AS NATURAL RESOURCE MANAGEMENT

PROGRAM REVIEW

CANKDESKA CIKANA
COMMUNITY COLLEGE

Spirit Lake Tribe

October 2023

I. Program description and relationship to the Cankdeska Cikana Community College mission. (See also Appendix A)

Brief Narrative (1 – 3 paragraphs)
The Associate of Science in Natural Resource Management at Cankdeska Cikana Community College facilitates acquisition of scientific scholarship and hands-on experience in the natural resources field to assist students in realizing their career goals and achieve independence. Students learn Natural Resource Management policies and techniques, identification of important and culturally relevant species, and how our natural environment works through the connections of land, water, sky, and the people and animals inhabiting these spaces. As a result, students become effective members of our global society and can communicate intelligently on a myriad of topics. The Natural Resource Management Program seeks to develop future fish and wildlife biologists, climatologists, agriculturalists, environmental policy makers, and much more. This is a diverse field with wide applications in nearly any setting. To aid in the development of these future careers, the Natural Resource Management Program may be transferred to a four-year program of study at NDSU. The NRM coursework is eligible to transfer as general education credits to any North Dakota 4-year institution.

Reflection

Strengths

- Two instructors with master's degrees in complementary aspects of Natural Resource Management (land and water) who have both public and private sector work experience.
- Skills developed in coursework support CCCC's mission statement of independence and self-sufficiency.
- Supplemental resources available for the Program due to the college's designation as a Land Grant institution.
- Thanks to the Land Grant status, CCCC is able to offer a wide variety of supplemental experience for students, including horticulture, agriculture, agribusiness, environmental management, and more.

Concerns

- Limited number of jobs in the area for those who want to stay close to home.
- Limited faculty
- Retention of students

Progress on concerns from last previous program review (give date of last review, if applicable)

- Previous review was conducted in November of 2020. Concerns noted were low enrollment and limited number of jobs in the area for those who want to stay close to home.
- The NRM Program has seen growth since the last review, with 19 students declared as NRM majors since 2020.
- Faculty continue to attend outreach events and advance science topics wherever possible.
- Faculty and Staff have also worked closely with the 4-H program to include NRM topics in programming.
- With a professional shift towards more and more remote work, research into NRM-related careers with remote options will open more positions for those who wish to stay in the area.

Recommendations (Curriculum Committee Use Only)

- Continue to help NRM students to participate in research, apprenticeships, and internships as this appears to be improving student retention.

II. Program background information, enrollment and breadth (See also Appendix B)

Brief Narrative (1 – 3 paragraphs)
Current staff include:

- Ms. Jessica Fish, Land Grant Director, December 2022-Present
- Mr. Douglas Cudworth, Instructor, July 2013-Present
- Ms. Krystal Caldwell, Instructor, September 2023-Present

Both Instructors serve as full-time Instructors, teaching 12-15+ credits per semester. In addition, the Land Grant Director helps plan and execute outreach in the community and find ways to promote the program.

For a list of Natural Resource Management course offerings, please refer to Appendix B. These course offerings have been selected to provide a strong base for students who want to either pursue a career in Natural Resource Management fields or pursue more specialized degrees. It also provides the chance for students to explore potential specializations in weather, water resources, plants, wildlife, soil science, geology, and other fields. It has been designed to transfer to a 4-year institution for increased specialization. One transfer agreement is in place with NDSU. Though the low enrollment is not ideal, it does provide NRM students with the opportunity to benefit from small class sizes and individual attention. This allows the NRM faculty and staff to help students pursue some of their unique interests in the environmental field.

Reflection
Strengths

- Variety of courses that give both overviews and specialization opportunities.
- Personal instruction due to faculty to student ratios.
- Students who remain in the program do well and generally transfer to other institutions.

Concerns

- Lack of enrollment in the program. Although enrollment is increasing, it could still be improved.

