

BEL-REA INSTITUTE'S CURRICULUM/COURSE DESCRIPTIONS

Bel-Rea's curriculum for the Associate of Applied Science degree in Veterinary Technology includes the following coursework (standard 24 month course plan; concurrent course requirements are available in the quarterly class registration packet):

FIRST QUARTER

Introduction to Veterinary Medical Chemistry - 6 Quarter Hours

Veterinary Medical Chemistry is an introduction to basic chemistry including inorganic, organic, and biochemistry. The course includes fundamentals of reactions, atomic structure, enzyme function and nutrient metabolism. Students are introduced to physiological principles that provide a background for courses to follow in the program. There is no prerequisite although a previous background in biology or chemistry is helpful.

Medical Terminology - 5 Quarter Hours

The primary objective of Medical Terminology is to provide students with knowledge of the basis and formation of medical terms, usage of medical terms and their application to the field of veterinary medicine. Students utilize and demonstrate this knowledge in their everyday conversations with fellow students, instructors and other medical personnel. There is no prerequisite.

Technical Writing - 4 Quarter Hours

Technical Writing is designed to help students organize their thoughts and verbalize them in a concise and clear manner. Students prepare a term paper with emphasis on medical research, appropriate documentation, correct grammar and unified presentation. There is no prerequisite.

Perspectives - 0 Quarter Hours

This is an introductory study skills course designed to aid students in making a successful transition to the college environment. It may highlight time/stress management, communication styles, conflict resolution skills, financial and other essential skills based on the needs and interests of the class members. There is no prerequisite.

SECOND QUARTER

Introduction to Veterinary Medical Mathematics - 5 Quarter Hours

This course is intended to familiarize students with the use of numbers and basic equations for the veterinary field. Problems and exercises in this course correlate with those often used by professional veterinary technicians in laboratory, pharmacy, and anesthesia settings. Students obtain a working knowledge of basic mathematical transactions as well as fractions, scientific notation and basic equation solving. There is no prerequisite.

Humanities - 4 Quarter Hours

Humanities entails the study of the arts versus sciences and, in doing so, provides the student with a chance for creative expression. Emphasis is placed on creative and thoughtful interpretation of the various topics covered. There is no prerequisite.

Clinical Office Management and Procedures - 3 Quarter Hours

This course introduces students to the activities of the reception area and front office of a veterinary facility. This course acquaints students with common business procedures that the veterinary technician may be responsible for, as well as fundamental record keeping procedures. Veterinary ethics are also discussed. This course includes a presentation on veterinary careers, job placement, and interviewing. Introduction to computer software programs is included in this course. There is no prerequisite. Taken concurrently with Medical Terminology, Chemistry, Technical Writing, Math, and/or Perspectives if any of those courses are not completed beforehand.

Veterinary Science I - 5 Quarter Hours

This course discusses the 'typical' behavioral characteristics of the various animal species with regard to humane restraint and handling. The various breeds and classifications of domestic animals are discussed. Students learn the principles of proper physical exam and history notation as well as the reference ranges for pulse, temperature, and respiration for the dog and cat. The course also covers principles of general animal care, dentistry, bandaging and pediatrics, euthanasia and client counseling. The more common veterinary instruments and equipment are introduced to the student. Accepted management practices of kennels and hospitals are discussed. Students feed and care for the school's dogs and cats. There is no prerequisite. Taken concurrently with Medical Terminology, Chemistry, Technical Writing, Math, and/or Perspectives if any of those courses are not completed beforehand.

CURRICULUM/COURSE DESCRIPTIONS - CONTINUED

THIRD QUARTER

Anatomy and Physiology I - 5 Quarter Hours

This course introduces students to the basic concepts of anatomy (study of form and structure) and physiology (study of function). These concepts are then used to study the gross anatomy, microscopic anatomy, and physiology of the four major tissue types: connective, epithelial, muscle, and nervous tissue. Prerequisite is Chemistry. Taken concurrently with Medical Terminology, Math, Technical Writing, Anatomy Lab, and/or Humanities if any of those courses are not completed beforehand.

Anatomy and Physiology Lab I - 1 Quarter Hour

A hands-on laboratory designed to complement Anatomy and Physiology I. This involves a comprehensive study of the muscular, skeletal, and internal organ systems. Prerequisite is Chemistry. Taken concurrently with Anatomy and Physiology I.

Laboratory Animal Medicine - 2 Quarter Hours

This course is designed to provide the student with a broad overview of Laboratory Animal Medicine and Technology. Emphasis is on the biology, care, utilization and diseases of laboratory mice, rats, rabbits, guinea pigs, hamsters, gerbils, and non-human primates. The student is expected to have some prior knowledge of the biology, care and diseases of the dog, cat, and farm animals. Emphasis is on the management and utilization of laboratory animals in a research environment. There is no prerequisite. Taken concurrently with Medical Terminology if that course is not completed beforehand.

