Assessment Cycle 2021 – 2022

Veterinary Technology Program (Associate Degree)

College: 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: 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 Biological and Physical Sciences Mission: The School of Biological and Physical Sciences will become a reputable leader in public higher education by providing a transformative science educational experience using innovative instructional methods and through the scholarly achievements of our faculty, staff, students, and alumni. The School serves and inspires the students of Northwestern State University and the public through the development of lifelong learners who are excited about science, are disciplined in analytical and critical thinking skills, and are socially, environmentally, and ethically responsible. The School delivers Associate degrees in Veterinary Technology, Bachelor of Science degrees in Biology (with concentrations in Biomedical, Clinical Laboratory Science, Forensic Science, Natural Science, and Veterinary Technology), Applied Microbiology (with concentrations in Environmental and Applied Microbiology and Medical and Health Profession), and Physical Sciences. The School also offers minors in Biology, Microbiology, Wildlife Management, and Chemistry.

Assessment Cycle 2021 – 2022

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.

During AC 2021-2022, the AVMA-CVTEA performed a virtual site visit in September 2021 to assess the accreditation status of the program. In November 2022, the AVMA-CVTEA informed the program that it will remain fully-accredited pending favorable review of follow-up reporting until its next site visit in 2027.

Assessment Cycle 2021 – 2022

COVID-19 Statement: In AC 2021-2022, course schedules and format returned to the normal, in-person format that was used successfully prior to COVID when the program statistics were showing improvement relative to the national averages. However, some students taking the Veterinary Technician National Exam (VTNE) during this testing cycle were still impacted by the Hy-flex course instruction that was utilized due to COVID restrictions.

Student Learning Outcomes:

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

Course Map: Tied to course syllabus objectives/outline.

VTEC 1030-1031: Introductory Veterinary Technology II Lecture/Laboratory (71 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 not met.

Analysis. In AC 2020-2021, the target was not met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, quizzes were altered to encourage regular class attendance and review of material. Individual student outcomes were monitored closely for early intervention with recommended study groups and/or tutoring or time spent with instructors during office hours, referral for individual counselling, and encouragement to spend the necessary time with the study material.

As a result of these changes in AC 2021-2022, the target was not met. There was a regression with 73% of students passing this course. Two of these students have taken the class multiple times and are either unwilling or incapable of making the adjustments necessary to pass the course. The remainder of the students did not make an effort to meet with the instructor outside of class despite the early intervention efforts made through emails encouraging the students to book office hour appointments with the instructor. Without the willingness of students to spend extra time with the instructor or get additional tutoring, it is very difficult to alter their comprehension of the material and improve their success in the course. Students that did meet with the instructor outside of class generally improved their scores on subsequent quizzes and exams. Some of the outdoor laboratories in the corequisite VTEC 1031 had to be rescheduled this year due

to weather conditions which caused the lecture and laboratory material to not coincide with one another.

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2020-2021	VTEC 1030	34	28	82%
2021-2022	VTEC 1030	30	22	73%

Decision. In AC 2021-2022, the target was not met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The instructor will employ early intervention strategies to encourage students to meet with the instructor or seek tutoring outside of class. Students who score <65% on the initial exam and those with an average <70% at midterm will be contacted by the instructor to discuss deficiencies and a plan to improve comprehension of the material. Theoretical clinical cases will be introduced, and class discussion of these cases will promote student communication and interaction. It will also allow the instructor to identify and clarify topics that students don't completely understand. Every effort will be made to coordinate lecture and lab material to coincide with one another to provide repetition and improve comprehension.

Measure 1.2. (Direct – Skill / Ability): Eighty five percent (85%) of students completing VTEC 1031 will each demonstrate ability to complete 71 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 not met.