Progress on concerns from last previous program review (give date of last review, if applicable)
In the last review (November 2020), it was noted that student preferences for online vs. hands-on learning needed to be explored. In the interim, several classes have been reworked to either provide a better layout for online learning or hybrid classes that allow for some hands-on learning for students in a class environment.

Recommendations (Curriculum Committee Use Only)

- Develop MOA with an additional college to expand student transfer choice.
- Continue to use apprenticeships and internships to increase student interest and enrollment.

III. Program Quality and Assessment (See also attached assessment template(s) Appendix C)

Brief Narrative (1 – 3 paragraphs)
The Natural Resource Management Program possesses high-quality facilities, equipment, and technology to maintain the effectiveness of its courses and programs. The Natural Resource Management Program has two spacious classrooms. One is composed of a traditional classroom (with the option to use laptops during class). The room can accommodate 20 students. The other classroom functions as a laboratory classroom space where students can explore Program topics hands-on. Each classroom includes modern teaching technology. The Program has its own library containing pertinent reference books for instructor and student use.

The Program delivers instruction in ways that best suit the materials and student needs. For example, students studying ecology or wildlife identification work in the laboratory classroom where samples can be handled, microscopes can be used to view specimens, and excursions to do field work are a regular occurrence. Evidence that the coursework meets students learning needs is found in recent graduates who have transferred to 4-year institutions.

Program faculty utilize Essential Studies Outcomes such as critical thinking skills, communication skills, technological literacy functions, and personal attribute criteria for evaluating students. Faculty also use test scores, class projects, and surveys as direct and indirect means of student evaluation. This data is accumulated and emailed directly to the Assessment Team. Faculty also review this information to identify areas to improve for the next semester. Formative and summative assessments are used to improve student learning. Please refer to Appendix C to review recent Assessment data.

Reflection
Strengths

- Computer workspaces and laboratory classrooms.
- Variety of instructional delivery methods utilized as appropriate for course material.
- Proximity to appropriate ecosystems to facilitate study of Program topics.
- Professional-level sampling and analysis equipment.

Concerns

- Continuing need for training and professional development plans, tracking number and subject of the events attended.

Progress on concerns from last previous program review (give date of last review, if applicable)
The November 2020 review noted that the program should continue to increase community and student awareness of program opportunities. Staff and faculty participate in several outreach events per year, and also have worked with the 4-H program to bring topics to the students in that program as well.

The last review also noted the need for a plan of training and professional development. Monthly faculty meetings were created to further this goal.

Recommendations (Curriculum Committee Use Only)

- Create outdoor classroom opportunities for students.

IV. Program cost effectiveness and ability to meet occupational needs (See also Appendix D)

Brief Narrative (1 – 3 paragraphs)
According to the Bureau of Labor Statistics, careers in environmental science are expected to change as fast as average or much faster than average from 2019-2029, dependent upon the specialty.

Careers in urban/regional planning and environmental science/protection are projected to increase faster than those in agriculture, petrochemicals, or wildlife, though job numbers are still expected to increase in those fields. These positions typically require a bachelor's degree, though some fields can be entered with associate degrees and others require a master's degree. Careers in agriculture, fishing, or forestry that do not require any degrees are expected to decline at a faster than average rate.

The college is not located in a densely populated area, so students may have to move away to pursue careers in their desired specialties, depending on their interests and the availability of related jobs. However, with the shift to more and more remote work spaces after the pandemic, there are more options for job seekers who wish to stay close to home.

Natural Resource positions are prevalent, with applications to nearly any sector of business or government work.

The Bureau of Labor Statistics show that related job fields are growing faster than average, and are projecting 4,000-6,000 job openings per year.

Transfer agreement in place with NDSU Natural Resource Management Bachelor of Science Program, effective November 1, 2020.

Entirely grant funded.