Microbiology and Disease Processes - 6 Quarter Hours

This course offers the student comprehensive knowledge of the fundamentals of microbiology including bacteriology, virology and mycology. Topics include microscopy, microbial structure, classification and identification of microorganisms, disease transmission and pathogenesis, zoonosis, immunology and antibiotic susceptibility. The course includes introduction to principles and laboratory methods in microbiology. Prerequisite is Medical Terminology. Taken concurrently with Anatomy and Physiology I if that course is not completed beforehand.

FOURTH QUARTER

Principles of Sterile Techniques - 4 Quarter Hours

The Principles of Sterile Techniques course is designed to assist veterinary technician students in developing an understanding of the methods and mechanics of the process of sterilization. The purpose and importance of various techniques of sterilization and sterile techniques are related to the fundamental care, preparation, and processing of supplies and equipment used throughout the veterinary hospital. Prerequisite is Humanities. Taken concurrently with Medical Terminology and/or Anatomy and Physiology I if those courses are not completed beforehand.

Parasitology - 6 Quarter Hours

Parasitology acquaints students with the various animal external and internal parasites, their life cycles and methods of detection. Emphasis is placed upon recognition of ova and various techniques used to demonstrate parasitic ova and larvae. Prerequisites are Medical Terminology and Humanities. Taken concurrently with Anatomy and Physiology I if that course is not completed beforehand.

Anatomy and Physiology II - 5 Quarter Hours

This course includes the study of gross anatomy and physiology of the various organ systems including the circulatory, respiratory, digestive, nervous, endocrine, exocrine and urogenital systems. Gross, microscopic anatomy and physiology are covered for each organ system. Pathology of the nervous and cardiovascular systems are discussed as well. Prerequisites are Anatomy and Physiology I, Technical Writing, Math, Medical Terminology, and Humanities. Taken concurrently with Anatomy Lab if that course is not completed beforehand.

Veterinary Science II - 5 Quarter Hours

Topics to be covered in this course include administration of medications, nutrition, endocrinology, immunology and ophthalmology. Prerequisites are Anatomy and Physiology I and Humanities. Taken concurrently with Veterinary Science I if that course is not completed beforehand.

CURRICULUM/COURSE DESCRIPTIONS - CONTINUED

FIFTH QUARTER

Veterinary Science III - 4 Quarter Hours

Topics to be covered in this third veterinary science course include diseases of the urinary, reproductive, and gastrointestinal systems, as well as liver diseases and common infectious diseases of the dog and cat. Prerequisites are Veterinary Science II and Microbiology.

Hematology - 6 Quarter Hours

This course is designed to provide the student with a basic understanding of the anatomy, physiology and pathology of blood and blood-forming organs. Laboratory emphasis is placed on the most common techniques used in veterinary medicine to aid in diagnosis of physiology and pathology in common hematologic disorders. Laboratory work includes, but is not limited to, performing CBC (complete blood count), manual cell identification and automated techniques. Prerequisites are Anatomy and Physiology II, Microbiology, and Parasitology.

Pharmacology - 5 Quarter Hours

Pharmacology acquaints students with fundamental knowledge of the mechanism of action, dosage, routes of administration and the toxic effects of various groups of veterinary related drugs. Emphasis is placed on calculating drug dosages and volumes as well as methods for maintenance of drug inventories and controlled substance logs. Prerequisite is Anatomy and Physiology II.

SIXTH QUARTER

Large Animal Medicine - 5 Quarter Hours

General information regarding large animal diseases and herd health management is covered. Methods of restraining large animals for diagnostic and/or therapeutic procedures are emphasized in both lecture and lab. Off campus large animal facilities are utilized for hands-on learning including vaccine administration, restraint, venipuncture, deworming and routine care. Students also have an opportunity to improve their practical skills while caring for Bel-Rea's resident large animals. Prerequisite is Anatomy and Physiology II.

Avian/Reptile Medicine - 3 Quarter Hours

Students learn the basic skills of avian and reptile restraint, physical exams, nutrition, diseases and husbandry. The course includes hands-on avian and reptile restraint and care. Prerequisite is Anatomy and Physiology II.

Veterinary Science IV - 5 Quarter Hours

This course provides instruction in the clinical application of fluid therapy, nursing care of the critically ill patient, euthanasia and management of common poisonings. One section of the course is devoted to dentistry, and disorders of the cardiovascular, reproductive and central nervous systems. Students also assist at local animal shelters. Prerequisite is Pharmacology.

