SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
ACADEMIC AFFAIRS
COMMITTEE RECOMMENDATION

SUMMARY

Lake Area Technical College

Substantive Program Application

Associate of Applied Science

Natural Resources Management

COMMITTEE RECOMMENDATION

The Committee on Academic Affairs and Institutional Effectiveness ("Committee") met on 3/10/2025 to consider the merits of the above application. After review, the Committee makes the following action recommendation to the Board of Technical Education:

☒ Approval
☐ Disapproval
☐ Deferral
☐ Other:

PROGRAM DESCRIPTION

Institution	Lake Area Technical College
Program Identifier Code (If applicable)	
Program Title	Natural Resources Management
Program Award Level: Check all that apply	☐ Short-Term Certificate ☐ Long-Term Certificate ☒ Diploma ☒ Associate of Applied Science
CIP Code (6 Digit)	3.0101
Projected Implementation Date	8/18/2025
Location	☒ Main Campus ☐ Other:

SUMMARY

Type of Substantive Change	☐ New Program (B.1.1) ☒ Significant Curriculum Modification (B.1.2) ☐ Other:

Describe the change the institution is seeking approval of.

Lake Area Technical College (LATC) seeks approval for a curriculum modification to its current Natural Resources Management (NRM) program. Last year, LATC renamed its Environmental Technology program *Natural Resources Management* and made minor curriculum changes to begin shifting the program's focus. LATC is now ready to complete a more comprehensive overhaul of this program's curriculum to better meet industry needs for professionals working in the natural resources field.

LATC proposes a 28% curriculum change by adding classes to better prepare graduates for careers in fisheries, wildlife, land management, and conservation. These curriculum changes also include the addition of Agriculture classes. According to the industry partners LATC has worked closely with on this curriculum update, NRM and Agriculture are heavily reliant on each other in our state and region. By moving our NRM program under the Agriculture umbrella at LATC, we will better prepare our graduates for success in the workplace.

CRITERION 1: MISSION

The program aligns with the system's mission and strategic priorities.

1.1. The program aligns with the system's mission of preparing a technically skilled workforce prepared to serve the state of South Dakota and its regions.
1.2. The program aligns with the system's strategic priorities.

1.1. Describe how the proposed program aligns with the system's mission.

The mission of Lake Area Technical College, as part of the South Dakota Technical College System, is to provide superior, comprehensive technical education that changes lives and launches careers. The structure of LATC's proposed Natural Resources Management program ensures students can complete a college degree that aligns with industry expectations while still remaining affordable.

As we seek to more closely align our NRM program with the LATC Agricultural programs, in essence we will be modeling the mission of the South Dakota Department of Agriculture and Natural Resources which works to help build a South Dakota community filled with a prosperous economy, diverse agricultural opportunities, clean air, clean water and healthy families.

This new program alignment will match expanded regional industry expectations, employment obtainability, and government grants and funding sources, while preserving agriculture and protecting the environment and natural resources through regulation and technical services. Redirecting our NRM program outcomes and mission to meet these standards will technically, fiscally and culturally strengthen our program.

CRITERION 2: DEMAND

The program leads to meaningful employment, adequate student enrollment, and/or fulfills needs not being met by existing education and training providers.

2.1. The program leads to high-wage occupations that have an average/mean wage greater than the median wage across all occupations.
2.2. The program leads to high-demand occupations that have project annual openings (a measure of demand for workers) greater than the average across all occupations or is shown as an economic and/or labor market emerging field for the state of South Dakota and its regions.
2.3. The program's student enrollment is adequate to justify program existence.
2.4. The program fulfills a demand not being met by existing education and training providers in the region and/or state.

2.1. Describe the wage projections for occupations associated with the proposed program by completing Appendix 2.A.

2.2. Describe the demand projections for occupations associated with the proposed program.

A. Complete Appendix 2.A.

B. If an emerging field for the state of South Dakota, describe the field. Letter(s) of support, detailing demand, should be attached as appendices.

As our Letters of Support indicate, the Natural Resources Management field is rapidly expanding as agriculturalists and environmentalists seek to work as partners in protecting and preserving our land, water and wildlife resources. These newly developed industry collaborations are a positive move toward honoring South Dakota's Ag-based heritage while balancing care for our ecosystems with proven practices.

2.3. Describe projected student enrollment for the proposed program by completing Appendix 2.B.

2.4. Describe how the proposed program fulfills a demand not being met by existing education and training providers in the region and/or state.

A. Identify closely related program(s) that currently exist at other public higher education institutions in the system or state. If none, write "None."

SDSU has a few degrees options in this content area –

- Conservation Planning and Park Management (B.S.)
- Wildlife and Fisheries Sciences (B.S.)

Additionally, LATC has current or in-process articulation agreements with the following college and university Natural Resources Management programs. After graduating with an AAS degree from LATC, students may continue their education by attending any of the following institutions and earn a Bachelor's Degree within 2 years. (Note explanation in Appendix 4.2):

- South Dakota State University: Ecology and Environmental Science Major – Environmental Science Emphasis
- Minnesota State University Moorhead: Operations Management
- Mount Marty: Bachelor of Arts – Applied Technology Management

B. If applicable: Describe the ways in which the demand is not currently being met by the aforementioned program(s) and provide justification as to why the program should be approved by addressing the following conditions that warrant duplication (BP 303.2). Select all that apply.