The presented revenue and program budget indicate that the Natural Resource Management Program is healthy and has a positive general outlook. The Program is fully funded by a federal Tribal Equity grant. The grant funding must be applied for every 5 years, but it is expected to maintain the program for the foreseeable future.

Reflection
Strengths

- Job outlook is positive for those currently studying environmental sciences.
- The Natural Resource Management Program is a net gain for the college, as any tuition and revenue from the ISC for the program can be used to support the College and not the program specifically – NRM has been self-supporting through grant funding since 1994.

Concerns

- The number of jobs available for environmental science fields in the surrounding area is relatively low, though there are opportunities for motivated individuals to start their own businesses in related fields.
- Low enrollment is not ideal and efforts should continue to be made to increase enrollment. Continued engagement with area youth is recommended to help introduce the potential for Natural Resources/Agricultural careers.
- Funds for the program are dependent on the will of Congress, however those funds have regularly seen additional appropriations each year.

Progress on concerns from last previous program review (give date of last review, if applicable)
Concerns remain the same, although enrollment and student interest has been increasing.

Recommendations (Curriculum Committee Use Only)

- Continue with 4H and internships/apprenticeships to attract prospective students.
- Develop outreach with community agencies for Natural Resource employment opportunities.

V. Ability to positively impact CCCC's relationships, partnerships, and alliances

Brief Narrative (1 – 3 paragraphs)
The Natural Resource Management Program reserves sufficient facilities such as tables, chairs, computers and keyboards, printers, smartboards and their projectors, employee computer workstations, telephones, global positioning satellite units, and general office supplies to fulfill the standards of excellent academic instruction. The Program maintains its own library of reference materials, available to students and faculty, to supplement what is available at the Valerie Merrick Memorial Library.

Faculty and staff make themselves available to students to provide tutoring or support in whatever way is needed. The NRM program also frequently helps students tailor their education towards particular interests wherever possible. Faculty have the resources to attend professional development training or to pursue additional coursework to support their instruction at the college.

The Program contributes to other college programs through significant involvement with outreach and education as part of the Land Grant status of the college. For example, the Land Grant Extension Program utilizes interns that are often NRM students. These interns facilitate the nutrition and cultural workshops as well as the gardening and landscaping program. Extension provides educational opportunities for area children, Head Start, Senior Services, and supplemental food to the campus cafeteria and food/hygienic supplies to community programs that support low-income or other individuals in need.

The NRM program also provides support for its interns that work with area agencies, such as the Spirit Lake Tribal EPA and Tribal Fish & Wildlife Departments as well as with CCCC programs (Advanced Manufacturing, Pre-Engineering, Carpentry).

Transfer agreement in place with NDSU Natural Resource Management Bachelor of Science Program, effective November 1, 2020.

Reflection
Strengths

- Classrooms and equipment available for use.
- Support for faculty to continue their professional development.
- Partnerships, Internships, Service projects, and collaborations within the community and for the students.
- Strong community presence through the connection with the Extension

Concerns

- Maintaining the strong connections and creating new ones with the community and area youth who may become future NRM students.

Progress on concerns from last previous program review (give date of last review, if applicable)
The pandemic created limitations to community engagement, however these have largely been alleviated since the restrictions have been lifted.

Recommendations (Curriculum Committee Use Only)

- Develop apprenticeships within the Bush Foundation and Natural Resources programs for experiential training and future employment prospects with the college.

VI. Program Analysis and Reflection Narrative

Narrative:

- The Academic Deans are responsible for reviewing the course content, design, and delivery about twice per academic year.
- A 2020 graduate has successfully transferred to a 4-year institution and another student plans to do so in 2021.
- Students from the NRM program have been able to participate in conferences like FALCON and AIHEC, and have been active in independent research projects both for the NRM program and also other departments.
- Enrollment in the program is low, but has seen steady growth in recent years.
- The program maintains a transfer agreement with NDSU, which may attract students to the program and facilitate the attainment of advanced degrees.
- The goal for the Natural Resource Management Program is to provide opportunities for students who wish to advance to four-year institutions or to provide hands-on job experience for those who have other pursuits in mind.
- The internship program is incredibly strong for students who participate. They are able to learn about horticulture, agriculture, agribusiness, landscaping, and much more.
- The program could make use of digital lab software if funding could be made available through college resources.

