Assessment Cycle 2023 – 2024

Program: (AD) Veterinary Technology Program (725)

Department of Veterinary Technology

School of Science, Technology, Engineering, and Math (STEM)

College of Arts and Sciences

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Northwestern Mission: Northwestern State University is a responsive, student-oriented institution committed to acquiring, creating, and disseminating knowledge through innovative teaching, research, and service. With its certificate, undergraduate, and graduate programs, Northwestern State University prepares its increasingly diverse student population to contribute to an inclusive global community with a steadfast dedication to improving our region, state, and nation.

College of Arts and Sciences Mission: The College of Arts & Sciences, the largest college at Northwestern State University, is a diverse community of scholars, teachers, and students, working collaboratively to acquire, create, and disseminate knowledge through transformational, high-impact experiential learning practices, research, and service. The College strives to produce graduates who are productive members of society equipped with the capability to promote economic and social development and improve the overall quality of life in the region. The College provides an unequaled undergraduate education in the social and behavioral sciences, English, communication, journalism, media arts, biological and physical sciences, and the creative and performing arts, and at the graduate level in the creative and performing arts, English, TESOL, and Homeland Security. Uniquely, the College houses the Louisiana Scholars' College (the State's designated Honors College), the Louisiana Folklife Center, and the Creole Center, demonstrating its commitment to community service, research, and preservation of Louisiana's precious resources.

School of Science, Technology, Engineering, and Math (STEM) Mission: The School of Science, Technology, Engineering, and Math (STEM) at Northwestern State University serves to create a collaborative environment for natural and applied science education that inspires students and faculty to engage in an interdisciplinary approach to developing strong analytical skills in interpersonal communication, critical and creative thinking, research, and data literacy as they become lifelong learners who are prepared for an ever-changing, global STEM community.

Veterinary Technology Program Mission: The mission of the Northwestern State University of Louisiana Veterinary Technology Program is to prepare graduates who, as veterinary technicians or technologists, are clinically competent and who demonstrate:

- Excellent and compassionate patient care and services

- Excellent technical skills
- Professionalism and high ethical standards
- Promotion of public health
- Commitment to lifelong learning

Purpose: The Associate degree program in Veterinary Technology will prepare graduates to become *veterinary technicians* working in academia, animal research facilities, zoological parks, private industry, animal specialty veterinary practices, and general veterinary practices. Some graduates may further their education in attaining the Biology B.S. degree with the Veterinary Technology concentration, becoming veterinary technologists, and/or attending professional veterinary schools to become veterinarians. The program's goal is to educate graduates who possess entry-level technical skills and a knowledge base in all areas of veterinary medicine.

Methodology: The assessment process for the AD Veterinary Technology program is as follows:

1) Data from assessment tools (direct and indirect, quantitative, and qualitative) are collected and returned to the program director.

2) The program director analyzes the data to determine if students met measurable outcomes.

3) Results from the assessment are discussed with the program faculty and technical staff.

4) Individual meetings are held with faculty/staff teaching core veterinary technology courses as required.

5) The program director, in consultation with the Veterinary Technology Program Advisory Committee, will propose changes to measurable outcomes, assessment tools for the next assessment period and, where needed, curricula and program changes. Substantive changes will be reported to the American Veterinary Medical Association Committee on Veterinary Technology Education and Activities (AVMA-CVTEA), the program's accrediting agency, within 30 days.

Northwestern State University's Veterinary Technology Program continues to be fully accredited by the AVMA-CVTEA pending favorable review of follow-up reporting until its next site visit in 2027.

Student Learning Outcomes:

SLO 1. Students completing the first-year sequence of courses in Veterinary Technology will demonstrate the required didactic knowledge base and will demonstrate required "hands-on" technical skills application which will be documented for each student.

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Course Map: Tied to course syllabus objectives/outline.

VTEC 1030-1031: Introductory Veterinary Technology II Lecture/Laboratory (61 skills)

Measure 1.1. (Direct – Knowledge): Students enrolled in VTEC 1030 will demonstrate proficiency in accrediting-agency (AVMA-CVTEA) required didactic skills/knowledge base following standard criteria for evaluating essential skills (document following). Eighty-five percent (85%) of students completing the course will be able to demonstrate a basic understanding by averaging 70% or higher scores on the examinations.

Finding. Target was not met.

Analysis. In AC 2022-2023, the target was not met. The students struggled with commitment and/or study skills, therefore not performing well on all skills and knowledge-based criteria. The faculty reviewed exams during class periods and posted and discussed commonly missed questions to help clarify any misunderstandings.

Based on the analysis of the AC 2022-2023 results, in AC 2023-2024, the faculty implemented the following changes in AC 2023-2024. After the faculty reviewed exams during class periods and after all grades were posted to the gradebook, the faculty discussed commonly missed questions to clarify any misunderstanding. The students were able to ask questions and refine their skills for future assignments. The commonly missed questions were used in future exams to ensure that students truly learned the concepts rather than just moving on. There was significant regression this year, with 52% of students meeting the measure. The instructor reached out to underperforming students and recommended attending student hours with the instructor, outside the classroom, or FLAME (Faculty Led Assistance in My Education) hours. Very few students attended. Many students who failed did not complete quizzes, which significantly impacted their grades. The professor reopened quizzes that weren't previously taken to allow students a second chance to improve their scores at the end of the semester. Many did not take advantage of this opportunity.