Analysis. In AC 2020-2021, the target was met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, Measure 1.2 was changed to require students to complete the technical skills required by our accrediting agency and have a 70% average at the completion of the course. This provides a more meaningful assessment since there were previous instances where a student would complete the skills but not receive a passing grade for the course due to lack of understanding those skills. PowerPoint presentations and videos were available for students to review prior to the lab period. Pre-lab quizzes were used to ensure that students reviewed the material and came to lab prepared.

As a result of these changes, the target was not met in AC 2021-2022 with 77% (24 of 31) of students achieving the target measure. A regression in the percentage of students meeting this measure was expected due to the altering of the measure that required both completion of the skills and comprehension of the material relating to the skills. Two of these students failed both the lecture and laboratory corequisite courses, and one student in this group failed the laboratory for a second time. The remainder of the unsuccessful

students could not successfully pass the exams associated with the skills being taught in the laboratory. The laboratory material is available in the textbook, in a PowerPoint posted in Moodle, there is a pre-lab quiz on the material, and the material is covered again in-person during the lab. The material is readily available to students on multiple levels, but students must develop the proper study skills and be willing to devote the time to adequately learning the material to be successful on the exams.

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2020-2021	VTEC 1031	30	30	100%
2021-2022	VTEC 1031	31	24	77%*

*Measure altered in AC 2021-2022

Decision. In AC 2021-2022, the target was not met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The faculty will encourage students to review the posted PowerPoint presentations that are available to students throughout the semester prior to taking the exams, especially the comprehensive final exam. A list of supplies and equipment that students are responsible for being able to identify on the exams will be added to Moodle since students have had more difficulty with the identification portion of the lab practicals. Students will have hands-on individualized instruction with a student to instructor ratio of <8:1, documentation of each student's attainment of skills, and the requirement that each student 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 as scheduled or by make-up sessions will be required to ensure that each student attains the required skills.

SLO 2. Students completing the second/third year sequence of courses in Veterinary Technology will demonstrate development of required didactic knowledge base and will demonstrate 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: Animal Diseases Lecture
VTEC 3200-3201: Veterinary Hospital Technology II Lecture/Laboratory (63 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 percent (80%) 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 2020-2021, the target was not met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, faculty changed the method of delivery in VTEC 2060 from online to in-person classes. Course material was reorganized in VTEC 2060 and 3010. In VTEC 3010, students were advised to place material presented into a chart format to aid with organization and comprehension. Examples of this were given to students. Case studies and calculations that applied to the lecture material were utilized in VTEC 3200. In VTEC 3700, there was further updating and refining of lecture PowerPoints since these were originally designed last year. Early intervention when students were not performing well was utilized in all courses.

As a result of these changes in AC 2021-2022, the target was met overall. However, VTEC 2060 and 2600 did not meet the target individually. VEC 2060 (Pharmacological Calculations) showed significant improvement compared to AC 2020-2021 since it was converted back to an in-person course since COVID restrictions were lifted. Instructors in the program have found that students tend to do better with in-person classes that involve mathematical calculations. There was a regression in VTEC 2600 (Animal Care and Health). The instructor finds that many students do not have the base level of knowledge needed to understand the nutrition and non-infectious diseases affecting organ systems that are taught in this course. In fact, there were two students enrolled in the course that were not veterinary technology majors due to no course pre-requisites being required. There was improvement in VTEC 3010 (Animal Diseases), 3200 (Hospital Technology II), and 3700 (Veterinary Radiology) with 83%, 100%, and 88% of the students meeting the target, respectively. In VTEC 3010, the diseases chart seemed to benefit students with organization and their performance on the final exam. VTEC 3200 and 3700 are primarily composed of upper-level students approaching graduation that have improved work ethic and study habits that contribute to their success. Overall, there was improvement with 80% of students achieving scores of 70% or higher on the examinations.