Appendix A

(Current CCCC Program of Study showing courses offered and suggested course rotation)

Report of Credits Earned/Needed for Graduation

Name:

AS in NATURAL RESOURCE MANAGEMENT **Date:**

Essential Study Requirements				**Semest**	**Credits**
ENGL	100		Student Success		1
ENGL	110	ND:ENGL	College Composition I		3
ENGL	120	ND:ENGL	College Composition II		3
COMM	110	ND:COMM	Fundamentals of Public Speaking		3
DS	110	ND:HUM	Dakota Culture and History		3
		ND:HUM OR ND:FA or ND:HIST			3
		ND:SS OR ND:HIST			3
ECON	201	ND:SS	Principles of Microeconomics		3
CSCI	101	ND:COMPSC	Introduction to Computers		3
MATH	103	ND:MATH **	College Algebra		3
BIOL	124	ND:LABSC	Environmental Science		3
BIOL	124L		Environmental Science Lab		1
DSL	250	ND:HUM	Dakota Language I		3
CHEM	115	ND:LABSC ***	Introduction to Chemistry		3
			OR		
CHEM	121	ND:LABSC ***	General Chemistry I		
CHEM	115L	ND:LABSC	Introduction to Chemistry Lab		1
			OR		
CHEM	121L	ND:LABSC	General Chemistry I Lab		
					38
Core Classes					
NAT	102		Introduction to Natural Resource Mgt		3
NAT	297	****	Natural Resources Internship		3
Program Electives (Choose from Below)					15-24
					21-30
				Total	***60-65***

Program Electives				
BIOL	150	ND:LABSC	General Biology I	3
BIOL	150L	ND:LABSC	General Biology I Lab	1
BIOL	151	ND:LABSC	General Biology II	3
BIOL	151L	ND:LABSC	General Biology II Lab	1
BIOL	230	ND:LABSC ***	Ecology (Nature Study)	3
BIOL	230L	ND:LABSC	Ecology (Nature Study) Lab	1
CHEM	116	ND:LABSC	Introduction to Organic and Biochemistry	3
CHEM	116L	ND:LABSC	Introduction to Organic and Biochemistry Lab	1
ENS	202		Environmental Issues	2
ENS	225	***	Environmental Sampling	3
ENS	225L		Environmental Sampling Lab	1
ENS	299		Topics in Agriculture/Natural Resources	3
GEOL	102		Historical Geology	3
GEOL	102L		Historical Geology Lab	1
GEOL	150	ND:LABSC	Physical Geology	3
GEOL	105L	ND:LABSC	Physical Geology Lab	1
GEOL	219	*****	Intermediate Geology	3
GEOL	219L		Intermediate Geology Lab	1
MATH	210	ND:MATH ******	Elementary Statistics	3
NAT	105		Wildlife Identification	3
NAT	105L		Wildlife Identification Lab	1
NAT	215	ND:LABSC	Plant Identification	3
NAT	215L	ND:LABSC	Plant Identification Lab	1
SOIL	210	ND:SCI	Soil Science	3
SOIL	210L	ND:SCI	Soil Science Lab	1
SOIL	217	ND:SCI	Intro to Meteorology & Climatology	3
SOIL	264		Natural Resource Management Systems	3

*Prerequisite of ENGL 110 (College Composition I).
**Prerequisite of ASC 093 (Intermediate Algebra) or Placement Test.
***Prerequisite of MATH 103, Appropriate Placement Test, or MATH 210 AND instructor approval.
****To be taken at any time following the first year of coursework.
*****Prerequisite of GEOL 105
******Prerequisite of ASC 093 (Intermediate Algebra) or MATH 100 (Intro to Quantitative Reasoning) or instructor approval.