As a result of these changes in AC 2023-2024, the target was not met.

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2022-2023	VTEC 1030	29	22	76%
2023-2024	VTEC 1030	23	12	52%

Decision. In AC 2023-2024, the target was not met. Based on the analysis of the AC 2023-2024 results, in AC 2024-2025, reading assignments and assessments will be given for homework to help promote the study and retention of material outside of class hours. Students will be able to earn service hours by volunteering for additional animal care

hours outside of the requirements for the lab. This is in the hope of promoting hands-on learning and experience with animals. FLAME hours will be offered one hour weekly, and students are encouraged to attend student hours with their instructor(s).

Measure 1.2. (Direct – Skill / Ability): Eighty-five percent (85%) of students completing VTEC 1031 will each demonstrate the ability to complete 61 required technical skills following standard criteria established for each skill (document following) and average 70% or higher scores on the course quizzes and examinations. A faculty veterinarian or credentialed veterinary technician will document completion of demonstration of each skill for each student successfully completing the laboratory course.

Finding. Target was met.

Analysis. In AC 2022-2023, the target was met. The comprehensive list of supplies and equipment that students were responsible for on the exams prevented students from overlooking material that was on the exam. The faculty and staff updated PowerPoint presentations and included videos that related to lab material. Students were encouraged to review this material prior to all exams but especially before the comprehensive final exam.

Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. The faculty generated more educational videos that pertained to the individual labs and posted them in the course management system to supplement the book knowledge. There were four students to each faculty member in the lab sections. This is far below the maximum 8:1 student-to-instructor ratio imposed by the AVMA. There was improvement, with 100% of students achieving the measure. The videos assisted visual learners with the ability to see examples of the procedures before they were performed in the lab, and the low student-to-instructor ratio allowed for more individualized instruction while students were performing the required skills.

As a result of these changes in AC 2023-2024, the target was met.

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2022-2023	VTEC 1031	23	21	91%
2023-2024	VTEC 1031	18	18	100%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results, the following changes will be made to drive improvement in AC 2024-2025. The faculty will review knowledge from the previous week's lab with students as time is available in the successive lab period. This repetition should enhance the retention of this knowledge throughout the curriculum. Instructors will also have the availability of a new canine model with anatomically correct limb articulation and will utilize it in the labs for demonstration purposes. Students will have hands-on, individualized instruction with

a student-to-instructor ratio of <8:1 with documentation of each student's attainment of skills as mandated by the AVMA. Students must attain the required skills and knowledge base that pertains to these skills to receive a passing grade of course completion. Attendance of each laboratory session is mandatory. Any missed labs will be made-up with instructors to ensure completion of essential skills.

SLO 2. Students completing the second/third year sequence of courses in Veterinary Technology will demonstrate the development of required didactic knowledge base and will demonstrate the required "hands-on" technical skills application (which will be documented for each student).

Course Map: Tied to course syllabus objectives/outline.

VTEC 2060: Veterinary Pharmacological Calculations Lecture
VTEC 2600: Animal Care and Health Lecture
VTEC 3010: Diseases of Animals Lecture
VTEC 3200-3201: Veterinary Hospital Technology II Lecture/Laboratory (69 skills)
VTEC 3700-3701: Veterinary Radiology Lecture/Laboratory (11 skills)

Measure: 2.1. **(Direct – Knowledge):** Students enrolled in VTEC 2060, 2600, 3010, 3200, and 3700 will demonstrate proficiency in accrediting-agency (AVMA-CVTEA) required didactic skills/knowledge base following standard criteria for evaluating essential skills. Eighty-five percent (85%) of students completing the course(s) will be able to demonstrate a basic understanding by averaging scores of 70% or higher on the examinations.

Finding. Target was met.

Analysis. In AC 2022-2023, the target was met. The pre-requisite of VTEC 2600 (Veterinary Anatomy and Physiology) was added to ensure that students had a better knowledge base pertaining to the functioning of organ systems. The number of students in the course was reduced; as a result, all students successfully passed the course.

Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. For VTEC 2060 (Veterinary Pharmacological Calculations), there was a review of homework/practice problems during the lectures after students had time to complete them. In VTEC 3010 (Diseases of Animals), dental diseases were added to the course to increase the volume of dental information presented in the curriculum since it is a domain that NSU students have trailed in the national average on the VTNE (Veterinary Technician National Exam). In VTEC 3200 (Veterinary Hospital Technology II), PowerPoints were updated and reorganized to better correspond with the updated textbook that was available for the course. The anesthetic table was expanded to include

more data, such as reversal agents and pain management/analgesia columns. In VTEC 3700 (Veterinary Radiology), faculty introduced case studies into the lectures that tied clinical scenarios to the topics being discussed. Overall, 89% of students met the measure, and every course exceeded the target except VTEC 2060. This course is primarily composed of first-year students. Many are still trying to establish the proper study skills and understand the process that is necessary to be successful within the curriculum. Additionally, these are the same cohort of students who did not perform well in VTEC 1030. VTEC 2600, VTEC 3010, and VTEC 3700 each showed equal performance compared to the previous year's assessment, with 93-100% of students achieving the measure. These courses are primarily composed of upper-level students who have established the necessary study skills and understand the commitment needed to be successful in the program.