Assessment Cycle 2021 – 2022

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2020-2021	VTEC 2060	46	30	65%
2020-2021	VTEC 2600	45	38	84%
2020-2021	VTEC 3010	32	24	75%
2020-2021	VTEC 3200	21	20	95%
2020-2021	VTEC 3700	23	20	87%
2020-2021	TOTAL	167	132	79%

Assessment Year	Course	# Students Enrolled	# Students Scoring 70% avg. or higher on exams	Percent Students Meeting Measure
2021-2022	VTEC 2060	41	32	78%
2021-2022	VTEC 2600	29	19	66%
2021-2022	VTEC 3010	24	20	83%
2021-2022	VTEC 3200	15	15	100%
2021-2022	VTEC 3700	17	15	88%
2021-2022	TOTAL	126	101	80%

Decision. In AC 2021-2022, the target was met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The VTEC 2060 course will remain in a face-to-face format as this delivery enhances student understanding. Practice problems/homework will be assigned throughout the semester to provide the students with more practice and repetition. In VTEC 2600, the program coordinator will submit a proposal to the Curriculum Review Committee to add a course pre-requisite of VTEC 2090 (Veterinary Anatomy and Physiology) to the catalog so students will have a better knowledge base pertaining to the functioning of organ systems prior to enrolling in VTEC 2600. This

should enhance comprehension of the material and prevent students without the necessary knowledge base from enrolling in the course. In VTEC 3010, the instructor will post videos of lectures for student review as needed throughout the semester. New diseases may be added to the course as necessary to improve student scores on the national board exam. The disease chart that was recommended to students this year to condense and improve organization of the material throughout the semester will be stressed and expanded upon. In VTEC 3200, more time will be allotted to pain management information, and a chart will be introduced that will allow students to better organize the drugs, drug classes, and their purposes. In VTEC 3700, more information on advanced imaging and radiology technique charts will be added into the course, and case studies will be incorporated to improve comprehension of the material and apply it to similar veterinary clinical practice cases. Early intervention for students that score <65% on the initial exam and <70% on the midterm will remain in all courses. They will be contacted by the instructor to schedule meetings during office hours to discuss difficulties and provide suggestions to improve study skills and comprehension.

Measure: 2.2. (Direct – Skill / Ability): Eighty-five percent (85%) of students completing VTEC 3201 will demonstrate mastery of 63 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. Eighty-five percent (85%) of students completing VTEC 3701 will demonstrate 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 2020-2021, the target was met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, Measure 2.2 was changed to require students to complete the technical skills required by our accrediting agency and have a 70% average at the completion of the course in VTEC 3201 and 3701. This provides a more meaningful assessment since there were previous instances where a student would complete the skills but not receive a passing grade for the course due to lack of understanding those skills. Pre-lab reading assignments from textbooks were required so students possessed a general understanding of what the lab would involve. Stringent laboratory attendance was required to ensure completion of skills. Students who successfully completed these laboratory courses performed all skills as required by the AVMA-CVTEA (American Veterinary Medical Association - Committee for Veterinary Technician Education and Activities).

As a result of these changes, in AC 2021-2022 the target was met. One hundred percent (33 of 33) of students performed all required skills and completed the courses with a passing grade.

Assessment Cycle 2021 – 2022

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2020-2021	VTEC 3201	20	20	100%
2020-2021	VTEC 3701	22	22	100%
2020-2021	TOTAL	42	42	100%

Assessment Year	Course	# Students Enrolled	# Students Performing All Documented Skills	Percent Students Meeting Measure
2021-2022	VTEC 3201	15	15	100%
2021-2022	VTEC 3701	18	18	100%
2021-2022	TOTAL	33	33	100%*

*Measure altered in AC 2021-2022

Decision. In AC 2021-2022, the target was met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The plan is to change Measure 2.2 by increasing the target to 100% of students. In VTEC 3201, check-off lists with job descriptions will be added to Moodle to ensure that students are adequately aware of the tasks that they are responsible for each day. Videos or PowerPoints will be added to Moodle to assist students with preparation for various tasks and surgeries. In VTEC 3701, more time will be devoted to ultrasound modalities during the laboratory. Students will have hands-on individualized instruction with a student-to-instructor ratio of <8:1. Documentation of each student's attainment of skills will be added as well as the requirement that each student attains the required skills and knowledge base that pertains to these skills to receive a passing grade of course completion in both courses. Attendance of each laboratory session as scheduled or by make-up sessions will be required to ensure that each student attains the required skills.