Current POS Effective Date: 8/2022
BOR Approved:
Curriculum Approved Revisions: 08/18/2015, 01/14/16, 04/18/17, 05/08/17, 11/09/18, 12/12/19, 07/14/22
Institutional Updates: 01/31/19, 12/12/19, 12/7/20, 1/1/21, 8/16/21, 7/14/22

			Suggested Course Rotation						
			AS in NATURAL RESOURCE MANAGEMENT						
	Semester 1				**Fall**				
CSCI	101		ND:CSCI		Introduction to Computers				3
ENGL	110		ND:ENGL		College Composition I				3
ENGL	100				Student Success				1
MATH	103		ND:MATH		College Algebra				3
NAT	102				Intro to Natural Resource Mgt.				3
									13
	Semester 2				**Spring**				
CHEM	115		ND:LABSC		Introduction to Chemistry				4
COMM	110		ND:COMM		Fundamentals of Public Speaking				3
DSL	250		ND: HUM		Dakota Language I				3
ENGL	120		ND:ENGL		College Composition II				3
			ND:SS or ND:HIST						3
									16
	Summer Session (or during Semester 3 or 4)								
NAT	297				Natural Resources Internship				3
									3
	Semester 3				**Fall**				
BIOL	124		ND:LABSC		Environmental Science				4
DS	110		ND:HUM		Dakota Culture and History				3
ECON	201		ND:SS		Principles of Microeconomics				3
					Program Electives				6 to 9
									16 to 19
	Semester 4				**Spring**				
			ND:HUM OR ND:FA OR ND:HIST						3
					Program Electives				9-15
									12 to 18
								Total	***60-69***
Updated: 01/31/19, 12/12/19, 7/14/22									

Appendix B – Program Background Information, Enrollment, and Breadth

Faculty Program Staff and Credit Hour Loads (fill in current program staff information)

Name	Title/Position	FT/PT/ TEMP	Credit Load/Semester
Douglas Cudworth	Instructor	FT	12 - 18
Krystal Caldwell	Instructor (beg Sep 2023)	FT	12 – 15

Enrollment and Graduation Data (Prefilled by program)

Natural Resource Management	# Enrolled Natural Resource Management	Total Enrollment	Program % of Total Enrollment
Fall 2018	2	178	1.1%
Spring 2019	2	164	1.2%
Summer 2019	0	45	0.0%
Fall 2019	3	160	1.9%
Spring 2020	6	168	3.6%
Summer 2020	1	39	2.6%
Fall 2020	1	182	0.5%
Spring 2021	1	161	0.6%
Summer 2021	1	129	0.8%
Fall 2021	4	248	1.6%
Spring 2022	1	243	0.4%
Summer 2022	1	148	0.7%
Fall 2022	6	316	1.9%
Spring 2023	2	307	0.7%
Summer 2023	2	183	1.1%
Totals	33	2671	1.2%

5-Year Program Enrollments

Program Graduates AS Natural Resource Management					
2022-2023	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
0	0	1	1	1	1

Total CCCC Graduates					
2022-2023	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
73	49	35	25	28	20

Percentage of Program Graduates to CCCC Graduates					
0.0%	0.0%	2.9%	4.0%	3.6%	5.0%

5-Year Graduation Rates

Appendix C – Program Quality and Assessment **(Pre-filled: two most recent assessment cycles)**

NATURAL RESOURCE MANAGEMENT – AS

FALL 2022

Program Outcomes

1. The student will demonstrate critical thinking skills in understanding natural resource problems.
2. The student will develop practical skills in environmental science.
3. The student will demonstrate technical skills in environmental monitoring/ research.
4. The student will understand the broad ethical considerations of natural resource management.