Radiology - 5 Quarter Hours

The objective of Radiology is to familiarize students with the digital and traditional X-ray machines, darkroom techniques and radiation safety. Areas of emphasis include technique failures, positioning and standard diagnostic procedures. Students are introduced to both experimental and clinical use of radiology facilities. Ultrasound technologies are discussed. Prerequisite is Anatomy and Physiology II. Taken concurrently with Veterinary Science III if that course is not completed beforehand.

CURRICULUM/COURSE DESCRIPTIONS - CONTINUED

SEVENTH QUARTER

Clinical Chemistry - 5 Quarter Hours

The objective of Clinical Chemistry is to familiarize students with that part of the laboratory devoted to the evaluation of urine, blood plasma/serum and other body fluids for normal and abnormal constituents. Students are exposed to the general indications for determining various chemistries as well as the fundamental understanding of elevated values in pathological specimens. Prerequisite is Hematology.

Veterinary Anesthesia - 5 Quarter Hours

Veterinary technicians are expected to act as anesthetists under the supervision of veterinarians. This course involves the study of pharmacology, application of anesthetic agents, the physiological effects and means of monitoring them, principles and administration of inhalant anesthetics, and a broad overview of anesthetic protocol and care. Lectures and laboratories are used to emphasize practical skills and introduce students to anesthesia equipment. Prerequisites are Pharmacology, Hematology, and Sterile Techniques. Taken concurrently with Veterinary Science IV, Clinical Chemistry, and/or Radiology if those courses are not completed beforehand. Must be taken concurrently with Pre-Clinical just before entering Internship.

Pre-Clinical - 4 Quarter Hours

The seventh quarter Pre-Clinical Rotation is designed to give students hands-on/practical experience prior to entering Internship. This class allows students to put their theoretical and academic knowledge to practical use. During the Pre-Clinical Rotation, students work with dogs and cats from a local shelter that require spaying and neutering. Students have the opportunity to perform physical examinations, draw blood, run lab work, perform scrub nurse/circulator duties, give injections, place intravenous catheters, administer and monitor anesthesia, and perform dental prophylaxis and radiographs. In addition, a Pre-Clinical Review Class is offered to give students extra review and hands-on practice in preparation for the Veterinary Technician National Exam (VTNE) required post-graduation for professional credentialing, their Pre-Clinical Clinical Proficiency Exam (CPE), and their Internship. Prerequisites are Pharmacology, Hematology, and Sterile Techniques. Taken concurrently with Veterinary Science IV, Clinical Chemistry, and/or Radiology if those courses are not completed beforehand. Must be taken concurrently with Anesthesia just before entering Internship.

EIGHTH QUARTER

Internship/Supervised Training - 12 Quarter Hours

The primary objective for Internship is to reinforce previous academic studies by working alongside a Certified, Licensed, or Registered Veterinary Technician (CVT, RVT, LVT) with actual cases in a clinical setting. This portion of the curriculum helps further develop self-confidence through hands-on practice and exposing students to the environment of the clinical practice.

Internships are offered every quarter and students spend 10 weeks, 40 hours per week, during their final quarter at one of over 200 approved sites. Students can obtain a list of current approved sites on www.belrea.edu/internships or by contacting the Internship Coordinator. The grading system for the Internship Quarter is pass/fail, not letter grades.

Students interview and apply for their Internships at any of Bel-Rea's approved small animal veterinary clinics or specialty veterinary centers in Colorado. A limited number of research, equine, or mixed animal practices in Colorado, and approved out-of-state sites are also a possibility. Some sites may require early application, previous experience, a 3.25 cumulative GPA, and/or approval from the Bel-Rea Internship Board. Out-of-state sites include university veterinary teaching hospitals and zoos around the country that work closely with Bel-Rea to ensure successful training and experience. Approved out-of-state sites do not include housing.

With support and guidance from Bel-Rea staff, students schedule and conduct internship interviews at approved sites during their 7th quarter. Placement is based on the successful completion of coursework, specific requirements, student choice and acceptance from the clinical site. This experience is unpaid. All internships are in compliance with AVMA requirements. Approved internships may include, but are not limited to, areas of treatment/ICU, emergency, surgery, radiology, anesthesia, laboratory and dentistry. Please contact the Internship Coordinator at Bel-Rea to discuss how to maximize your Internship and to plan ahead to reach your goals.

Upon successful completion of Internship, based on evaluations and personal progress throughout the quarter, students are awarded an Associate of Applied Science degree by Bel-Rea Institute of Animal Technology. All graduates are candidates to sit for the Veterinary Technician National Exam (VTNE) and to apply for credentialing as a veterinary technician with their state credentialing agency.