☒ Unmet Demand (C.5.1.1)
☒ Industry Partnership (C.5.1.2)
☐ Increases Student Access (C.5.1.3)
☐ Other:

I. For each condition selected above, provide a brief justification.

Unmet Demand:

Natural Resources Management careers are wide-ranging and encompass employment in many aspects of South Dakota and regional conservation activities. Whether preserving our agricultural heritage or protecting the environment, these positions seek to expand crops and yields, improve management practices of land and water resources, protect wildlife and fisheries habitats or educate the public on regulatory guidelines. As such, the listed careers range from agronomists to zookeepers to soil scientists to foresters to water quality environmental engineers to Natural Resources Conservation Services technicians.

The following employment websites, reveal 172+ unduplicated Natural Resources Management careers presently available in South Dakota with salaries ranging from $45,000 - $65,000 for Technicians (Diploma) and $78,000 - $125,000 for Specialists (AAS degree or higher):

1. 53 employment listings in SD on *Zip Recruiter*, including:
    a. Biological Service Technician
    b. SD Habitat Specialist
    c. Park Ranger
    d. Environmental Engineer – Water Quality
    e. Urban Forestry
    f. Fish and Feather Nature Recreation Center
    g. Corporate Health and Safety Manager

2. 65 employment listings in SD on *Linked In,* including:
    a. North Central Regional Irrigation positions
    b. Poet Specialists – Lab and Plant Operators
    c. Biological Technicians
    d. Agronomists
    e. Soil Technicians

3. 43 employment listings on *Indeed*, including:
    a. Waste Water Testers
    b. Feed Consultants
    c. Buffalo Herdsmen
    d. Wild Life Technicians
    e. Field and Water Quality Managers
    f. Environmental Project Managers
    g. Grassland Ecologists

4. 11 Natural Resources Conservation Services positions are listed in the following areas:
    a. Soil Conservationists
    b. Rangeland Manager Specialist
    c. Management and Program Analyst
    d. Biologists
    e. Economists
    f. Cultural Resource Specialist

   g. Wildlife Damage Specialist
5. The SD Department of Agriculture and Natural Resources website allows individuals to apply for positions in the following six categories:
   a. Engineers
   b. Environmental Scientists
   c. Agronomists
   d. Policy and Communication
   e. Foresters
   f. Maintenance

Industry Partnerships:

Established industry partnerships include Blue Dog Fish Hatchery at Game Fish and Parks. They formed agreements to work with the LATC NRM department to better prepare students through hands-on population management and fisheries cultural practices. Blue Dog Fish Hatchery plans to supply LATC with more tanks, special equipment, fish feed, and certain fish species to help enhance the NRM curriculum and give students the opportunity to apply live fisheries management strategies.

Other NRM industry partnerships include planting shelter belts for local farms, city and county-wide tree planting, water quality testing for various regional industries and park ranger training for SD Game, Fish and Parks.

Whether collaborating with Natural Resources Conservation Services or SD Game, Fish and Parks, or Ducks Unlimited or SD Department of Agriculture and National Resources, the LATC Natural Resources Management students are poised to manage precious ecosystems in our state and region, educate constituents on programs and practices, and utilize data and information for the betterment of our natural resources.

CRITERION 3: DESIGN

The program's learning assessment strategy, program of study, and delivery methods are designed to provide students with the necessary competencies, as demonstrated through program learning outcomes.

3.1. The program is aligned to competencies, as demonstrated through program learning outcomes, that are developed with and continually validated by relevant stakeholders.
3.2. The program has a learning assessment strategy to validate student mastery of the program learning outcomes.
3.3. The program has an integrated program of study designed to develop and reinforce the program learning outcomes.
3.4. The program, when appropriate, includes a work-based learning component that develops and reinforces the program learning outcomes.
3.5. The program, when appropriate, offers flexible delivery methods to increase student access.

3.0. Describe the proposed program's alignment with the program award level requirements established in BP 301.1.

A. Does the program align with the requirements?

☒ Yes
☐ No (Requesting Exemption)

B. If no: Provide a detailed rationale for program exemption. Specify which requirement(s) in BP 301.1 are not met; cite specific policy sections (e.g., B.3.4), when appropriate. If external organizations are involved (accreditation, regulatory, licensure, etc.), reference the organization name(s), specific requirements (including citations), and a justification for why the exemption should be approved.

3.1. Describe the program learning outcomes.

A. Provide a list of program learning outcomes for each proposed award level. Learning outcomes should be specific to the program.

1. Identify key plant and animal species within the environment.
2. Collect, interpret, and communicate natural resources field data and scientific data.
3. Apply conservation practices to the ecosystem.
4. Identify and analyze societal factors that impact natural resources issues.
5. Effectively and safely manage land, air, and water resources.

B. Describe the how the program learning outcomes were developed and validated.

Program learning outcomes were developed and validated by LATC faculty and administrative staff. Next, the program outcomes were thoroughly discussed and revised by NRM advisory board members and industry partners within South Dakota. Industry members, including SD Game Fish and Parks, provided input on the skills, technical abilities, and concepts necessary to work as a resource biologist or technician/specialist within the agency.

3.2. Describe the program's learning assessment strategy.

A. Describe how students will demonstrate mastery of the program learning outcomes. Description should be specific to the program's learning assessment plan vs. the institutional assessment plan.