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

Assessment Cycle 2021 – 2022

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 met.

Analysis. In AC 2020-2021, the target was met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, students were provided with new pre-lab PowerPoint instruction, videos, and adjunctive material on class webpages that helped prepare them to complete the 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 evaluation of these skills and others that are used in a clinical environment.

As a result of these changes in AC 2021-2022, the target was met. Approximately ninety-nine percent (98.6%) of student skills performance was rated good-to-excellent with seventy-nine percent (79.3%) receiving an excellent rating. This was a significant increase in excellent ratings. Students in the 2021-2022 academic year received a negative rating for individual skills performance 1.4% of the time. This demonstrates that the program and curriculum are preparing students to be the productive, successful employees entering the workplace that employers desire.

Assessment Year	VTEC 2900	Excellent	Good	Poor
2020-2021	# ratings of skills performance	605	587	7
2020-2021	% ratings of skills performance	50%	49%	1%

Assessment Year	VTEC 2900	Excellent	Good	Poor
2021-2022	# ratings of skills performance	2185	532	38
2021-2022	% ratings of skills performance	79.3%	19.3%	1.4%

Decision. In AC 2021-2022, the target was met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The program instructors will invest in hands-on instruction of skills and improve upon the competency of those skills by incorporating repetition of those skills valued by employers into upper-level labs. The target for Measure 3.1 will be ninety five-percent (95%) realizing that there will be some subjective variation in evaluations done by internship sites due to the variety of clinical internship sites that the students enter.

Assessment Cycle 2021 – 2022

Measure 3.2. (Indirect – Attitude / Reliability): Each student enrolled in VTEC 2900 is evaluated by the supervisor in the veterinary 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 met.

Analysis. In AC 2020-2021, the target was met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, students were randomly assigned to surgery lab (VTEC 3201) groups so they would be forced to work with different individuals in a team effort to complete a variety of anesthesia and surgery tasks on a weekly basis. This allowed students to hold one another accountable, improved communication skills and teamwork, and required dependability/reliability from the entire group. It also allowed students to take leadership responsibilities and benefited patients by allowing for more advanced students to assist their peers with tasks that are necessary.

As a result of these changes in AC 2021-2022, the target was met. Program students during AC 2021-2022 earned minimal (3%) negative ratings from supervisors in subjective characteristics such as work-place maturity/character/integrity/ethics, reliability, teamwork, communication, *etc*. While this is an increase from 1% during the previous academic calendar, one student accounted for 4 of the 5 below average ratings in this measure. Upon speaking with the supervisor, the student's poor work ethic was the largest contributing factor to these ratings. The remainder of the students had less than 1% below average ratings. As well, there was a significant increase in the percentage of students who received above average ratings in these categories (75% in AC 2021-2022 vs 42% in AC 2020-2021). This demonstrates that most students who complete the rigorous, challenging program curriculum prior to the internship course have the morals, character, and work ethic of veterinary technicians that are valued by employers.

Assessment Year	VTEC 2900	Above Average	Average	Below Average
2020-2021	# ratings of subjective characteristics	34	46	1
2020-2021	% ratings of subjective characteristics	42%	57%	1%

Assessment Year	VTEC 2900	Above Average	Average	Below Average

2021-2022	# ratings of subjective characteristics	114	34	5
2021-2022	% ratings of subjective characteristics	75%	22%	3%

Decision. In AC 2021-2022, the target was met. Based on the analysis of the AC 2021-2022 results, in AC 2022-2023, the faculty will implement the following changes to drive the cycle of improvement. The faculty will incorporate requirements encouraging student ownership for their individual outcomes, assess students based on reliability in the care of animals, and require laboratory attendance to complete required skills in the veterinary technology curriculum. The faculty will communicate the need for quality work ethic and place a larger grading emphasis on work ethic in VTEC 3201 to minimize the chance of poor student performance at internship sites. Historically, successful completion of the program's curriculum and laboratories correlates well with their workplace performance during internships and after graduation.

