VETERINARY TECHNOLOGY

The Veterinary Technology Program at Mount Wachusett Community College provides students with the opportunity to earn an Associate of Science Degree in Veterinary Technology. Upon completion of the program, students are prepared to take the Veterinary Technician National Exam (VTNE), the first step towards state licensure or certification. During the course of study, students will develop skills and competencies to prepare for positions in a variety of veterinary science settings.

VETERINARY TECHNOLOGY (VTE) (SELECTIVE)

Veterinary technicians (veterinary nurses) perform a wide range of duties on a day-to-day basis. They provide essential nursing care to hospitalized patients by administering medications, placing IV catheters, performing diagnostic imaging and many other advanced skills. By employing observational skills and interpreting body language veterinary technicians are able to recognize subtle changes in patient status allowing the veterinarian to adjust treatment appropriately. Other tasks of the job include performing medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals (such as urinalysis and blood counts), cleaning and sterilizing instruments and materials, maintaining equipment and machines, preparing vaccines and sera for prevention of animal diseases, preparing tissue samples, and collecting blood samples. Veterinary technicians are often found assisting a veterinary surgeon during surgery, by running and monitoring anesthesia on the patient or scrubbing in to help the surgeon. MWCC's Veterinary Technology program will help students build their hands-on and critical thinking skills to pursue successful careers as veterinary technicians.

MWCC's Veterinary Technology Program was granted initial accreditation by the American Veterinary Medical Association (AVMA) Committee on Veterinary Education and Activities (CVTEA) effective September 13, 2019. Students who graduate from this program are eligible to take the Veterinary Technician National Exam (VTNE). Upon obtaining a successful passing score on the VTNE, an individual can apply through their state’s Veterinary Technician Association for Veterinary Technician credentialing.

Sample job titles are as follows: Registered Veterinary Technician (RVT), Licensed Veterinary Technician (LVT), Certified Veterinary Technician (CVT), Veterinary Technician, Veterinary Nurse, Veterinary Laboratory Technician, and specialty technicians.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
</tr>
<tr>
<td>ENG 101</td>
<td>College Writing I</td>
</tr>
<tr>
<td>CHE 107</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>MAT 142</td>
<td>Math for Meds</td>
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<tr>
<td>VTE 210</td>
<td>Veterinary Clinical Nursing Skills I</td>
</tr>
<tr>
<td>VTE 102</td>
<td>Anatomy and Physiology of Domestic Animals I</td>
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<tr>
<td><strong>Spring</strong></td>
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<tr>
<td>VTE 211</td>
<td>Veterinary Clinical Nursing Skills II</td>
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<tr>
<td>VTE 205</td>
<td>Veterinary Pharmacology</td>
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<tr>
<td>VTE 103</td>
<td>Anatomy and Physiology of Domestic Animals II</td>
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<tr>
<td>ENG 102</td>
<td>College Writing II</td>
</tr>
<tr>
<td>VTE 218</td>
<td>Domestic Animal Behavior</td>
</tr>
<tr>
<td>Social Science Elective</td>
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<tr>
<th>Year 2</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
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<tr>
<td>VTE 202</td>
<td>Domestic Animal Disease and Nutrition</td>
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<tr>
<td>VTE 215</td>
<td>Veterinary Technician Internship I</td>
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<tr>
<td>BIO 225</td>
<td>Veterinary Parasitology</td>
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<tr>
<td>VTE 110</td>
<td>Farm Animal Medicine</td>
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<tr>
<td>VTE 222</td>
<td>Laboratory Animal Medicine and Management</td>
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<td><strong>Spring</strong></td>
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<tr>
<td>VTE 220</td>
<td>Veterinary Clinical Laboratory Procedures</td>
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<tr>
<td>VTE 216</td>
<td>Veterinary Technician Internship II</td>
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<tr>
<td>VTE 223</td>
<td>Surgical Nursing and Dentistry</td>
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<tr>
<td>VTE 208</td>
<td>Veterinary Radiology</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td><strong>Total Credits:</strong></td>
<td>73</td>
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Social Sciences Electives: Elective Courses by Abbreviation (http://catalog.mwcc.edu/electivecoursesbyabbreviation/).