As a result of these changes in AC 2023-2024, the target was met.

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2022-2023	VTEC 2060	38	30	79%
2022-2023	VTEC 2600	12	12	100%
2022-2023	VTEC 3010	15	14	93%
2022-2023	VTEC 3200	19	19	100%
2022-2023	VTEC 3700	21	21	100%
2022-2023	TOTAL	105	96	91%

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2023-2024	VTEC 2060	25	17	68%
2023-2024	VTEC 2600	17	17	100%
2023-2024	VTEC 3010	14	13	93%
2023-2024	VTEC 3200	13	13	100%

2023-2024	VTEC 3700	14	14	100%
2023-2024	TOTAL	83	74	89%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results, in AC 2024-2025, the faculty will implement the following changes to drive the cycle of improvement. For VTEC 2060 (Veterinary Pharmacological Calculations), a new course format and textbook will be implemented to help monitor students' understanding throughout the semester. The format will add in-class questions that are worked out together in a group setting. Homework will be assigned weekly, covering topics from the previous week. A review day has also been added to allow students to work on a formula sheet together that can be used during the final exam. In the past, there has been a strong correlation between attendance and positive student outcomes, so implementing these measures with in-class participation points should help bolster attendance. In VTEC 2600, there will be the implementation of Nutrition Expert Certification by Hill's Pet Nutrition to give additional certification and instruction covering the importance of pet nutrition. Additionally, a group study project with students grading their own animal's nutrition status based on body condition score and calculating adjustments in diet as necessary. This will allow students to apply the knowledge obtained in the course to real cases. In VTEC 3010 (Diseases of Animals), homework will be given where students list the causative agents and the category that each infectious organism falls into to enhance memorization of this material since they are common questions on course and board exams. In VTEC 3200 (Veterinary Hospital Technology II), students will turn in handwritten copies of their anesthetic drug charts for points to ensure that they are completing them. This should assist with their studying, proper categorization, and comprehension of the many pharmacologic agents used for veterinary anesthesia. Common orthopedic procedures will be added to the surgery lectures to improve basic comprehension of the wide variety of orthopedic procedures that are used in veterinary medicine. In VTEC 3700 (Veterinary Radiology), a new textbook and PowerPoints will be added to help increase understanding of radiology. The online assessment portion of the eBook allows for the tracking of student comprehension of complex radiological concepts as they are covered by both the instructor and the student.

Measure: 2.2. (Direct – Skill / Ability): One hundred percent (100%) of students completing VTEC 3201 will demonstrate mastery of 69 animal medical and surgical nursing and anesthetist skills through participation in live animal surgical procedures laboratories and average 70% or higher scores on the course quizzes and examinations. One hundred percent (100%) of students completing VTEC 3701 will demonstrate the ability to complete 11 technical skills pertaining to diagnostic imaging and average scores of 70% or higher on the course quizzes and examinations. Each skill attainment will be documented in a student-specific booklet for student demonstration/completion. Booklets will be evaluated for entire completion prior to student enrollment in internship practicum courses.

Finding. Target was met.

Analysis. In AC 2022-2023, the target was met. Measure 2.2 was changed to increase the target to have 100% of students complete the associated technical skills and have average scores of 70% or higher on the course quizzes and examinations. In VTEC 3201, check-off lists with detailed job descriptions were provided to students, and videos of PowerPoints were added to assist students in preparing for the various tasks and surgeries performed. In VTEC 3701, more time will be devoted to advanced ultrasound imaging during the laboratory. One hundred percent (100%, or 33/33) of students performed all required skills and completed the courses with a passing grade.

Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. In VTEC 3201, a wider variety of surgical procedures were covered in lectures/labs to replace surgical reports that were previously written. Students used new anesthetic monitoring equipment to enhance their training and skills associated with anesthesia. In VTEC 3701, students radiographed patients with known medical issues; therefore, they were available to enhance their education on the disease conditions. One hundred percent (100%, or 26/26) of students performed all required skills and completed the courses with a passing grade. Students enrolled in these laboratories are upper-level students in the final stages of their degree. They generally understand the work ethic, process, and skills that are needed to be successful in these courses.

As a result of these changes, in AC 2023-2024, the target was met.

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2022-2023	VTEC 3201	19	19	100%
2022-2023	VTEC 3701	20	20	100%
2022-2023	TOTAL	39	39	100%

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2023-2024	VTEC 3201	13	13	100%
2023-2024	VTEC 3701	13	13	100%
2023-2024	TOTAL	26	26	100%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results, the following changes will be made to drive improvement in AC 2024-2025. Students will have their surgery notebooks examined for a grade prior to beginning live animal surgeries to ensure that they are prepared and have the necessary information needed to be successful. A new canine dental technician model received via grant will be used by students in VTEC 3201 and 3701. It will be used in the preliminary surgery

labs in VTEC 3201 to give students more experience with dental prophylaxis procedures prior to performing them on live animals during the last half of the semester. In VTEC 3701, the model will be used to train students to perform canine dental radiography techniques on a more realistic model prior to performing dental radiographs on live animals in VTEC 3201.