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 not met.

AC 2020-2021: Slight regression. NSU graduates 64.7% pass rate over the last 3 years; national average pass rate is 74.1%.

AC 2021-2022: Improvement. NSU graduates 66.7% pass rate over the last 3 years; national average pass rate is 71.6%.

Analysis. In AC 2020-2021, the target was not met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, students were encouraged to enroll in VTEC 4200 Comprehensive Review course to help them succeed in passing the VTNE by reviewing didactic knowledge, domain structure/weighting, and using sample test questions from VTNE review books. Instructors also incorporated sample VTNE review questions into the appropriate courses that were taken by all students to ensure that they had as much understanding and exposure to examples of the VTNE as possible throughout the

curriculum. Courses were updated with new information since veterinary medicine is an ever-changing field.

As a result of these changes in AC 2021-2022, the target was not met. The expected outcome was that graduates will equal the national pass rate percentage on their first attempt at the VTNE. While NSU students did not meet this target, the NSU students' 3-year pass rate improved to 66.7% while the 3-year national pass rate regressed to 71.6%. This has significantly closed the differential between the two from 10% in 2018-2021 to 5% in 2019-2022. Additionally, NSU students had a 70% first time pass rate in AC 2021-2022 while the national first-time student pass rate was 67.7% in AC 2021-2022. While the measure was not met in a 3-year period, the fact that students did exceed the national average on an annual basis gives faculty optimism for the future.

VTNE July 2017—June 2020	Pass	Fail
NSU graduates' performance (#)	24	12
NSU graduates' performance (%)	66.7%	33.3%
National average (%)	73%	27%

VTNE July 2018—June 2021	Pass	Fail
NSU graduates' performance (#)	22	12
NSU graduates' performance (%)	64.7%	35.3%
National average (%)	74.1%	25.9%

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%

Decision. In AC 2021-2022, the target was not met. Based on the analysis of the AC 2021-2022 results and to drive improvement in AC 2022-2023, all students will be encouraged to enroll in VTEC 4200 Comprehensive Review in preparation for the VTNE. Instructors will incorporate sample VTNE questions into course material and exams as it relates to information covered in the course. Faculty will also make students aware of outside VTNE preparation courses and mock exams that are available through parish libraries which may assist with preparation for the exam. 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): Nine 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 recent 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.

Assessment Cycle 2021 – 2022

Finding. Target not met.

Analysis. In AC 2020-2021, the target was not met. Based on the analysis of the AC 2020-2021 results, in AC 2021-2022, Surgical Nursing, Dentistry, Diagnostic Imaging, Animal Care/Nursing, and Pharmacology were added as focus topics since these domains had some of the largest discrepancies relative to the national average during last year's testing cycle. Focus was placed in these areas during Animal Care and Health (VTEC 2600), Veterinary Hospital Technology II (VTEC 3200/3201), Veterinary Radiology (VTEC 2700/3701), Veterinary Clinical Pharmacology (VTEC 4090), Veterinary Technology Comprehensive Review (VTEC 4200) courses to improve knowledge and test performance. Intensive study and review were required in the comprehensive review course (VTEC 4200) as well. Sample VTNE test questions 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 2021-2022, the target was not met. However, there were improvements with students exceeding the national average for AC 2021-2022 in the domains of Pharmacy & Pharmacology, Surgical Nursing, Anesthesia, and Pain Management/Analgesia. Pharmacology and Surgical Nursing are significant in that they focus on areas for improvement from last year that now exceed the national average. Laboratory Procedures and Animal Care & Nursing are within 1.6% of the national average. Dentistry, Diagnostic Imaging, & Emergency/Critical Care domains had the largest deficits being 5-7% below the national average. However, NSU students were able to exceed the national average in every domain during at least one of the three testing cycles in AC 2021-2021. This shows that students are being exposed to the material necessary to surpass the national average, but there will be variations based upon the students that are taking the exams during different periods. New faculty within the program are also optimistic about the future since the students that were educated by the new faculty began taking the exam during the last two periods of AC 2021-2022 and those students exceeded the National Raw Total Scores in both testing cycles. They also exceeded the national average in 5-6 of the 9 domains during each of those cycles.