Humanities Electives: Elective Courses by Abbreviation (http://catalog.mwcc.edu/electivecoursesbyabbreviation/).

VTE courses greater than five years in age will not be applicable to the program of study.

Campus
This program is offered on the Gardner campus only. Students will be required to complete internships during their third and fourth semesters. Attendance at internship sites is mandatory and will require students to travel.

Application Information
For specific details refer to the selective program application available through MWCC Admissions (https://mwcc.edu/enroll/admissions/).

Student Success Tips
Because of an extensive classroom and clinical commitment, students are encouraged to complete some of the general education requirements prior to beginning veterinary technology courses.

Technology is integrated into all aspects of attending college in the 21st century. Students are expected to have proficient computer skills and the ability to access the internet via desktop/laptop computer or tablet. Internet access may be from home or through a public site, such as a local public library, public college or at any MWCC campus.

Special Requirements
Please see Selective Program Requirements for Veterinary Technology (http://catalog.mwcc.edu/admissions/selectiveprogramrequirements/veterinarytechnology/).

Career Options/Earning Potential

PROGRAM STUDENT LEARNING OUTCOMES FOR VTE:

Upon graduation from this program, students shall have the ability to:

- Successfully carry out and complete each individual task as described within the Essential Skills List developed and owned by the AVMA Committee on Veterinary Technician Education and Activities (CVTEA) List (https://www.avma.org/education/center-for-veterinary-accreditation/committee-veterinary-technician-education-activities/cvtea-accreditation-policies-and-procedures-appendix-h/).
- The list includes, but is not limited to the following skills:
  - Effectively and accurately auscultate the heart and lungs of multiple species seen in large and small animal veterinary medicine.
  - Accurately compute mathematical calculations as necessary during the treatment and care of patients.
  - Demonstrate a thorough understanding of the roles of the veterinary technician in the practice of their choice.
  - Recognize the common vaccines used in domestic animals, describe the vaccine reactions seen in domesticated species, and analyze the types of drugs and their mechanisms of action.
  - Accurately handle controlled substances in accordance with the local, state, and federal laws.
  - Demonstrate understanding of patient care before, during and after a surgical procedure.
  - Effectively and accurately communicate with veterinary professionals and clients.
  - Within the veterinary setting, evaluate the concept of medical records and record keeping, explain inventory and bookkeeping, and assess veterinary sanitation protocols.
  - Correctly operate laboratory analyzers and practice safe and ethical laboratory procedures.
  - Describe and demonstrate the procedures used to diagnose parasitic infections in domestic animals.
Technical Standards ¹ for VTE:

¹ For general information about technical standards and accommodation, see Technical Standards (http://catalog.mwcc.edu/academicresources/academicandgradingpolicies/technicalstandards/).

Students entering this program must be able to demonstrate the ability to:

• Comprehend textbook material at a college level.
• Communicate and assimilate information either in spoken, printed, signed, or computer voice format.
• Gather, analyze, and draw conclusions from data.
• Stand for a minimum of two hours.
• Walk for a minimum of six hours, not necessarily consecutively.
• Stoop, bend, and twist for a minimum of 30 minutes at a time and be able to repeat this activity at frequent intervals.
• Differentiate colors as assessed by standard color blindness evaluation.
• Differentiate by touch hotness/coldness, wetness/dryness, and hardness/softness.
• Use the small muscle dexterity necessary to do such tasks as gloving, gowning, and operating controls on laboratory instrumentation.
• Respond to spoken words, monitor signals, and instrument alarms.
• Identify behaviors that would endanger a person or animal’s life or safety and intervene quickly in a crisis situation with an appropriate solution.
• Remain calm, rational, decisive, and in control at all times, especially during emergency situations.
• Lift a 50-pound animal or assist with a larger animal and transfer the animal from one location to another.
• Exhibit social skills appropriate to professional interactions.
• Maintain cleanliness and personal grooming consistent with close personal contact.
• Function without causing harm to self or animals or others if under the influence of prescription or over-the-counter medications.
• Independently respond to spoken words, monitor signals and instrument alarms
• Independently rely on the sensory skills of sight, touch and hearing in order to maintain environmental safety and awareness