All courses will contain assessment components. The assessments will be comprised of skills assessments, as well as formative and summative assessments both in the classroom and field setting.

All program courses leading to the degree will require a pass rate of at least 80% mastery. Post-graduation surveys conducted by employers and the college's placement report also help to determine the success of the program's graduates.

All LATC programs use SPOL assessment software to map curriculum and gather assessment data throughout the year. Annually, each department analyzes the assessment data. In addition, under the guidance of our Academics Department, each program creates an assessment and improvement plan annually.

B. Is the program preparation for a professional licensure and/or certification examination?

☐ Yes (Detail in Appendix 4: Section 3)
☒ No

3.3. Describe the program of study by completing Appendix 3.

3.4. Describe the program's work-based learning component.

A. Does the program have a work-based learning component? If so, select all that apply.

☐ None
☐ Apprenticeship
☒ Internship or Externship
☐ Clinical
☒ Capstone
☐ Other:

B. If none, describe why.

3.5. Describe the program's delivery methods.

A. Select the program's primary delivery method(s)[1]. Select all that apply.

☒ On Campus
☐ Online
☐ Blended
☒ Apprenticeship
☐ Other:

B. Describe how flexible delivery methods are being leveraged to increase student access.

In Fall, 2024, the NRM Advisory Board was reorganized and expanded to include a better representation of the various careers found within the range of Natural Resources Management employment areas. During the meeting, the new board members and program director reviewed the NRM Diploma option. Students can exit the program with a diploma after they have completed their first two semesters of coursework and a summer internship. This optional diploma exit point provides flexibility for nontraditional students or students who are ready to launch their working careers as Technicians. Students who desire an AAS degree can continue with a second year of coursework to work in NRM careers as Specialists. The NRM Advisory Board will review the Diploma degree in the Fall of 2025 and vote on whether or not to continue that option.

[1] ***In Person****:* 100 percent of courses are available in-person. ***Online:*** 100 percent of courses are available via distance learning. Delivery is only via the Internet. ***Blended****:* Delivery includes a required combination of both in-person and online courses. If a student has the option to take courses online, but is not required to do so, the program is not necessarily considered blended.

The primary delivery method for this program will continue to be on campus. We plan to offer face-to-face instruction with both full-time and part-time student pathways. Providing these two pathways will allow our program to meet the needs of both traditional and non-traditional students.

The NRM training is highly hands-on, and much of the skill practice takes place in the field. For this reason, the program does not lend itself to an online or blended format at this time. However, after implementing the new curriculum for a few years, LATC is likely to reevaluate to test if a blended delivery method is feasible.

CRITERION 4: ALIGNMENT

The program is vertically aligned to an education and training pathway.

4.1. The program is vertically aligned to an education and training pathway, reflecting efficient articulation of:
4.1.1. Non-degree credential/industry certification
4.1.2. Certificate to diploma
4.1.3. Diploma to associate of applied science
4.1.4. Associate of applied science to baccalaureate

4.1. Describe the alignment of the proposed program along an education and training pathway.

A. Complete Appendix 4.

B. Describe the projected alignment between the proposed program and existing academic programs within the technical college system.

The NRM curriculum aligns well with LATC's Conservation Law Enforcement Certificate. Nine credits in the NRM curriculum are also included in the 12-credit Conservation Law Enforcement Certificate.

The NRM curriculum also aligns well with LATC's Agriculture options. There are 27 shared credits between NRM and the Livestock Production and Management AAS curriculum, 24 shared credits between NRM and the Agri-Business AAS curriculum, and 21 shared credits between the NRM and the Agri-Production AAS curriculum.

C. As applicable: Insert any additional comments here.

CRITERION 5: CAPACITY

The institution demonstrates the internal and external resources necessary to develop, implement, and sustain the program.

5.1. The institution demonstrates the financial resources necessary to develop, implement, and sustain the program.
5.2. The institution demonstrates appropriately certified and qualified faculty are in place with expertise in content, pedagogy, and related industry to develop and validate the program learning outcomes.
5.3. The institution's physical facilities (e.g., classrooms, laboratories) reflect current industry and/or occupational standards necessary to develop and validate the program learning outcomes.
5.4. The institution's equipment and technology resources reflect current industry and/or occupational standards necessary to develop and validate the program learning outcomes.
5.5. The institution demonstrates the ability of the program to meet institutional and programmatic accreditation standards, as applicable.

5.1. Describe the institution's financial capacity to develop, implement, and sustain the proposed program.

A. Complete Appendix 5.

B. Describe the proposed program's anticipated local fee structure. Description of fee structure should be specific to the program.

ESTIMATED STATEMENT OF TUITION AND FEES/FULL-TIME STUDENTS
2024 - 2025

Program: Associate of Natural Resource Management

	Fall Semester	Spring Semester	Summer Semester	Fall Semester	Spring Semester
Credits^	16	17	5	18	15
Tuition	1,984.00	2,108.00	620.00	2,232.00	1,860.00
State Funding Fee	576.00	612.00	180.00	648.00	540.00
Departmental Fee	680.00	680.00	175.00	680.00	680.00
Campus Support Fee	240.00	255.00	50.00	270.00	225.00
State & Local M&R Fee	112.00	119.00	35.00	126.00	105.00
Total	3,592.00	3,774.00	1,060.00	3,956.00	3,410.00
Estimated textbook expense:	400.00			400.00	
Laptop**	975.00				
Totals:		9,801.00			7,766.00

** Students are required to use a wireless laptop and are eligible to purchase a laptop through the LATC STAX Bookstore.
These costs are estimates.