VTNE Domain (Official report dates changed due to COVID-19) July 15—September 15, 2020	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	68.52	72.23
Surgical Nursing	68.63	71.56
Dentistry	55.56	71.83
Laboratory Procedures	76.47	77.27
Animal Care & Nursing	70.00	73.12
Diagnostic Imaging	63.64	71.13
Anesthesia	72.73	70.75
Emergency Med/Critical Care	83.33	69.21
Pain Management/Analgesia	72.73	70.56
RAW TOTAL	70.44	72.21

Assessment Cycle 2021 – 2022

VTNE Domain (Official report dates changed due to COVID-19) October 1--December 15, 2020	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	61.1%	73.37%
Surgical Nursing	52.94%	67.96%
Dentistry	58.33%	74.62%
Laboratory Procedures	70.59%	67.20%
Animal Care & Nursing	63.33%	70.68%
Diagnostic Imaging	45.45%	68.14%
Anesthesia	67.18%	65.83%
Emergency Med/Critical Care	66.67%	67.33%
Pain Management/Analgesia	63.64%	69.61%
RAW TOTAL	62%	69.37%

VTNE Domain (Official report dates changed due to COVID-19) March 15—May 31, 2021	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	55.56%	69.58%
Surgical Nursing	55.88%	64.25%
Dentistry	62.50%	57.72%
Laboratory Procedures	50.00%	56.57%
Animal Care & Nursing	50.00%	67.43%
Diagnostic Imaging	54.55%	59.18%
Anesthesia	70.45%	72.38%
Emergency Med/Critical Care	70.83%	71.31%
Pain Management/Analgesia	68.18%	72.44%
RAW TOTAL	58.67%	66.12%

VTNE Domain AC 2020-2021	**NSU Grad. Avg. Percent Correct**	**National Avg. Percent Correct**
Pharmacy & Pharmacology	**62.96**	**71.91**
Surgical Nursing	**61.76**	**68.77**
Dentistry	**58.33**	**69.17**
Laboratory Procedures	**66.67**	**69.38**
Animal Care & Nursing	**62.22**	**71.04**
Diagnostic Imaging	**57.58**	**67.37**
Anesthesia	**71.21**	**69.76**
Emergency Med/Critical Care	**76.39**	**69.20**
Pain Management/Analgesia	**69.70**	**70.75**
RAW TOTAL	**65.11**	**69.92**

Assessment Cycle 2021 – 2022

VTNE Domain July 15— August 15, 2021	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	68.52%	71.64%
Surgical Nursing	54.90%	65.21%
Dentistry	50.00%	65.35%
Laboratory Procedures	52.94%	62.92%
Animal Care & Nursing	54.44%	67.10%
Diagnostic Imaging	72.73%	70.37%
Anesthesia	66.67%	68.31%
Emergency Med/Critical Care	75.00%	70.95%
Pain Management/Analgesia	60.61%	70.95%
RAW TOTAL	60.89%	67.30%

VTNE Domain November 15--December 15, 2021	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	70.37%	68.13%
Surgical Nursing	75.49%	70.04%
Dentistry	62.50%	66.24%
Laboratory Procedures	64.71%	60.74%
Animal Care & Nursing	65.56%	62.85%
Diagnostic Imaging	56.06%	59.49%
Anesthesia	71.21%	63.99%
Emergency Med/Critical Care	56.94%	58.10%
Pain Management/Analgesia	69.70%	70.58%
RAW TOTAL	66.67%	64.44%