SLO 3. Following completion of other required courses entitled Veterinary Technology (VTEC), each student must enroll in a 12-credit hour internship practicum with 480 clock hours working under the direct supervision of veterinarians and/or credentialed veterinary technicians/technologists. The supervisor must submit comprehensive evaluations of each student's technical skills, reliability, and attitude while completing their practicum. Each student submits an evaluation of the internship site and supervisory staff to the program director at the completion of the internship practicum course. The students will receive positive ratings greater than or equal to 95% on each item.

Course Map: Tied to course syllabus objectives/outline.

VTEC 2900: Veterinary Internship Practicum

Measure 3.1. (Direct – Skill / Ability): For student's enrolled in VTEC 2900, their direct internship supervising veterinary professional will submit a written evaluation of the student's technical performance of the required 301 technical skills, rating the skills performance for each one on a scale of measurement of 0 – not applicable; 1 – poor; 2 – good; or 3 – excellent. Program expectations are ratings of good-to-excellent will be earned for 95% or more of the student's skills.

Finding. Target was met.

Analysis. In AC 2022-2023, the target was met. Students were provided with patients and cases that enabled the repetition of essential skills in Measures 1.2 and 2.2 as required by the AVMA-CVTEA. Supervisors at internship sites then reported back to the program on the evaluation of these skills and others that are used in a clinical environment. Students' skills were rated as either good or excellent 99.2% of the time, which surpassed the goal for the measure. However, there were fewer skills (61%) that were rated as excellent compared to the previous year (79.3%).

Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. Program instructors invested in hands-on instruction of skills and improved upon the competency of those skills by incorporating repetition of those skills valued by employers into upper-level laboratories. Instructors also adjusted the grading rubric for VTEC 3201 to place more weight on grading skills during the actual anesthesia, dentistry, and surgical procedures that were performed during the second half of the semester. Students were provided with patients and cases that enabled the repetition of essential skills in Measures 1.2 and 2.2 as required by the AVMA-CVTEA. Supervisors at internship sites then report back to the program on the evaluation of these

skills and others that are used in a clinical environment. Students' skills were rated as either good or excellent 99.6% of the time, which surpasses the goal for the measure. There was also an improvement in the percentage of students rated as excellent compared to the previous year (74.8% this year compared to 61% in 2022-2023).

As a result of these changes in AC 2023-2024, the target was met.

Assessment Year	VTEC 2900	Excellent	Good	Poor
2022-2023	# ratings of skills performance	1422	890	18
2022-2023	% ratings of skills performance	61%	38.2%	0.8%

Assessment Year	VTEC 2900	Excellent	Good	Poor
2023-2024	# ratings of skills performance	2422	800	14
2023-2024	% ratings of skills performance	74.8%	24.7%	0.4%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results, the faculty will implement the following changes to drive the cycle of improvement in AC 2024-2025. The program instructors will invest in hands-on instruction of skills and aid in improving upon the students' competency of those skills by incorporating repetition of those skills into upper-level laboratories. Students in VTEC 3191 will be required to work in teams to perform animal restraint and perform venipuncture to collect blood samples for the clinical pathology laboratory under the supervision of instructors. This is completed again in VTEC 3201 the following semester. Regularly repeating these skills will improve their competence. Videos showing proper techniques for running blood in the program's CBC and blood chemistry analyzers will be made and posted in VTEC 3191 course management software for student reference. A new articulating canine teaching model and a canine dental technician model will be used in VTEC 1011, 1031, 3201, and 3701 to enhance the teaching of essential skills.

Measure 3.2. (Indirect – Attitude / Reliability): Each student enrolled in VTEC 2900 is evaluated by the supervisor in the veterinary clinical setting on several subjective performance indicators which pertain to job performance. The final evaluation includes ratings of Above Average, Average, Below Average, or Not Observed, for each student's maturity/judgment, dependability/reliability, initiative/originality, function as a team member, communication skills, work-place character/integrity/ethics, and potential as a veterinary technician. Additionally, the supervisor is asked to state the student's strongest and weakest points. The program expects 5% or less negative ratings (Below Average) for each student.

Findings: Target was met.

Analysis. In AC 2022-2023, the target was met. The faculty communicated the need and expectation for a high-quality work ethic to students. A larger grading emphasis was placed on work ethic in VTEC 3201 dentistry and surgical labs to show this importance and minimize poor student performance at internship sites. The subjective characteristics of students were rated as either average or above average for 98.5% of the criteria.

Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. The faculty incorporated requirements encouraging student ownership for their individual outcomes, assessed students based on reliability in the care of animals, and required laboratory attendance to complete required skills in the veterinary technology curriculum. The faculty adjusted the grading rubric in VTEC 3201 to place a larger emphasis on teamwork, work ethic, and communication skills/client education. The subjective characteristics of students were rated as either average or above average for 96% of the criteria. There was a slight increase in the percentage of below-average ratings (4% versus 1.5% the previous year). This was primarily due to several below-average ratings from an individual student who did not perform well during her internship.

As a result of these changes in AC 2023-2024, the target was met.