C. What is the proposed program weight factor (funding formula)?

☒ Standard Cost (1)
☐ High Cost (3)
☐ High Cost, Low Density (5)

I. Provide rationale related to the selection of proposed program weight factor.

LATC's Natural Resources Management program is currently a Standard Cost program. The curriculum updates proposed here will not change the program weight factor.

D. Describe the contingency plans in case anticipated enrollments, income, or resources do not materialize.

Due to enrollments trending down since 2021, Lake Area Tech has worked to rekindle industry connections and update the Natural Resources Management Program. To mitigate duplication of efforts and resources across programs, NRM and Agriculture now share some courses and faculty. The college will continue to provide support for the program and assess enrollments and revenues as the program rebuilds over the next three years. Accepted students for the 2025-26 school year are on a good track to increase enrollments in the program starting next fall already.

5.2. Describe how the institution will ensure the appropriate certified and qualified faculty are in place with the expertise in content, pedagogy, and the related industry to develop and validate the program learning outcomes.

A. Describe the necessary qualifications of faculty who will be involved in the program.

The faculty qualifications will align with the current credentialing policy for Lake Area Technical College, which is a baccalaureate degree from a four-year accredited institution or an Associates of Applied Science degree in a Natural Resources field with equivalent work experience. Preference will be given to candidates with a Master's Degree in NRM and relevant field experience. Criminal background checks precede the credentialing process and must be considered as part of the hiring process. Lake Area Tech adheres to the Higher Learning Commission's criterion on highly qualified faculty.

B. Does the instructorship(s) currently exist in the roster of Instructor Salary Support market value determinations?

☒ Yes
☐ No

I. If no: Describe the SOC(s) codes and titles that will need to be added.

5.3. Describe the existing and/or new physical facilities that will be utilized or needed to reflect current industry and/or occupational standards. Outline short- and long-term investments in physical facilities.

The NRM program's current facilities will continue to work well for the updated program. There are both traditional and lab classrooms set up for this program that meet the needs of this program.

5.4. Describe the existing and/or new equipment and technology resources that will be utilized or needed to reflect current industry and/or occupational standards. Outline short- and long-term investments in equipment and technology resources.

Current equipment includes tanks, filters, microscopes, and other small instruments for testing soil, water, and air quality. Blue Dog Fish Hatchery with SD Game Fish and Parks reached out to LATC a few months ago about a desire to work with the NRM department to better prepare students through hands-on population management and fisheries culture practices. Blue Dog Fish Hatchery plans to supply LATC with more tanks, special equipment, fish feed, and certain fish species to help enhance the NRM curriculum and give students the opportunity to apply real fisheries management strategies.

Long-term investments would include the potential purchase of an ATV, water tanks and PPE. With those purchases, the students will complete the requirements to become Wildland Firefighter Certified. With assistance from the LATC

Med Fire Rescue program and by accessing the North School Farm in the Agriculture program, the NRM students will learn to safely operate all equipment, properly wear PPE, navigate weather instruments and follow communication protocols.

5.5. Describe the institution's and proposed program's ability to meet institutional and programmatic accreditation standards, as applicable.

A. Specify Higher Learning Commission (HLC) requirements.

☒ Notification Only
☐ Approval Required
☐ None
☐ Other:

B. Is there an accrediting or professional organization that has established standards for the program?

☒ Yes
☐ No

C. If yes: Describe the ability of the proposed program to meet professional accreditation standards. If the program does not or cannot meet those standards, describe the area(s) in which it is deficient and indicate steps needed to qualify the program for accreditation. Provide the date by which the program would be expected to be fully accredited.

If the institution does not plan to seek specialized accreditation, provide a rationale for not seeking.

The North American Wildlife Technology Association accredits AAS programs in the area of Natural Resources Management. LATC's proposed NRM curriculum comes very close to meeting the curriculum requirements for that accreditation. To comply with the accreditation requirements, LATC's NRM program would need to add content covering hunter and boating safety, necropsy and biopolitics. It is possible that the LATC program could seek accreditation in the Fall of 2027, pending these additional updates.

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 2.A: Labor Market Information

Lake Area Technical College
A.A.S. in Natural Resources Management

SOUTH DAKOTA

SOC* CODE	SOC* TITLE	AVERAGE ANNUAL OPENINGS	2023 EMPLOYMENT	2033 EMPLOYMENT	NUMERIC CHANGE: 2023-2033	PERCENT CHANGE: 2023-2033	MEDIAN: ANNUAL WAGE (2023)	AVERAGE: ANNUAL WAGE (2023)
00-0000	*Total, All Occupations*	*62,664*	*491,588*	*526,251*	*34,663*	*7.1*	*$36,823*	*$44,961*
19-1031	Conservation Scientists-DLR & Lightcast	39	441	468	27	6.12%	$59,010.00	$64,200.00
19-4071	Forest and Conservation Technicians-DLR & Lightcast	51	407	417	10	2.46%	$46,700.00	$51,450.00
45-4011	Forest and Conservation Workers-DLR	136	743	769	26	3.50%	$36,510.00	$36,550.00
	Environmental Compliance Specialists-Lightcast	1,023	16				$ 65,884.00	