Course Outcomes

Soil Science 217 – Introduction to Meteorology and Climatology

The student will be able to:

1. Gain knowledge of the meteorological components that create our weather patterns and govern global climate regimes.
2. Gain insights on how humankind can play a part in controlling severe climatic events that could threaten human safety.

D-Direct I-Indirect List activity(ies) used to measure student success	Goal	Findings - Results (N = # students met/# total) (Avg. = average grade) Range = lowest to highest grade recorded)	Analysis (Contributing factors - Internal and External - resulting in not meeting goal)	Recommendations	Identify Course Outcome(s) being demonstrated	Identify Program Outcome(s) being demonstrated	Identify Essential Studies Outcome(s) being
D – SOIL 217 Final Test	>70	N = 2 NP=0 Avg.=80.0 Range=80.0 SR=2/2	Students were very cooperative in completing suggested activities. These Students showed improvement from midterm to end of term.	More group class meetings seemed to improve the learning environment. This type of learning is highly recommended for the next school term.	1,2	1,2,4	1
I – Oral questions					1,2	1,2,4	1

Course Outcomes
Soil Science 210-Introduction to Soil Science

The student will be able to:

3. Develop introductory understanding of optical mineralogy and petrology.
4. Increase knowledge of geological sciences.
5. Improve the ability of the students to form ideas, concepts, and proposals on future water and soil issues.
6. Provide students with information to be used both personally and professionally.
7. Identify an argument or a problem.
8. Identify facts related to a problem.
9. Contrast alternative and/or multiple solutions to a problem.

D – SOIL 210 Midterm Test	>70	N = 2 NP=0 Avg.=84.0 Range=83.0 to 85.0 SR=2/2	Students were very cooperative in completing suggested activities. These Students showed improvement from midterm to end of term.	More group class meetings seemed to improve the learning environment. This type of learning is highly recommended for the next school term.	1,2,3,4 5,6,7	1,2,4	1
I – Oral questions					1,2,3,4 5,6,7	1,2,4	1

Course Outcomes
GEOLOGY 105 and 105L - Physical Geology and Physical Geology Laboratory

The student will be able to:

1. Develop introductory understanding of earth materials and earth processes.
2. Increase knowledge of geological sciences.
3. Improve the ability of the students to form ideas, concepts, and proposals on future water and soil issues.
4. Provide students with information to be used both personal and profession

D – GEOL 105-01 Final Test	>70	N = 14 NP=10 Avg.=80.2 Range=76.0 to 85.0 SR=4/4	Students were very cooperative in completing suggested activities. These Students showed improvement from midterm to end of term.	More group class meetings seemed to improve the learning environment. This type of learning is highly recommended for the next school term.	1,2,3,4	1,3	1
D-GEOL 105-02 Final Exam I – Oral questions	>70	N=10 NP=10 Avg.=NA Range=NA SR=NA	Insufficient communication existed between college personnel and students.	As pandemic period eases, attempt to bring more students to campus if at all possible.	1,2,3,4	1,3	1

SPRING 2023

Course Outcomes
GEOLOGY 102 and 102L - Historical Geology and Historical Geology Laboratory

The student will be able to:

1. Develop introductory understanding of earth materials and earth processes.
2. Increase knowledge of geological sciences.
3. Improve the ability of the students to form ideas, concepts, and proposals on future water and soil issues.
4. Provide students with information to be used both personal and profession

Course Outcomes
Soil Science 210-Introduction to Soil Science

The student will be able to:

1. Develop introductory understanding of optical mineralogy and petrology.
2. Increase knowledge of geological sciences.
3. Improve the ability of the students to form ideas, concepts, and proposals on future water and soil issues.
4. Provide students with information to be used both personally and professionally.
5. Identify an argument or a problem.
6. Identify facts related to a problem.
7. Contrast alternative and/or multiple solutions to a problem.

