and Hematology

**Description:** Pre req: Rabies Vaccination Principles of small animal inhalation anesthesia, pre-anesthetics, induction and maintenance anesthesia are covered in this class. Pre-surgical patient evaluations, risk classifications, monitoring techniques, equipment, inhalation machines, systems and safety are all studied in both a lecture and lab format. A 70% or higher in Anesthesiology is a pre-requisite Surgery Prep.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**VTS 2951 PAIN MANAGEMENT**

**Description:** Pre req; Rabies Vaccination This short course will cover the physiology, assessment, and treatment of pain as well as the ethics and social issues concerning treatment of farm and lab animals for pain. We will cover the types of medications that can be used, as well as other modalities for treatment of pain. The ability to recognize pain in various species is an important first step in the treatment of pain, and veterinary technicians are a first line of care for a painful animal. The goal of this course is to prepare you to know how pain is transmitted in the body, how to assess pain in various species, and what modalities can be used to treat it.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**VTS 2954 SURGERY PREPARATION**

**Description:** Pre req: Assistant Option: 60% or higher in Pharmacology, Anesthesia, Nursing II, Radiology, Clinical Pathology, or concurrent enrollment. See instructor for required paperwork. Technician Option: 70% or higher in the above listed classes or concurrent enrollment. The student is introduced to the proper preparation of the surgical theater, instruments, equipment and the animal for aseptic surgery. Students perform all the supporting operating room tasks including pre-surgical screening, anesthesia, patient preparation, surgical assisting, suite set-up, pack preparation and recovery. Correct pre-operative and post-operative care of the patient is stressed. The lab is an integral portion of this course. Students must be able to lift and carry 50 lbs. and to perform the practical skills to do well in this class. It is important to remember that the hands-on skills in this class must be performed at an adequate entry skill level to do well in the class or on the job.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Grading Option:** Graded