VTNE Domain March 15—April 29, 2022	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	83.33%	62.09%
Surgical Nursing	88.24%	66.23%
Dentistry	75.00%	65.46%
Laboratory Procedures	70.59%	62.21%
Animal Care & Nursing	83.33%	66.71%
Diagnostic Imaging	63.64%	68.20%
Anesthesia	63.64%	63.72%
Emergency Med/Critical Care	58.33%	68.99%
Pain Management/Analgesia	81.82%	64.73%
RAW TOTAL	75.33%	65.20%

Assessment Cycle 2021 – 2022

VTNE Domain AC 2021-2022	NSU Grad. Avg. Percent Correct	National Avg. Percent Correct
Pharmacy & Pharmacology	**71.11%**	**69.17%**
Surgical Nursing	**70.59%**	**67.46%**
Dentistry	**60.00%**	**67.42%**
Laboratory Procedures	**61.76%**	**63.00%**
Animal Care & Nursing	**64.00%**	**65.64%**
Diagnostic Imaging	**61.82%**	**66.63%**
Anesthesia	**69.09%**	**65.94%**
Emergency Med/Critical Care	**62.50%**	**66.76%**
Pain Management/Analgesia	**68.18%**	**65.97%**
RAW TOTAL	**65.80%**	**66.16%**

Decision. In AC 2021-2022, the target was not met. Based on the analysis of the AC 2021-2022 results and to drive improvement in AC 2022-2023, faculty will add focused lessons in the domains of Dentistry, Diagnostic Imaging, and Emergency Medicine/Critical Care since these domains have the largest discrepancies relative to the national average during this year's testing cycle. Focus will be placed in these areas during Animal Care and Health (VTEC 2600), 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. As previously mentioned, more information on advanced imaging and radiology technique charts will be added into VTEC 3700, and case studies will be incorporated to improve comprehension of the material and apply it to similar veterinary clinical practice cases. Specifically, more time will be devoted to ultrasound modalities during VTEC 3701. An extra lab period devoted to dentistry has already been added to VTEC 3201 Veterinary Hospital Technology II Lab presenting more information on dental diseases, and new digital dental radiography equipment was recently acquired and will be incorporated into VTEC 3201 and VTEC 3701 laboratories. Potentially, improved dentistry results should be seen when the initial students with this extra lab period begin taking the VTNE during AC 2022-2023. Sample VTNE test questions relating to these domains will be incorporated into the course quizzes and exams to give students a better understanding of the testing format and material covered.

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 2021-2022. These changes are based on the knowledge gained through the analysis of AC 2020-2021 results.

- Quizzes were implemented, and individual student outcomes were monitored closely for early intervention with recommended study groups and/or tutoring or time spent with instructors during office hours, referral for individual counselling, and encouragement to spend the necessary time with the study material.

- Measures 1.2 and 2.2 were changed to require completion of all essential skills associated with the lab and passing exams with a 70% average to achieve the measure.
- PowerPoint presentations and videos were available for students to review prior to the lab period. Pre-lab quizzes were used to ensure that students reviewed the material and came to lab prepared in VTEC 1031 relating to Measure 1.2.
- PowerPoint instruction, videos, adjunctive material on class webpages, and prelab reading assignments helped prepare students to complete the essential skills in Measures 1.2 and 2.2 as required by the AVMA-CVTEA.
- The course modality for VTEC 2060 was changed from online to in-person. There was restructuring of the material covered in VTEC 2060 and 3010 to enhance comprehension. The disease chart for organization of information was introduced in VTEC 3010. Case studies and calculations were utilized in VTEC 3200, and PowerPoints were updated and refined in VTEC 3700. These changes affected Measure 2.1
- Students were randomly assigned to VTEC 3201 surgery lab groups so they would work with different individuals to promote leadership and teamwork to complete a variety of anesthesia and surgery tasks on a weekly basis.
- Stringent requirements for laboratory attendance and completion of skills to earn a passing grade were required. Students who successfully completed these laboratory courses performed all skills as required by the AVMA-CVTEA (American Veterinary Medical Association - Committee for Veterinary Technician Education and Activities).
- Focused lessons in the domains of Surgical Nursing, Dentistry, Diagnostic Imaging, Animal Care/Nursing, and Pharmacology were added to various courses. There were improvements in NSU student VTNE test scores relative to the national average. They also exceeded the national average for AC 2021-2022 in the domains of Pharmacy & Pharmacology, Surgical Nursing, Anesthesia, and Pain Management/Analgesia and had raw total scores that exceeded the national average in two of the three testing cycles.