NATIONAL

SOC* CODE	SOC* TITLE	AVERAGE ANNUAL OPENINGS	2023 EMPLOYMENT	2033 EMPLOYMENT	NUMERIC CHANGE: 2023-2033	PERCENT CHANGE: 2023-2033	MEDIAN: ANNUAL WAGE (2023)	AVERAGE: ANNUAL WAGE (2023)
19-1031	Conservation Scientists-BLS	3,900	41,400	43,300	1,900	6%	$ 68,300.00	$ 73,160.00
45-4011	Forest and Conservation Workers-BLS & O*Net	2,100	10,900	10,500	-400	-4%	$ 33,940.00	not listed
	Natural Resources Conservation Services Job Postings							
	Natural Resource Specialist							Salary Range $86,962-$117,759
	Soil Conservationist							Salary Range $72,553 - $94,317

SOURCE: South Dakota Department of Labor and Regulation, Labor Market Information Center (LMIC) (https://dlr.sd.gov/lmic/)
DATE: 12/26/2024

NOTES:

SOURCE: O*Net Online https://www.onetonline.org/link/localtrends/19-1031.00?st=SD
DATE: 12/26/2024

NOTES:

SOURCE: Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_stru.htm
DATE: 12/26/2024

NOTES:

SOURCE: NRCS U.S. Dept of Agriculture https://www.nrcs.usda.gov/jobs
DATE: 01/08/2025

NOTES: *We accessed the NRCS job postings board to also show additional jobs within the Natural Resources Management field.*

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 2.B: Student Demand Projections

Lake Area Technical College
A.A.S. in Natural Resources Management

	YEAR 1	YEAR 2	YEAR 3
Student Full-Time Equivalent (FTE)	**13**	**25**	**32**
Headcount: Full-Time	10	20	26
Headcount: Part-Time	2	2	2
Headcount: Total	**12**	**22**	**28**
Total Program or Site Capacity	36	36	36

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 3: Program of Study

Lake Area Technical College
AAS in Natural Resources Management

MONTHS:	20
SEMESTERS:	4 semesters, and 1 summer session
TOTAL CREDITS:	71

PREFIX AND NUMBER	TITLE	CREDITS	DESCRIPTION	EXISTING COURSE
I. GENERAL EDUCATION CORE				
COMM 101 or ENGL 101 or CMST 101	Communications and Career Strategies, Composition, Foundations of Communication	3	**COMM 101** – Emphasis on the essentials of written and oral communication; also covers effective communication during the job search process. **ENGL 101** – This course concentrates on all phases of the writing/ communication process. Prewriting, drafting, revising and editing are used to help students develop clear, concise and unified writing styles that will serve them well in their chosen career areas.*College transferable. **CMST 101** - The course introduces the study of speech fundamentals and critical thinking through frequent public speaking practice, including setting, purpose, audience, and subject. *College transferable.	Y
Econ 105 or SOC 100	Leadership in the Global Workplace, Introduction to Sociology	3	E**CON 105** - The study of traditional theories of leadership, as well as the most recently developed leadership philosophies. This course will focus on the application of leadership concepts through critical thinking and the development of critical leadership skills needed in the global workplace. Leadership traits, ethics, changing demographics, workforce diversity, and financial planning are also included. Upon successful completion of this course, the student will be able to relate to the importance of leadership both personal and professional. **SOC 100** - Comprehensive study of society, with analysis of group life and other forces shaping human behavior. *College transferable.	Y
PSYC 100 or PSYC 101	Psychology of Human Relations, General Psychology	3	**PSYC 100**-Human relations is a practical course that presents the interpersonal "people skills" that are important in the modern workplace. Topics include communicating effectively, assertive behavior, teamwork, conflict resolution, and work ethics. Students will gain awareness of their individual work styles and how to work effectively with people with different styles in a diverse workplace. Specific techniques for coping with job stress and managing anger will also be emphasized. Class activities and assignments will stress practical application of skills. Course is also applicable in personal settings, such as family, social, and school. **PSYC 101**-This course is an introduction survey to the field of psychology with consideration of the biological bases of behavior, sensory and perceptual processes, learning and memory, human growth and development, social behavior and normal and abnormal behavior. *College transferable.	Y
MATH 100 or MATH 101 or MATH 114	Applied General Math, Intermediate Algebra, College Algebra	3	**MATH 100** - This course will provide emphasis on the ability to understand and apply math skills to solve problems in the world of work. **MATH 101** - This course will enhance students' problem-solving skills and prepare them for mathematical problems to be faced in future courses and careers. **MATH 114** - This course includes a study of the theory and application of functions, including function notation, graphs, inverses, polynomial, rational, exponential, logarithmic, and other functions. May also include additional topics, such as sequences, series, the binomial theorem, linear systems, matrices, or complex numbers. *College transferable.	Y
CSC 102	Windows Applications for Technicians	3	Using a Windows-based computer and related software, students will gain a basic operational knowledge of the Windows operating system, Microsoft Office 2021, word processing, spreadsheet, and presentation software.	Y
SUBTOTAL OF GENERAL EDUCATION CREDITS:		**15**	**TOTAL NEW COURSES:**	**0**
II. PROGRAM CORE				
NRM 100	Introduction to Natural Resource Management	3	This course provides an overview of the different types of natural resource management. Topics include water, soil, and air resources, fish and wildlife conservation, and outdoor recreation management. Students will explore advanced natural resource management concepts and management practices.	N

