



ACADEMIC PROGRAM PROPOSAL FORM

(Revised: October 2017)

DIRECTIONS: Use this form when proposing a new major or primary field of study, new emphasis (BAS only), or new degree or certificate (30+credits) program. For more detail on the NSHE program approval process, see the last page of this form.

DATE SUBMITTED: May 2019

INSTITUTION: College of Southern Nevada

REQUEST TYPE: ☒ New Degree
☐ New Major or Primary Field of Study
☐ New Emphasis (BAS only)

Date of AAC Approval:

6/5/19

Date of Board Approval:

DEGREE: Check applicable box

- | | |
|---|---|
| ☐ Certificate: 30+ Credits | ☐ Associate of Arts (AA) |
| ☐ Associate of Science (AS) | ☐ AA/AS |
| ☐ Associate of Applied Science (AAS) | ☒ Bachelor of Applied Science (BAS) |
| ☐ Bachelor of Arts (BA) | ☐ Bachelor of Science (BS) |
| ☐ Master of Science (MS) | ☐ Master of Arts (MA) |
| ☐ Doctor of Philosophy (Ph.D.) | ☐ (Other or Named Degree) |

MAJOR OR PRIMARY FIELD OF STUDY (i.e. Animal Science): Environmental Management

INCLUDED IN LAST NSHE PLANNING REPORT: ☒ Yes ☐ No

(Website for NSHE Planning Reports: <https://www.nevada.edu/ir/Page.php?p=planning>)

TOTAL NUMBER OF CREDITS TO PROGRAM COMPLETION: 121

PROPOSED SEMESTER/TERM OF IMPLEMENTATION: Fall, 2020

Action requested (specify full program title):

Approval of a Bachelor of Applied Science (BAS) degree in Environmental Management at the College of Southern Nevada (CSN).

A. Brief description and purpose of proposed program. For proposed certificates (30+ credits), provide any existing degree or program under which the certificate falls.

The College of Southern Nevada (CSN) requests approval from the Nevada System of Higher Education Board of Regents for a new workforce development degree at the level of a Bachelor of Applied Science (BAS). The BAS program will have an emphasis in Environmental Management (BASEM) that will provide a distinctive baccalaureate degree pathway for students who attained an Associate's of Applied Science in Environmental Management (AASEM). This degree will further

the AASEM technician level credentials to a workforce development degree so that a graduate will be able to further their environmental skills within this growing and demanding field.

This workforce development degree ("program") has the support and backing (see attached letters) of the Clark County Water Reclamation District, Nevada Department of Environmental Protection, Kinross-Round Mountain Mining Corporation, Broadbent & Associates, Ninyo & Moore, NOVA Engineering, Western Technologies, OGI Environmental, SWCA Environmental Consultants, Terracon, Wright Engineers, and SW Geotechnical Engineering.

The BASEM pathway is designed to instill abilities and competence that focus on furthering the development of technician ("specialist") level skills including communication, decision-making, industry experience, and small project management with hands-on experience. The purpose of this BAS program is to build upon current vocational abilities while providing additional environmental specialist skills needed within a specific field of emphasis.

This program is intended for all students, including non-traditional and place-bound students who have employment or family restrictions. It will accept transfer students from the completed Associates of Applied Science (AAS) degree at CSN, a degree that contains appropriate lower division program requirements. Student learning will focus on specialist level environmental skills with core knowledge in biology, chemistry, geology and the environmental sciences. It will produce trained environmental specialist that can enter the work force in either the private or government sectors, filling empty and needed environmental specialist positions within Nevada and the surrounding region. Graduates will have direct transfer of learned skills and knowledge from higher education to their employers.

Within the sciences, environmental management is a technical-generalist degree focusing primarily on the understanding of our natural and man-made environments. As stated above, this BASEM degree will draw from four core fields of study with a specialization within one of those four sectors. True to most science degrees, this program will require significant field and laboratory learning, experiential learning, and data-oriented efforts outside of the typical classroom setting.