VTE 102. Anatomy and Physiology of Domestic Animals I. 4 Credits.
Participants learn the inner workings of the domesticated animal’s body and how organs develop, their functions, and the reason they are present in the body. Students will use preserved animals, teaching mannequins and anatomical models of a variety of species to study both gross and microscopic anatomy of the integumentary, skeletal and muscular systems. Prerequisites: ENG 101 (or corequisite); MAT 142 (or corequisite); BIO 109; VTE 210 (or corequisite). Fall.

VTE 103. Anatomy and Physiology of Domestic Animals II. 4 Credits.
VTE 103 is a continuation of VTE 102. This course will more comprehensively explore the inner workings of the body. Students will learn about the brain, as well as the nervous, urinary, respiratory, endocrine, circulatory, reproductive and urinary systems. Prerequisites: VTE 102 with a C+ or higher. Spring.

VTE 110. Farm Animal Medicine. 4 Credits.
This course will discuss breed identification, restraint techniques, husbandry, behavior, anatomy, nutrition, common diseases and medical practices in large animal species. Laboratories will meet off-site at large animal facilities. Prerequisites: VTE 102 with a C+ or higher. Fall.

VTE 130. Effective Shelter and Rescue Operations (ESRO). 3 Credits.
ANSC-2300 Effective Shelter and Rescue Operations ESRO 3 cr. A multi-faceted approach to understanding the most critical components of effective animal shelter and rescue operation. The course covers the veterinary science behind herd health management, starting and operating a non-profit, government regulations specific to shelter and rescues, population management and the ethical and emotional aspects of animal rescue work including compassion fatigue. Prerequisites: BIOL 1001/1002 or BIOL 1005/1006. Fall.

VTE 202. Domestic Animal Disease and Nutrition. 4 Credits.
Students will explore numerous congenital, infectious, traumatic and neoplastic disease processes that can affect companion animal species. Each student will be familiar with identifying each disease, its symptoms and presenting complaints, and the diagnostic and therapeutic approaches veterinary professionals must take. The course will also cover the canine and feline digestive system, the
nutrition needed by these species, the different types of pet foods and their role in nutrition, and the nutritional requirements for the different life-stages of cats and dogs. Prerequisites: CHE 107, VTE 103, VTE 211 with a C+ or higher. Fall.

VTE 205. Veterinary Pharmacology. 2 Credits.
Students will explore the principles of pharmacology including general drug use; administration; types of drugs; indications and contraindications of drug use; and mechanism of action; as well as drug labeling, dispensing and packaging. Each student will also understand the legalities and ethics of using controlled substances. Medical calculations, prescription notation and proper record keeping will also be reviewed. Prerequisites: VTE 210 and MAT 142 with a C+ or higher and CHE 107. Spring.

VTE 208. Veterinary Radiology. 2 Credits.
This course will cover general veterinary radiology safety, x-ray generation, film handling and processing, position and restraint. Ultrasonography, CT and MRI will also be covered. Prerequisites: VTE 103 and VTE 110 with a C+ or higher. Spring.

VTE 210. Veterinary Clinical Laboratory Procedures. 4 Credits.
This course will introduce new Veterinary Technology students to the expectations of learning throughout the program, medical terminology, medical calculations, breed identification of companion animals, common regulatory agencies throughout the field, and credentialing of veterinary professionals. Students will explore the inner workings of veterinary hospitals, discover the medical ethics laws for veterinary health care professionals, partake in appropriate communication between veterinary professionals and clients, interpret medical records, schedule appointments and discuss common laws relating to medical malpractice within the veterinary field. This course will also provide the student with the knowledge and the hands-on skills essential for the day-to-day veterinary technician role. This will include topics such as performing thorough physical exams; triaging patients; restraint and handling; administering medications parenterally, and topically; bandaging. Fall.