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 3: Program of Study

Lake Area Technical College
AAS in Natural Resources Management

AGR 105	AG Safety	1	Agriculture is a very diverse industry, encompassing all sorts of jobs, opportunities, and potential safety hazards. This class is designed to provide students with some basic knowledge in regards to being safe in many agricultural settings, as well as provide information about different rules, regulation, and rights employees have in terms of their safety and well-being.	Y
AG 100	Soil Science	3	This course is an overview of soil and how we may manage a piece of land properly. Students will study glacial development of soil, structure, texture, soil type, soil chemistry, organic matter, and practices that will improve and protect the soil. The challenge will be to improve the soil over the long-term. Recently the ag society started to use methods by which soils were maintained or improved, implemented recommendations made by agronomists and trained agriculturalists how to use them on a farm or ranch.	Y
AGR 251	Introduction to Range/Plant Management	2	This course will cover the basic principles of range management, which includes plant identification, range evaluation, and range improvements.	Y
NRM 115	Environmental Studies and Botany	4	This course combines the study of botany with practical habitat management strategies. Students will learn techniques to identify common plants within the Midwest and to manage grassland ecosystems. Emphasis will be placed on understanding fire ecology, controlled burn techniques, and working with private land owners.	Y
LE 204	Wildlife & Fisheries Identification and Management	3	This course focuses on the identification of fish and wildlife species commonly found throughout the Midwest. Students will learn to recognize key species and understand their ecological role. This course also explores basic wildlife and fisheries management strategies	N
NRM 125	Introduction to Wildlife Fisheries	3	This course introduces management strategies for wildlife and fisheries in the Midwest, with an emphasis on game population management and overall ecosystem health. Students will also learn how to engage with the public and work effectively with hunters, anglers, and other community members.	N
NRM 105	Biological Principles	2	This course includes the study of basic concepts and practices involved in natural resource management, as well as applying that knowledge in critical thinking and problem solving.	Y
AGR 118	Soil and Water Management	3	Topics include water quality, the relationship between soil and water, identification of water sources, and South Dakota law affecting water usage.	Y
NRM 220	Introduction to Wildlife and Fisheries Laws and Policies	3	This course examines wildlife and fisheries laws and policies within the Midwest, with a focus on their historical development, current regulations, and ethical considerations. Special emphasis will be placed on laws and policies related to game species of wildlife and fish.	Y
NRM 155	Internship I	5	This experience requires 300 hours (seven weeks) of working within a natural resource management agency.	Y
NRM 200	Ecology	3	This course examines advanced principles of ecology, focusing on the interactions between organisms and their environment. Students will explore topics including population dynamics and environmental sustainability.	Y
NRM 205	Geography	4	This course explores basic geographic principles and practices with a focus on natural resource management and biogeography. Students will develop skills in navigation techniques and gain an introductory understanding of GIS (Geographic Information Systems).	Y
AGR 262	Precision AG/Data Collection	2	Precision Ag Data Collection prepares students in the use of software applications in agriculture. Students will use mobile and desktop application to analyze, manipulate, and create data used in the production agriculture industry.	Y
LE 201	Parks and Habitat Management	3	This course examines the principles and practices of managing state and national park systems, focusing on outdoor tourism and park management strategies. Students will also examine and engage in science communication and learn methods for involving youth in conservation programs.	N
NRM 210	Permits and Grant Writing	1	This is an introductory course of basic permits and grant writing currently used in government and industry related to natural resource management.	Y
AGR 266	Farm Construction	2	All production farms rely heavily on structures to house livestock, equipment, and stored commodities. The purpose of this class is to familiarize students with the basics in safety, working with power tools and general carpentry work.	Y
NRM 225	Statistics	1	This course is a study of descriptive and inferential statistics, especially related to research problems in natural resource management.	Y
NRM 230	GIS & Environmental Health	3	This course focuses on developing advanced practices of GIS (Geographic Information Systems) related to environmental and ecosystem health. Emphasis will be placed on data related to natural resources management.	N
NRM 235	Internship II	3	This experience includes180 hours of working within a natural resource management agency.	Y

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 3: Program of Study

Lake Area Technical College
AAS in Natural Resources Management

NRM 240	Capstone Project	2	This course is a self-study project demonstrating the educational and personal development received at Lake Area Tech. Credit assigned by instructor.	Y
SUBTOTAL OF PROGRAM CREDITS:		**56**	**TOTAL NEW COURSES:**	**5**

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 4: Alignment Projection

Lake Area Technical College
A.A.S. in Natural Resources Management

TOTAL CREDITS IN PROPOSED PROGRAM:
71

I. STACKABLE OPPORTUNITIES

PROGRAM NAME					If Forthcoming: Projected Timeline	Total Credits in Stackable Program	How many PROPOSED PROGRAM credits are in this stackable program opportunity?
Conservation Law Enforcement Certificate		Short-term Certificate	x	Existing			
	x	Long-term Certificate		Forthcoming			
		Diploma					
		AAS				12	9
PROGRAM NAME		Short-term Certificate	x	Existing	If Forthcoming: Projected Timeline	Total Credits in Stackable Program	How many PROPOSED PROGRAM credits are in this stackable program opportunity?
Agriculture - Agri-Production Option		Long-term Certificate		Forthcoming			
		Diploma					
	x	AAS				76	21
PROGRAM NAME		Short-term Certificate	x	Existing	If Forthcoming: Projected Timeline	Total Credits in Stackable Program	How many PROPOSED PROGRAM credits are in this stackable program opportunity?
Agriculture - Agri-Business Option		Long-term Certificate		Forthcoming			
		Diploma					
	x	AAS				77	24
PROGRAM NAME		Short-term Certificate	x	Existing	If Forthcoming: Projected Timeline	Total Credits in Stackable Program	How many PROPOSED PROGRAM credits are in this stackable program opportunity?
Agriculture - Livestock Production and Management Option		Long-term Certificate		Forthcoming			
		Diploma					
	x	AAS				73	27