D-Direct I-Indirect List activity(ies) used to measure student success	Goal	Findings - Results (N = # students met/# total) (Avg. = average grade) Range = lowest to highest grade recorded)	Analysis (Contributing factors - Internal and External - resulting in not meeting goal)	Recommendations	Identify Course Outcome(s) being demonstrated	Identify Program Outcome(s) being demonstrated	Identify Essential Studies Outcome(s) being
D – GEOL 102-01 and GEOL 102L-01 Final Test	>70	N = 7 NP=3 Avg.=71.25 Range=52 to 85.0 SR=4/7	Students were very cooperative in completing suggested activities. This cooperation facilitated their high success ratio in learning their material. Students showed improvement from midterm to end of term. Illness and severe weather were negative factors.	More group class meetings seemed to improve the learning environment. This type of learning is highly recommended for the next school term.	1,2,3,4	1,3	1
	>70	N=7 NP=3 Avg.=77.0 Range= 60 to 93 SR=4/7			1,2,3,4	1,3	1

D-GEOL 102-02 and GEOL 102L-02 Final Exams I – Oral questions		N=3 NP=1 Avg.=74.0 Range=74.0 SR=2/3 N=3 NP=1 Avg.=87.0 Range=74 to 100 SR=2/3					
D-SOIL 210-01 and SOIL 210L-01 Final Exams	>70	N=1 NP-0 SR=1/1 AVG.=87.5 Range=87.5 N=1 NP=0 SR=1/1 AVG.=93 Range=93	Student was extremely cooperative in completing assigned activities. Student demonstrated improvement and knowledge of material from midterm to end of semester.	Additional research material should be made available to an advanced student as in this case.	1,2,3,4	1,3	1

Appendix D – Cost Effectiveness and Ability to Meet Occupational Needs

Occupational Needs

National Employment Projections, 2020-2030 Bureau of Labor Statistics	
Occupational Category	**Projected Increase**
Agricultural and Food Science Technicians	4.9%
Agricultural and Food Scientists	6%
Biological Science Teachers(post-secondary)	8.6%
Environmental Science and Protection Technicians	5.8%
Environmental Scientists and Specialists	6.1%
Geoscientists	5.1%
Soil and Plant Scientists	4.7%
Environmental scientists and geoscientists	5.6%
Environmental Science and Geoscience Technicians	4.9%
Agricultural Sciences teachers (post-secondary)	4.8%
Agricultural Equipment Operators	8.6%
Food Scientists and Technologists	7.5%
Life Scientists	7.1%
Agricultural Engineers	6.3%

Source:

U.S. Bureau of Labor Statistics. (2023, September 6). *Employment by detailed occupation*. U.S. Bureau of Labor Statistics. https://www.bls.gov/emp/tables/emp-by-detailed-occupation.htm

Annual Revenue and Expenditures (Prefilled)

Term	Enrollment	Tuition	ISC per FTE	ISC Revenue	Total Revenue
Fall 2018	2	$3,000.00	$7,356.26	$7,356.26	$10,356.26
Spring 2019	2	$3,000.00	$7,356.26	$7,356.26	$10,356.26
Summer 2019	0	$0.00	$7,356.26	$0.00	$0.00
AY 2018-19		**$6,000.00**		**$14,712.52**	**$20,712.52**
Fall 2019	3	$4,500.00	$8,279.20	$12,418.80	$16,918.80
Spring 2020	6	$9,000.00	$8,279.20	$24,837.60	$33,837.60
Summer 2020	1	$750.00	$8,279.20	$4,139.60	$4,889.60
AY 2019-20		**$14,250.00**		**$41,396.00**	**$55,646.00**
Fall 2020	1	$1,500.00	$7,356.26	$3,678.13	$5,178.13
Spring 2021	1	$1,500.00	$7,356.26	$3,678.13	$5,178.13
Summer 2021	1	$1,500.00	$7,356.26	$3,678.13	$5,178.13
AY 2020-21		**$4,500.00**		**$11,034.39**	**$15,534.39**
Fall 2021	4	$7,200.00	$8,656.00	$17,312.00	$24,512.00
Spring 2022	1	$1,800.00	$8,656.00	$4,328.00	$6,128.00
Summer 2022	1	$1,800.00	$8,656.00	$4,328.00	$6,128.00
AY 2021-22		**$10,800.00**		**$25,968.00**	**$36,768.00**
Fall 2022	6	$10,800.00	$9,245.00	$27,735.00	$38,535.00
Spring 2023	2	$3,600.00	$9,245.00	$9,245.00	$12,845.00
Summer 2023	2	$3,600.00	$9,245.00	$9,245.00	$12,845.00
AY 2022-23		**$18,000.00**		**$46,225.00**	**$64,225.00**