This program is needed because, according to the Nevada Department of Administration (1), the population in Nevada is expected to grow through 2024. This rapid growth will place additional stress on environmental resources, increasing the demand for technically-trained scientists. The BASEM program at CSN will provide a pathway for non-traditional and place-bound students who require access to a baccalaureate program in close proximity to their homes. Graduates will fill projected job gaps in Nevada and surrounding areas. For a variety of reason, non-traditional and place-bound students are unlikely to pursue higher education unless it is in close proximity to their homes. CSN is in a unique position to provide this access to these students whose needs would otherwise not be met and an opportunity would be missed.

Sources: (1) ([http://nsla.nv.gov/Library/StateDataCenter/ Nevada_Population_Estimates_and_Projections/](http://nsla.nv.gov/Library/StateDataCenter/Nevada_Population_Estimates_and_Projections/))

B. Provide a list and description of institutionally approved expected student learning outcomes
Students who graduate with a BASEM will have the following outcomes and be able to:

1. Summarize federal, county, state, and tribal policies driving natural resource policies.
2. Recall landscape ecology principles and technology to analyze ecological scenarios.

3. Recommend environmental techniques to develop management scenarios for working environmental specialist.
4. Analyze biological, chemical, geological and environmental science data to inform and make management decisions regarding environmental issues.
5. Categorize natural resource decision-making utilizing effective communication techniques.
6. Select Best Management Practice (BMP) and scientific strategies for managing natural resources.
7. Prepare management actions plans.
8. Show leadership skills within the environmental management and natural resource fields.

C. Provide an institutionally approved plan for assessing student learning outcomes

Individual courses will evaluate student mastery of program-aligned learning outcomes in methods appropriate for course content and goals. These measures will evaluate course, curriculum and faculty development efforts and will also support program assessment. Methods of evaluation may include but are not limited to:

1. Examinations and tests
2. Laboratory exercises, reports, and notebooks
3. Fields exercises and notebooks
4. Term and mid-term papers
5. In-person presentations
6. Discussion assignments
7. Employer feedback

Student evaluations will be completed in each course. Data generated will help shape course improvements, pedagogical training and program development. Surveys of current students and alumni will provide similar data for course and program development.

D. Contribution and relationship of program objectives to

i. NSHE Master Plan

As proposed in the 2017-2021 Planning Report from NSHE to the Board of Regents, this BASEM degree program will have the following emphases:

- Student-Focused System: The higher education system in Nevada will create a welcoming, respectful and friendly environment where all students have the opportunity to participate and succeed at every level of higher education.
- Increase the percentage of Nevada's general population who participate in some form of higher education, whether through coursework, workforce training, certificate programs, or degree programs.
- Strive to increase the percentage of students that express a high level of satisfaction with teaching, advising, and overall educational experiences at CSN and other NSHE institutions.
- Nationally place-bound populations are less likely to attend or complete college when extensive travel between home and campus is required. Factors contributing to place-bound status include a lower value on education, remote location, social adjustment in moving to larger

population centers, and family and employment circumstances. CSN is uniquely situated to address the circumstances and needs of this population of students in Nevada. Addressing the needs of these students is CSN's first mission. CSN has contact and support services for these place-bound students that cannot be addressed as effectively at other institutions of higher education.

Reputation for Excellence: Nevada's institutions of higher education will increase their national, regional, and statewide reputation based on targeted, outstanding, innovative programs and other accomplishments.