II. ARTICULATION AGREEMENTS (BACCALAUREATE)

PROGRAM NAME	COLLEGE OR UNIVERSITY			If Forthcoming: Projected Timeline	Total Credits in Bachelor's Degree	How many PROPOSED PROGRAM credits are projected to be accepted in the articulation agreement?
Ecology and Environmental Science (B.S.)	South Dakota State University *	x	Existing			
			Forthcoming			
					120	36
PROGRAM NAME	**COLLEGE OR UNIVERSITY**	x	Existing	If Forthcoming: Projected Timeline	Total Credits in Bachelor's Degree	How many PROPOSED PROGRAM credits are projected to be accepted in the articulation agreement?
Applied Technology Management (B.A.)	Mount Marty College		Forthcoming			
					128	up to 64
PROGRAM NAME	**COLLEGE OR UNIVERSITY**	x	Existing	If Forthcoming: Projected Timeline	Total Credits in Bachelor's Degree	How many PROPOSED PROGRAM credits are projected to be accepted in the articulation agreement?
Operations Management (B.S.)	Minnesota State University, Moorehead		Forthcoming			
					120	up to 48

**This agreement is being updated.*

III. LICENSURE AND CERTIFICATION OPPORTUNITIES

The PROPOSED PROGRAM will qualify students to pursue the following licensure and/or certification opportunities:

LICENSURE/CERTIFICATION	OVERSIGHT ORGANIZATION	Will the licensure/certification require reporting per SDCL 13-1-61?
Wildland Firefighter Certification	wildlandfirefighter.sd.gov; US Forest Services.gov.	No
LICENSURE/CERTIFICATION	**OVERSIGHT ORGANIZATION**	Will the licensure/certification require reporting per SDCL 13-1-61?
LICENSURE/CERTIFICATION	**OVERSIGHT ORGANIZATION**	Will the licensure/certification require reporting per SDCL 13-1-61?

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 5: Financial Projections

Lake Area Technical College
A.A.S. in Natural Resources Management

	YEAR 1	YEAR 2	YEAR 3
Student FTE	**13**	**25**	**32**
I. PROJECTED EXPENDITURES			
A. ONE-TIME			
New/Renovated Facilities	$ -	$ -	$ -
Equipment	$ 7,000.00	$ 15,000.00	$ 15,000.00
Other	$ -	$ -	$ -
Sub-Total: One-time	$ 7,000.00	$ 15,000.00	$ 15,000.00
B. RECURRING			
B.1. PERSONNEL			
FTE (Faculty and Staff)*	86,415	88,143	89,906
Salary & Benefits	$ 86,414.54	$ 88,142.83	$ 89,905.68
B.2. OPERATING			
Rental / Lease	$ -	$ -	$ -
Contractual Services	$ 1,000.00	$ 1,000.00	$ 1,000.00
Equipment	$ -	$ -	$ -
Supplies	$ 2,500.00	$ 2,700.00	$ 2,900.00
Travel	$ 700.00	$ 800.00	$ 1,000.00
Other**	$ 16,401.00	$ 31,311.00	$ 40,257.00
Sub-Total: Operating	$ 20,601.00	$ 35,811.00	$ 45,157.00
Total: Recurring	**$ 107,015.54**	**$ 123,953.83**	**$ 135,062.68**
TOTAL EXPENDITURES (A + B)	**$ 114,015.54**	**$ 138,953.83**	**$ 150,062.68**
II. PROJECTED REVENUE			
Tuition	$ 48,422.00	$ 92,442.00	$ 118,854.00
State Fees	$ 16,401.00	$ 31,311.00	$ 40,257.00
Local Fees***	$ 26,402.41	$ 50,773.88	$ 64,990.56
Location-Based Fees	$ -	$ -	
State Sources****	$ 24,983.88	$ 81,301.71	$ 155,212.35
Federal Sources	$ -	$ -	$ -
Private Grants or Gifts	$ -	$ -	$ -
Other	$ -	$ -	$ -
TOTAL REVENUE	**$ 116,209.29**	**$ 255,828.59**	**$ 379,313.91**
REVENUE - EXPENDITURES	**$ 2,193.75**	**$ 116,874.76**	**$ 229,251.23**

Projections are held constant based on current fiscal year. Inflation or rate changes are not factored.