Assessment Year	VTEC 2900	Above Average	Average	Below Average
2022-2023	# ratings of subjective characteristics	102	31	2
2022-2023	% ratings of subjective characteristics	75.5%	23%	1.5%

Assessment Year	VTEC 2900	Above Average	Average	Below Average
2023-2024	# ratings of subjective characteristics	130	34	7
2023-2024	% ratings of subjective characteristics	76%	20%	4%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results, the following changes will be made to drive improvement in AC 2024-2025. The grading rubric for VTEC 1011 and 1031 will include characteristics such as dependability, reliability, and maturity that tie in with being punctual, present in laboratories, and with proper materials/dress necessary for the laboratory. Communication skills will be assessed and contribute to grades in VTEC 3201 and 4200. Group projects will be incorporated into VTEC 2060 and 2600 to foster the ability of students to work with other individuals.

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SLO 4. Students will demonstrate proficiency in Veterinary Technology by earning passing scores the first time taking the Veterinary Technician National Examination (VTNE) equal to the national average when evaluated over the most recent three-year window of time and will meet or exceed the national average for each measured domain score in the most recent evaluation available.

Measure 4.1. (Direct – Knowledge): Students taking the **Veterinary Technician National Examination (VTNE)** will demonstrate proficiency by obtaining passing scores in percentages *equal to the national average percent* of students passing the examination on the first attempt, when examining the most recent available three-year school report. The VTNE is scored from 200-800, with 425 being a passing score. School reports are provided by the test administrators for each examination cycle and for the most recent three years ending on June 30.

Finding. Target was met.

AC 2022-2023: Improvement and target met. NSU graduates had a 76% pass rate over the last 3 years; the national average pass rate was 69%.

AC 2023-2024: Improvement and target met. NSU graduates had a 76.7% pass rate over the last 3 years; the national average pass rate was 66.3%.

Analysis. In AC 2022-2023, the target was met.

Based on the analysis of the AC 2022-2023 results, in AC 2023-2024, all students were encouraged to enroll in VTEC 4200 Comprehensive Review in preparation for the VTNE. Instructors incorporated sample VTNE questions into course material and exams as it related to information covered in the course. Computer-based exams were used in some courses to allow students to become more accustomed with this testing modality since it is how the VTNE is administered. The faculty encouraged students to prepare and take the VTNE while they were completing their internships.

As a result of these changes in AC 2023-2024, the target was met. When the general trend is analyzed, one sees that the **3-year national pass rate has decreased from 71.6% to 66.3%** over each of the last three cycles while **NSU graduates' pass rates have increased from 66.7% to 76.7%** during the same time periods. NSU program graduates continue to show improved VTNE pass rates compared to a regression in national pass rates.

VTNE July 2019—June 2022	**Pass**	**Fail**
NSU graduates' performance (#)	20	10
NSU graduates' performance (%)	66.7%	33.3%
National average (%)	71.6%	28.4%

VTNE July 2020—June 2023	**Pass**	**Fail**

NSU graduates' performance (#)	19	6
NSU graduates' performance (%)	76%	24%
National average (%)	69.0%	31.0%

VTNE July 2021— June 2024	**Pass**	**Fail**
NSU graduates' performance (#)	23	7
NSU graduates' performance (%)	76.7%	23.3%
National average (%)	66.3%	33.7%

Decision. In AC 2023-2024, the target was met. Based on the analysis of the AC 2023-2024 results and to drive improvement in AC 2024-2025, all students will be encouraged to enroll in VTEC 4200 Comprehensive Review in preparation for the VTNE even if it is not required for their degree. Instructors will incorporate sample VTNE questions into course material and exams as they relate to information covered in the course. Courses will be updated with new information as needed since veterinary medicine is an ever-evolving field. Faculty will encourage students applying for licensure through the state of Louisiana to prepare and take the VTNE soon after completing all VTEC courses other than internships. Program faculty have found that students who delay taking the VTNE do not perform as well. Ultimately, it is up to the student to commit to the time and effort in preparation for a very comprehensive exam that covers material from the entire curriculum on a wide range of species.

Measure 4.2. (Direct – Knowledge): Ten domain scores by subject are provided to each school, which is helpful in determining when/where program curriculum changes/improvements are needed. The program director, along with program veterinary faculty/staff, evaluates the data provided in the most recently available school report for a comprehensive view of a comparison of our graduates to a national standard by subject. The goal is to have students meeting or exceeding the national average scores for each domain subject.

Finding. Target was not met.

Analysis. In AC 2022-2023, the target was not met.

Based on the analysis of the AC 2022-2023 results, in AC 2023-2024, faculty added focused lessons in the domains of Dentistry, Diagnostic Imaging, and Pharmacy/Pharmacology since these domains have the largest discrepancies relative to the national average. Focus was placed in these areas during Pharmacological Calculations (VTEC 2060), Veterinary Clinical Pharmacology (VTEC 4090), Veterinary Hospital Technology II (VTEC 3200/3201), Veterinary Radiology (VTEC 3700/3701), and Veterinary Technology Comprehensive Review (VTEC 4200) courses to improve didactic

knowledge and test scores. Dental disease lectures were added to Diseases of Animals (VTEC 3010). Case studies were added to Veterinary Radiology (VTEC 3700) to show students how the lecture material pertains to sample clinical cases. The effort was made to allow students to radiograph patients with abnormalities as they were available in the Veterinary Radiology Lab (VTEC 3701). Sample VTNE test questions relating to these domains were incorporated into the course quizzes and exams to give students a better understanding of the testing format and material covered.