Term	2022-2023	2021-2022	2020-2021	2019-2020	2018-2019
Salary	$ 61,443	$ 57,430	$ 51,064	$ 57,693	$ 52,643
Fringe	40%	36%	35%	35%	35%
# of Program Faculty	1.3	2	2	2	2
Total Salaries	$79,875.90	$114,860.00	$102,128.00	$115,385.34	$105,286.00
Total Fringe	$31,950.36	$41,349.60	$35,744.80	$40,384.87	$36,850.10
Total Expenses	$111,826.26	$156,209.60	$137,872.80	$155,770.21	$142,136.10
Total Revenue	$64,225.00	$36,768.00	$15,534.39	$55,646.00	$20,712.52
Net Gain/Loss	**($47,601.26)**	**($119,441.60)**	**($122,338.41)**	**($100,124.21)**	**($121,423.58)**

Program Evaluation and Review (for Curriculum Committee Use Only)

Criteria	Program Exceeds Expectations	Program Meets Expectations	Program Needs Improvement	Program Does Not Meet Expectations
Sec II Enrollment	Increasing	Steady	Decreasing	Unsustainably Low
Sec III Quality of the Program as Determined from Assessment Information	The program's quality is substantial and notable.	The program's quality is substantial but could be strengthened through curricular and/or program enhancements, e.g. providing additional resources, adding or deleting courses	The program's quality could be strengthened through reconfiguration, e.g. substantial modification of the curriculum and the reorganization of faculty.	The program's quality and/or contribution to the institution is not substantial enough to justify its continuance
Sec IV Cost Effectiveness	Net Gain	Break Even	Net Loss	Unsustainable Losses
Sec IV Projected Occupational Need (Regional and State Level)	Large Need and Growth in This Area	Moderate Need	Minor or Low Need	No Clear Need for This Degree
Sec V Ability to positively impact CCCC's relationships, partnerships & alliances	Relationships are strong – benefits the overall mission of the college	Relationships, partnerships, and/or alliances could be developed to strengthen the program	Relationships, partnerships, and/or alliances need to be reconfigured in order to positively impact the college	Relationships, partnerships, and/or alliances are not positively impacting the college. The program's reduction or phase out would not adversely impact other programs.

The Curriculum Committee makes the following recommendation(s):

The Committee recognizes that the NRM program is actually self-sustaining through funding from the Land Grant. In addition, the courses offered provide students not in the program credits toward essential studies requirements and those dollars are not accounted for herein.

The Committee recommends the program for continuance.

Follow up actions and timeline:

Develop additional MOA by Spring 2025. Develop and track additional internships and apprenticeships within the program as leverage for enrollment.

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Completed Program Reviews Verification

Name of Program Reviewed: AS Natural Resource Management

Douglas Cudworth Director of Faculty of Record	10-19-23 Date of Review
Curriculum Committee Chair	10-19-23 Date of Review
Dean of Administration	10/23/23 Date of Review
Academic Dean	10-19-23 Date of Review
President (as appropriate)	11-1-23 Date of Review
Chair CCCC Board of Regents (as appropriate)	Date of Review