VTE 211. Veterinary Clinical Nursing Skills I. 4 Credits.
This course is a continuation of VTE 210 Veterinary Clinical Skills I. Students will provide the student with knowledge and the hands on skills essential for the day-to-day veterinary technician role. This will include topics such as administering medications intramuscularly, subcutaneously, and intravenously; venipuncture intravenous catheter placement; urinary catheter placement; fluid therapy; emergency procedures; and use and translation of normal and abnormal electrocardiograms. Prerequisite: VTE 210, VTE 102, with a C+ or higher; corequisite VTE 103. Spring.

VTE 215. Veterinary Technician Internship I. 3 Credits.
Students are required to participate in an off-site externship for 9 hours weekly (126 total hours) at a facility of their choosing. Each facility must be pre-approved by the Veterinary Technology Program Director prior to the student starting his/her externship. Students may select an externship in any type of facility they please (i.e. large animal, emergency medicine, specialty medicine, marine life, research and exotics), but must be under direct supervision of a certified veterinary technician (CVT), unless otherwise decided by the Program Director. Each rotation will require a journal submitted at the end of the rotation explaining day-to-day activities (in detail) in which the student participated while at the externship. Prior to completing the course, students are required to present an interesting case study in which they were involved during their externships. Prerequisites: VTE 211, VTE 205, VTE 103 with a C+ or higher. Fall.

VTE 216. Veterinary Technician Internship II. 3 Credits.
Students are required to participate in an off-site externship for 9 hours weekly (126 total hours) at a facility of their choosing. Each facility must be pre-approved by the Veterinary Technology Program Director prior to the student starting his/her externship. Students may select an externship in any type of facility they please (i.e. large animal, emergency medicine, specialty medicine, marine life, research and exotics), but must be under direct supervision of a certified veterinary technician (CVT), unless otherwise decided by the Program Director. Each rotation will require a journal submitted at the end of the rotation explaining day-to-day activities (in detail) in which the student participated while at the externship. Prior to completing the course, students are required to present an interesting case study in which they were involved during their externship. Offered during Spring and Summer semesters. Prerequisites: VTE 215 with a C+ or higher. Spring.

VTE 218. Domestic Animal Behavior. 2 Credits.
This course will explore the different behaviors displayed by canines and felines. Body language, communication, social structure and life stage behavior will be discussed in detail. Strategies for preventing and correcting unwanted behaviors will also be discussed. Prerequisites: VTE 210, VTE 102 all with a C+ or higher. Spring.

VTE 220. Veterinary Clinical Laboratory Procedures. 4 Credits.
The purpose of this course is to provide students with the knowledge of how to properly collect and handle laboratory specimens, proper storage of each specimen, and general laboratory procedures. Each student will learn the skills used by most veterinary practices in the fields of blood chemistries, hematology, cytology and urine. Prerequisites: VTE 211, VTE 103, VTE 115. Spring.

VTE 222. Laboratory Animal Medicine and Management. 2 Credits.
This course will provide the student with the information needed to pursue a career as a veterinary technician in a research facility. The course will cover the local, federal and state mandated laws and regulations regarding the care and use of laboratory animals.
Students will explore proper husbandry, restraint and technical skills such as drawing blood and injecting medications into laboratory species which include mice, rats, hamsters and rabbits. Prerequisites: VTE 103, VTE 211, VTE 205, with a C+ or higher. Fall.

VTE 225. Surgical Nursing and Dentistry. 4 Credits.
Students will explore the knowledge and experience that are essential in performing safe surgical procedures in veterinary practice. Students will know how to anesthetize small animals; properly and effectively monitor patients under anesthesia; and use aseptic techniques both for prepping patients for procedures and for veterinary personnel. Students will be able to identify and explain proper use of surgical equipment and surgical instruments. Students are required to understand the procedures and safety precautions for patients and veterinary professionals before, during, and after surgical procedures. Students will also develop the skills for performing effective dentistry procedures, including dental x-rays, tooth extractions, and dental cleanings, as well as the knowledge to identify dental diseases. Prerequisites: VTE 103, VTE 205, and VTE 211 with a C+ or higher. Spring.