As a result of these changes in AC 2023-2024, the target was not met. However, NSU students did exceed the national average in the Raw Total category and in six of the domains, including Pharmacy & Pharmacology, Surgical Nursing, Laboratory Procedures, Animal Care & Nursing, Anesthesia, and Emergency Medicine/Critical Care. NSU students exceeding the national average in the Pharmacy & Pharmacology domain is significant since it was an area of focus for improvement from last year. Dentistry, Diagnostic Imaging, and Pain Management/Analgesia are within 3.5% of the national average. Communication/Professional Support is a new domain that was added to the VTNE this year and the domain that NSU students had the largest deficit when compared to the national average. The student(s) taking the VTNE during the November/December 2023 window performed exceptionally well and exceeded the national average in the Raw Total Score and all ten domains.

VTNE Domain July 15— August 15, 2022	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	58.33%	62.26%
Surgical Nursing	79.41%	64.83%
Dentistry	62.50%	69.50%
Laboratory Procedures	52.94%	60.49%
Animal Care & Nursing	65.00%	67.10%
Diagnostic Imaging	50.00%	70.35%
Anesthesia	68.18%	66.73%
Emergency Med/Critical Care	66.67%	67.20%
Pain Management/Analgesia	50.00%	64.31%
RAW TOTAL	62.67%	65.69%

VTNE Domain November 15--December 15, 2022	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	58.73%	59.12%
Surgical Nursing	69.75%	61.80%
Dentistry	54.76%	63.88%
Laboratory Procedures	67.23%	59.45%
Animal Care & Nursing	71.43%	68.02%
Diagnostic Imaging	70.13%	66.14%
Anesthesia	63.64%	65.30%

Emergency Med/Critical Care	69.05%	66.11%
Pain Management/Analgesia	68.83%	65.51%
RAW TOTAL	66.29%	64.07%

VTNE Domain March 15—June 15, 2023	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	N/A	N/A
Surgical Nursing	N/A	N/A
Dentistry	N/A	N/A
Laboratory Procedures	N/A	N/A
Animal Care & Nursing	N/A	N/A
Diagnostic Imaging	N/A	N/A
Anesthesia	N/A	N/A
Emergency Med/Critical Care	N/A	N/A
Pain Management/Analgesia	N/A	N/A
RAW TOTAL	N/A	N/A
*No students tested during this testing window.		
VTNE Domain AC 2022-2023	**NSU Grad. Avg. Percent Correct**	**National Avg. Percent Correct**
Pharmacy & Pharmacology	**58.64%**	**61.71%**
Surgical Nursing	**71.9%**	**64.11%**
Dentistry	**56.48%**	**68.22%**
Laboratory Procedures	**64.05%**	**60.74%**
Animal Care & Nursing	**70%**	**67.38%**
Diagnostic Imaging	**65.66%**	**68.51%**
Anesthesia	**64.65%**	**66.16%**
Emergency Med/Critical Care	**68.52%**	**66.76%**
Pain Management/Analgesia	**64.65%**	**64.83%**
RAW TOTAL	**65.48%**	**65.18%**

VTNE Domain July 15— August 15, 2023	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	61.11%	61.67%
Surgical Nursing	76.47%	71.81%
Dentistry	56.67%	62.68%
Laboratory Procedures	78.82%	67.06%

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Animal Care & Nursing	71.33%	67.10%
Diagnostic Imaging	74.55%	66.43%
Anesthesia	70.91%	66.53%
Emergency Med/Critical Care	70.00%	66.29%
Pain Management/Analgesia	72.73%	69.47%
RAW TOTAL	70.53%	66.60%

VTNE Domain November 15--December 15, 2023	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	80.00%	61.04%
*** Communication / Professional Support**	85.71%	70.49%
Surgical Nursing	85.00%	64.60%
Dentistry	90.00%	65.80%
Laboratory Procedures	78.57%	59.97%
Animal Care & Nursing	86.67%	65.04%
Diagnostic Imaging	77.78%	68.89%
Anesthesia	95.00%	63.34%
Emergency Med/Critical Care	90.00%	63.79%
Pain Management/Analgesia	90.00%	65.79%
RAW TOTAL	86.00%	64.25%

VTNE Domain March 15—April 17, 2024	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	60.0%	61.79%
*** Communication / Professional Support**	31.43%	61.8%
Surgical Nursing	73.0%	66.36%
Dentistry	58.0%	63.36%
Laboratory Procedures	65.71%	56.60%
Animal Care & Nursing	60.67%	65.49%
Diagnostic Imaging	48.89%	64.19%
Anesthesia	64.00%	65.34%
Emergency Med/Critical Care	58.0%	66.65%
Pain Management/Analgesia	54.0%	63.22%
RAW TOTAL	60.27%	63.8%

*** New domain added this year since November 2023.**

VTNE Domain AC 2023-2024	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	**62.32**	**61.51**
Communication / Professional Support	**40.48**	**66.74**
Surgical Nursing	**75.67**	**68.42**
Dentistry	**60.3**	**63.77**
Laboratory Procedures	**72.84**	**62.58**
Animal Care & Nursing	**67.88**	**66.12**
Diagnostic Imaging	**63.18**	**66.66**
Anesthesia	**69.96**	**65.31**
Emergency Med/Critical Care	**66.36**	**65.62**
Pain Management/Analgesia	**65.79**	**66.96**
RAW TOTAL	**67.27**	**65.26**