Plan of Action Moving Forward:

- Quizzes will be adjusted to promote class attendance and regular review of the material.
- Cases will be added and discussed in VTEC 1030 to promote student interaction.
- There will be further reordering of material within VTEC 1030 lecture to coincide with the material covered in the VTEC 1031 laboratory.
- Students will have a list of supplies and equipment that they are responsible for being able to identify on the exams in VTEC 1031 laboratory.
- Students will have hands-on individualized instruction with a student to instructor

ratio of <8:1, documentation of each student's attainment of skills, and the requirement that each student must attain the required skills to receive a successful grade of course completion.

- Attendance of each laboratory session as scheduled or by make-up sessions will be required to ensure that each student attains the required skills.
- Early intervention will be established for students that score <65% on the initial exam in all courses.
- Students with a course average of <70% at midterm in all courses will be contacted to recommend a meeting with the instructor during office hours to discuss problems and devise a plan to enhance student success.
- Increased practice problems for homework will be assigned in VTEC 2060.
- A proposal to the Curriculum Review Committee will be submitted to add VTEC 2090 Anatomy & Physiology as a prerequisite for VTEC 2600 Animal Care & Health.
- The disease chart will be expanded in VTEC 3010 Diseases of Animals
- Increased time will be devoted to Pain Management and a chart will be introduced to organize drugs, drug classes, and their purposes in VTEC 3200 Veterinary Hospital Technology II.
- New digital dental radiology equipment will begin being utilized by students in VTEC 3201 and VTEC 3701 laboratories allowing students to receive immediate feedback on dental imaging without the need for dental film processing.
- Instruction on advanced imaging techniques and radiology technique charts will be expanded in VTEC 3700 Veterinary Radiology. Case studies will also be included.
- Videos of lectures will be posted for student review, as necessary, in most classes.
- Measure 2.2 will be changed to require 100% of students to average 70% or higher in the course and demonstrate the required technical skills.
- Increased time in VTEC 3701 Veterinary Radiology Lab will be devoted to ultrasound imaging.
- Program instructors will invest in hands-on instruction of skills and improve upon the competency of those skills by incorporating repetition of those skills that are valued by employers of graduates into upper-level labs.
- Faculty will incorporate requirements encouraging student ownership for their individual outcomes, assess students based on reliability in the care of animals, and require attending labs to complete required skills in the veterinary technology curriculum.
- Faculty will add a focused lessons in the domains of Dentistry, Diagnostic Imaging, and Animal Care/Nursing since these domains have the largest discrepancies relative to the national average during this year's testing cycle. Focus will be placed in these areas during Animal Care and Health (VTEC 2600), Veterinary Hospital

Technology II (VTEC 3200/3201), and Veterinary Radiology (VTEC 2700/3701) to improve knowledge and test scores.

- Instructors will incorporate sample VTNE review questions into the appropriate courses that are taken by all students to ensure that they have as much understanding and exposure to examples of the VTNE as possible throughout the curriculum.
- Students will be made aware of VTNE prep courses and resources outside the curriculum.
- 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.