- Continue to develop and maintain technical programs, centers, and institutes that elicit national, regional, or statewide recognition for excellence.
- Contribute to Nevada's quality of life and the efficiency and productivity of the state's enterprises through public service rendered by Nevada's faculty, staff, and students.
- CSN is Nevada's first certified Hispanic Serving Institution (HIS).
- CSN has a highly innovative, technologically balanced approach to education that links the service area through combinations of traditional learning, online, and experiential learning. CSN is uniquely qualified to deliver programs in this setting. Providing access to this program is one step in developing environmental conservation professionals in across Nevada who are more likely to remain in Nevada where they are critically needed.
- Quality Education: Nevada's system of higher education consistently provides excellent learning experiences for its students through instruction, research, and service.
- Develop and implement an assessment plan and effective measures of student learning outcomes at each institution and for each academic program. Assessment plans for educational programs will be congruent with the differentiated missions of each institution. Each plan will be required to define student learning outcomes, assess student performance on those outcomes, and use results to improve teaching and learning.
- Develop effective measures of institutional performance, collect data on institutional indicators, and demonstrate results are used in the planning and evaluation process. These indicators will include the regular evaluation of programs and justification for program continuation.
- Increase the number of experiential and rich learning experiences available to place-bound students through creative performance, scholarly and research collaboration with faculty, and through community service learning.
- CSN closely links its programs and students through supporting course outcomes and will be assessed regularly. The availability of a environmental specialist degree programs to the place-bound students will enrich their opportunities to further their education in this discipline.
- A Prosperous Economy: Through a varied delivery of instruction, research, and service, higher education in Nevada will be an essential element in developing and sustaining a strong, dynamic, knowledge-based economy for Nevada.
- Develop and increase responsive educational programs that focus on state needs and critical shortages in identified fields.

- Increase the proportion of workers and the number of graduates in high-skill fields who come from Nevada's higher education institutions rather than from out of state.
- Increase institutional collaborations with the private sector and target significant research resources to achieve specific economic development objectives.
- Increase and focus workforce development to meet community needs in those sectors with the highest potential for growth.
- As a STEM discipline, graduates with the BAS in Environmental Management may serve within many high-demand workforce fields.
- Place-bound students are more likely to return to their home community, where the need for technical scientists is often critical, especially in Southern Nevada. Additionally, graduates of the BAS in Environmental Management program may find employment in a wide range of environmental professions, ranging from industrial companies, governmental agencies, private consulting and environmental firms.
- Building Quality of Life: Higher education in Nevada will be instrumental in advancing society's objectives and enriching the lives of Nevada's citizens.
- Increase public service and cultural opportunities that position higher education institutions as intellectual, cultural, and artistic centers and as a "marketplace for ideas."
- Ensure that all students have an opportunity to experience some form of internship in their educational programs focus.
- The BAS in Environmental Management program is a basic science degree of wide application. The degree may be applied to professional positions, environmental studies, resource management, and others. All of these fields have need for people willing to work across Southern Nevada and the region.
- Opportunity and Accessible Education for All: Nevada's System of Higher Education will increase the overall participation and, more importantly, the success of Nevadans enrolling at all levels of higher education and in all ethnic groups, and will address the unique educational needs of a highly diverse and non-traditional population.
- Raise the percentage of Nevada's high school graduates who continue into postsecondary education within the NSHE system.
- Increase programs and courses designed to meet the needs of place-bound and working adults.
- Expand the use of shared, new, and existing facilities on weekdays, evenings, weekends, and summers for the most cost-effective delivery of education to the learner.
- CSN increases accessibility to students throughout Southern Nevada. The isolation of place-bound students makes them not readily supported by the current programs of Nevada's Universities and State College. CSN already has in place existing infrastructure to provide this program to its service area. This program will add enrollment to existing courses that are already being delivered with little increased cost.

The program aligns with the proposals in the E-Learning report (E-Learning and Higher Education's Iron Triangle: Opportunity, Affordability, and Student Success, 2/11/2013). Specific recommendations addressed by this program include:

- Recommendation 3: Invest in Distance Education and Related Policy Review.