Decision. In AC 2023-2024, the target was not met. Based on the analysis of the AC 2023-2024 results and to drive improvement in AC 2024-2025, faculty will add focused lessons in the domains of Communication/Professional Support with a focus on Dentistry and Diagnostic Imaging since these domains have the largest discrepancies relative to the national average during this year's testing cycle. Lectures on professional communication with the veterinary team and client interaction will be expanded in VTEC 1010 and 1030 – Introduction to Veterinary Technology 1 & 2. The Canine Dental Technician Model will be incorporated into student laboratories to enhance understanding of dental radiography and comprehensive oral health assessment and treatment in VTEC 3201/3701 – Veterinary Hospital Technology 2 and Veterinary Radiology. A new interactive textbook with online assessments will be implemented into VTEC 3700/3701 – Veterinary Radiology to enhance student comprehension of diagnostic imaging.

Comprehensive Summary of Key Evidence of Improvements Based on Analysis of Results: The following reflects all the changes implemented to drive the continuous process of seeking improvement in AC 2023-2024. These changes are based on the knowledge gained through the analysis of AC 2022-2023 results.

- In Measure 1.1, after the faculty reviewed exams during class periods and after all grades were posted to the gradebook, the faculty discussed commonly missed questions to clarify any misunderstanding. The students were able to ask

questions and refine their skills for future assignments. The commonly missed questions were used in future exams to ensure that students truly learned the concepts rather than just moving on. There was significant regression this year, with 52% of students meeting the measure. The instructor reached out to underperforming students and recommended attending student hours with the instructor, outside the classroom, or FLAME (Faculty Led Assistance in My Education) hours. Very few students attended. Many students who failed did not complete quizzes, which significantly impacted their grades. The professor reopened quizzes that weren't previously taken to allow students a second chance to improve their scores at the end of the semester.

- In Measure 1.2, the faculty and staff updated PowerPoint presentations and included videos that related to lab material. Students were encouraged to review this material prior to all exams, but especially before the comprehensive final exam. Based on the analysis of the AC 2022-2023 results, the faculty implemented the following changes in AC 2023-2024. The faculty generated more educational videos that pertained to the individual labs and posted them in the course management system to supplement the book knowledge. There were four students to each faculty member in the lab sections. This is far below the maximum 8:1 student-to-instructor ratio imposed by the AVMA. There was improvement, with 100% of students achieving the measure. The videos assisted visual learners with the ability to see examples of the procedures before they were performed in the lab, and the low student-to-instructor ratio allowed for more individualized instruction while students were performing the required skills.

- In Measure 2.1, for VTEC 2060 (Veterinary Pharmacological Calculations), there was a review of homework/practice problems during the lectures after students had time to complete them. In VTEC 3010 (Diseases of Animals), dental diseases were added to the course to increase the volume of dental information presented in the curriculum since it is a domain that NSU students have trailed in the national average on the VTNE (Veterinary Technician National Exam). In VTEC 3200 (Veterinary Hospital Technology II), PowerPoints were updated and reorganized to better correspond with the updated textbook that was available for the course. The anesthetic table was expanded to include more data, such as reversal agents and pain management/analgesia columns. In VTEC 3700 (Veterinary Radiology), faculty introduced case studies into the lectures that tied clinical scenarios to the topics being discussed. Overall, 89% of students met the measure, and every course exceeded the target except VTEC 2060. This course is primarily composed of first-year students. Many are still trying to establish the proper study skills and understand the process that is necessary to be successful within the curriculum. Additionally, these are the same cohort of students who did not perform well in VTEC 1030. VTEC 2600, VTEC 3010, and VTEC 3700 each showed equal performance compared to the previous year's assessment, with 93-100% of students achieving the measure. These courses are primarily composed of upper-level students who have established the necessary study skills and understand the commitment needed to be successful in the program.

- In Measure 2.2, in VTEC 3201, a wider variety of surgical procedures were covered in lectures/labs to replace surgical reports that were previously written. Students used new anesthetic monitoring equipment to enhance their training and skills associated with anesthesia. In VTEC 3701, students radiographed patients with known medical issues; therefore, they were available to enhance their education on the disease conditions. One hundred percent (26 of 26) of students performed all required skills and completed the courses with a passing grade. Students enrolled in these laboratories are upper-level students in the final stages of their degree. They generally understand the work ethic, process, and skills that are needed to be successful in these courses.

- In Measure 3.1, Program instructors invested in hands-on instruction of skills and improved upon the competency of those skills by incorporating repetition of those skills valued by employers into upper-level labs. Instructors also adjusted the grading rubric for VTEC 3201 to place more weight on grading skills during the actual anesthesia, dentistry, and surgical procedures that were performed during the second half of the semester. Students were provided with patients and cases that enabled the repetition of essential skills in Measures 1.2 and 2.2 as required by the AVMA-CVTEA. Supervisors at internship sites then report back to the program on the evaluation of these skills and others that are used in a clinical environment. Students' skills were rated as either good or excellent 99.6% of the time, which surpasses the goal for the measure. There was also an improvement in the percentage of students rated as excellent compared to the previous year with 74.8% (61% in 2022-2023) of students receiving an excellent rating.