SOUTH DAKOTA BOARD OF TECHNICAL EDUCATION
Appendix 5: Financial Projections

Lake Area Technical College
A.A.S. in Natural Resources Management

Notes:

*1 instructor - total compensation
**Pay state facility fees
***Reflects costs for department operations and campus supports
****Existing program = receive state aid in year 1 (From year prior's enrollments)

SOUTH DAKOTA DEPARTMENT OF
GAME, FISH AND PARKS
523 EAST CAPITOL AVENUE | PIERRE, SD 57501

January 14, 2025

Nicki Yackley-Franken, Assistant Dean of Academics
Lake Area Technical College
-P.O. Box 730
Watertown, SD 57201

Ms. Yackley-Franken,

On behalf of South Dakota Department of Game, Fish and Parks (GFP), I am writing to offer full support for the proposed Natural Resources Management program at Lake Area Technical College (LATC) in Watertown, South Dakota. Our agency has a longstanding commitment to supporting workforce development through partnerships with educational institutions, and we believe this proposed program aligns perfectly with both our agency needs, other natural resource agencies and organizations, and the broader goals of preparing the next generation of professionals.

As an agency, we are excited about the opportunity to collaborate with LATC to enhance the quality of technical education and increase local access to skilled talent. We strongly believe that revising and expanding this program to include the option of a Conservation Officer certification now also, this will provide a critical pipeline of qualified workers, addressing both current and future demands. In addition, GFP is in the initial stages of a collaboration with LATC on fish rearing and intern development. Specifically, GFP hatchery staff will assist LATC with improvement of an existing recirculating aquaculture system and development of additional systems. These will be used to train students for potential positions as interns and permanent staff in state fish hatcheries. Any fish produced will be stocked into public fishing waters. In addition, GFP hatcheries are actively recruiting LATC students for critical hatchery internships throughout the year. We anticipate a successful relationship with LATC, especially with the college providing students with practical skills in so many areas essential for hatchery operation and other positions with GFP.

Looking ahead, our natural resource management field anticipates a significant need to fill positions soon as many of our senior staff reach retirement age and entry level staff look to advance their careers. These roles are critical to sustaining and managing our states natural resources for all recreational user groups. The expected wage range for these positions varies depending on the role, but it generally falls between $18.50 and $30.00 per hour. By investing in this program, we are not only ensuring a highly trained workforce but also contributing to the long-term sustainability of fisheries and wildlife professionals.

Thank you for considering this letter of support. Should you have any further questions or require more details, please do not hesitate to contact me at 605-773-4193 or via email at chad.switzer@state.sd.us.

Sincerely,

Chad Switzer, Wildlife Deputy Director
South Dakota Department of Game, Fish and Parks

605.223.7660 | GFP.SD.GOV
WILDINFO@STATE.SD.US | PARKSINFO@STATE.SD.US

January 14, 2025

South Dakota Board of Technical Education
800 Governors Drive
Pierre, SD 575436

South Dakota Board of Technical Education Members:

I write this letter in support of the proposed changes to the Natural Resources Management Program at Lake Area Technical College (LATC). I currently serve as an Advisory Board Member for that program. During my past working career at East River Electric Power Cooperative in Madison, South Dakota, I also served in the same capacity for the LATC Energy Operations and Energy Technology program. I have found that the staff of LATC make proposed changes only after careful consideration and planning, with the best interest of LATC, the students, and their future employers in mind.

My interest in natural resources has been lifelong, from growing up in eastern South Dakota, exploring the pastures, potholes and creeks, to later tramping through the Waterfowl Production Areas and Game Production Areas, and canoeing down the Big Sioux and James rivers. As a long-time member of Ducks Unlimited and several other conservation organizations, I have worked with the local Natural Resources Conservation Service in Madison on extensive native grass and wildflower restorations, and tree plantings around my home.

Please support the proposed changes to the LATC Natural Resources Management program.

Sincerely,

Jeffery A. Rud

Jeff Rud
Madison, SD

January 16, 2025

Doug Alvine
Retired Game, Fish & Parks
1315 North Maple
Watertown, SD 57201
Dougalvine@hotmail.com
605-881-7496

South Dakota Board of Technical Education
800 Governors Drive
Pierre, SD 57501

South Dakota Board of Technical Education Members:

I spent my career with SD Game, Fish and Parks, starting with habitat management in Watertown after graduating from SDSU in Wildlife and Fisheries Management. Next, I worked in Idaho and South Dakota fish hatcheries that produced trout. I was then a Conservation Officer in Faulkton and Madison before moving to Watertown as the Regional Game Manager and subsequently the Regional Supervisor for NE South Dakota until I retired. This position was responsible for overseeing the fisheries, habitat, law enforcement and wildlife damage management programs.

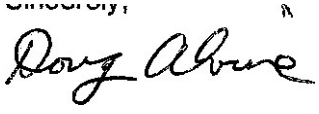
Presently, I am on the Advisory Board for the new Natural Resources Program at LATC, board member of the Lake Area Zoo Society, and President of the Kampeska Chapter of the Izaak Walton League.

The decision to change the Environmental Technology Program to the Naturai Resources Program is excellent idea since it will attract more students looking to get into a conservation field for their career. The previous program appeared to be more for those wanting to work for an agency tike DANR doing water quality testing, etc. The new program is much more diverse and could lead to careers in numerous conservation positions.

Being retired from Game, Fish and Parks, I believe there are many positions with the Department that graduates of the Natural Resources Program could pursue. This includes positions in wildlife law enforcement, habitat management, fisheries management and working in a hatchery, wildlife damage management and park management. I was involved in hiring a lot of employees in my career and I would look strongly at students with a degree such as the Natural Resources Program at LATC.

Sincerely,

Sincerely,



Doug Alvine