- In Measure 3.2, the faculty incorporated requirements encouraging student ownership for their individual outcomes, assessed students based on reliability in the care of animals, and required laboratory attendance to complete required skills in the veterinary technology curriculum. The faculty adjusted the grading rubric in VTEC 3201 to place a larger emphasis on teamwork, work ethic, and communication skills/client education. The subjective characteristics of students were rated as either average or above average for 96% of the criteria. There was a slight increase in the percentage of below-average ratings (4% versus 1.5% the previous year). This was primarily due to several below-average ratings from an individual student who did not perform well during her internship.

- In Measure 4.1, all students were encouraged to enroll in VTEC 4200 Comprehensive Review in preparation for the VTNE. Instructors incorporated sample VTNE questions into course material and exams as it related to information covered in the course. Computer based exams were used in some courses to allow students to become more accustomed with this exam modality since it is how the VTNE is administered. The faculty encouraged students to prepare and take the VTNE while they were completing internships.

- In Measure 4.2, faculty added focused lessons in the domains of Dentistry, Diagnostic Imaging, and Pharmacy/Pharmacology since these domains have the largest discrepancies relative to the national average. Focus was placed in these

areas during Pharmacological Calculations (VTEC 2060), Veterinary Clinical Pharmacology (VTEC 4090), Veterinary Hospital Technology II (VTEC 3200/3201), Veterinary Radiology (VTEC 3700/3701), and Veterinary Technology Comprehensive Review (VTEC 4200) courses to improve didactic knowledge and test scores. Dental disease lectures were added to Diseases of Animals (VTEC 3010). Case studies were added to Veterinary Radiology (VTEC 3700) to show students how the lecture material pertains to sample clinical cases. The effort was made to allow students to radiograph patients with abnormalities as they were available in the Veterinary Radiology Lab (VTEC 3701). Sample VTNE test questions relating to these domains were incorporated into the course quizzes and exams to give students a better understanding of the testing format and material covered.

Plan of Action Moving Forward:

- Reading assignments and assessments will be given to students in VTEC 1030.
- Volunteer service hours will be offered to students outside of lab requirements to promote hands-on learning and experience with animals in VTEC 1030 by volunteering for additional animal care hours outside of the requirements for lab.
- FLAME (Faculty Led Assistance in My Education) hours will be offered weekly by instructors.
- Instructors will review knowledge from the previous week's lab with students as time is available in VTEC 1031.
- A new course format and textbook will be implemented in VTEC 2060 that will add in-class questions that are worked out together in a group setting. Homework will be assigned weekly, and students will work on a formula sheet during a review day at the conclusion of the semester that can be used during the final exam.
- A Nutrition Expert Certification by Hills will be incorporated into VTEC 2600 to give additional certification and instruction covering pet nutrition.
- Students will conduct a group study project in VTEC 2600 analyzing the nutrition status of animals based on body condition score and calculating dietary adjustments, as necessary.
- Students will receive homework in VTEC 3010 requiring the listing of causative agents and the categorization of each disease-causing infectious agent that is covered in the course.
- Students will turn in handwritten copies of their anesthetic drug charts for points in VTEC 3200 to ensure completion and have it assist with their studying, proper categorization, and comprehension of the anesthetic agents.
- Common orthopedic procedures will be added to the surgery lectures in VTEC 3200 to improve basic comprehension of the wide variety of orthopedic procedures that are used in veterinary medicine.

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- A new textbook and updated PowerPoints will be used in VTEC 3700 to help increase understanding of radiology. The online assessment portion of the eBook allows tracking of student comprehension of complex radiological concepts as they are covered.
- Surgery notebooks will be examined for a grade prior to beginning live animal surgeries in VTEC 3201 to ensure that students are prepared and have the necessary information needed to be successful.
- A canine dental technician model will be used by students in VTEC 3201 and 3701 to enhance student understanding of dental prophylaxis procedures and dental radiography techniques.
- A new canine model with anatomically correct limb articulation will be used in VTEC 1011, 1031, and 3701 to enhance teaching of positioning and clinical restraint skills.
- Students in VTEC 3191 will be required to work in small groups to perform animal restraint and perform venipuncture to collect blood for the clinical pathology lab under the supervision of instructors.
- Videos showing proper technique for running blood in the CBC and blood chemistry analyzers will be made and posted in VTEC 3191 for student reference.
- The grading rubric for VTEC 1011 and 1031 will include characteristics such as dependability, reliability, and maturity that tie in with being punctual, present in labs, and with proper materials/dress necessary for lab.
- Group projects will be incorporated into VTEC 2060 and 2600 to improve the ability of students to work with other individuals to foster teamwork.
- Lectures on professional communication with the veterinary team and client interaction will be expanded in VTEC 1010 and 1030.
- Faculty will add focused lessons in the domains of Communication/Professional Support, Dentistry, and Diagnostic Imaging since these domains have the largest discrepancies relative to the national average during last year's testing cycle. Focus will be placed on these areas in VTEC 1010, 1030, 3200, 3201, 3700, 3701 courses to improve didactic knowledge and test scores in these domains.
- Students will have hands-on individualized instruction with a student to instructor ratio of <8:1 for all live animal labs with documentation of each student's attainment of skills as mandated by the AVMA.
- All students will be encouraged to take Comprehensive Review (VTEC 4200) to help them succeed in passing the VTNE by reviewing didactic knowledge, domain structure/weighting, and using sample test questions from VTNE review books.