At CSN, "distance education" means more than the basic use of online delivery of classes. The program will use online abilities to enhance most classes, but will also use a large degree of delivery through experiential learning formats. CSN is highly invested in using this effective method of synchronous delivery that enables CSN instructors from all three main campuses and annex locations to reciprocally offer course content. Laboratory classes must generally be provided in a classroom format with those facilities located at one of the three main campuses. These classes are an important component of this program. In the future, technology will be developed to address some of the courses through dual synchronous and asynchronous (recorded and available later) formats. Current CSN's infrastructure, policy, and scheduling are in place for this program to utilize.

- Recommendation 6: Invest in a Shared Student Learning Portal and Student e-Portfolio.

Currently, all four of Nevada's community colleges share the Canvas LMS, and Canvas provides options for creating Student Portfolios. This allows an early opportunity for implementing this recommendation.

- Recommendation 11: Invest in Shared Marketing.

The largest opportunity for shared marketing with this program is to promote the opportunity for program graduates to enter graduate school at one of Nevada's universities. The program is focused on providing a rigorous curriculum that provides a solid foundation for entering graduate school in a range of environmental-oriented options.

ii. Institutional mission and core themes

The College of Southern Nevada creates opportunities and enriches lives with inclusive learning and working environments that support diversity and student success. CSN fosters economic development, civic engagement, and cultural and scientific literacy, while helping students achieve their educational, professional, and personal goals.

CSN is committed to:

1. Exceptional Learning Environments that integrate career and science education to shape well-rounded, engaged citizens, employees, and community leaders.
2. Developing Solution-Oriented Strategies to help students overcome barriers to educational access and success.
3. A Culture of Accountability in which we balance data-informed decision making with flexibility and responsiveness to stakeholders, individuals, and events.
4. A Collegial Work Environment that makes CSN the "employer of choice" for an exceptional workforce that is engaged in and accountable for the quality of CSN's learning environment, and

that benefits from excellent support, growth opportunities, and competitive total compensation packages.

5. Quality Community Partnerships that provide resources and educational opportunities to develop a skilled workforce.

6. Cultural and Academic Initiatives that promote the advancement and appreciation of the arts, sciences, and humanities, contributing to the richness of our multicultural community.

CSN values the following:

Lifelong Learning: CSN values a broad-based education because a diverse foundation of knowledge empowers creative thinking, problem solving, and innovation.

Excellence: CSN understands that achieving and surpassing our goals requires care, commitment, and quality in teaching, learning, scholarship, service, and administration.

Integrity: CSN places fairness, honesty, transparency, and trust at the center of all policies and operations.

Inclusion: CSN embraces diversity because it heals social division and injustice, and promotes creativity, growth, and critical thinking through the integration of many different perspectives.

Academic Freedom: CSN values freedom of thought and speech because open minds and uninhibited discussions are fundamental to teaching, learning, and responsible civic engagement.

Connectedness: CSN builds a collective identity through shared governance, effective communication and collaboration among students, faculty, staff, and community members.

iii. Campus strategic plan and/or academic master plan

This BASEM is included in the 2017-2021 academic master plan for CSN.

iv. Other programs in the institution

The BASEM provides an advanced educational opportunity, baccalaureate attainment, and seamless articulation for completers of the AASEM degree or those who have completed the prerequisite courses prior to application to the program. Adding the BASEM to the CSN curriculum availability combines the synergies of four different sciences including biology, chemistry, geology, and environmental science. CSN's existing programs provide a strong foundation that provides efficiencies that strengthen the entire department and program.

The BASEM program reflects the following components of its Mission Statement:

1. The program is specifically oriented to all students, including non-traditional and place-bound students.

2. Live student support services are available at CSN main campuses and at several of its annex sites.

- Courses in this baccalaureate program will be widely available across CSN using distance technologies where available

3. The program addresses the educational, cultural, and economic needs of non-traditional and place-bound students across Southern Nevada.

- There is no program currently focused in Environmental Management available to students in Southern Nevada

- The degree provides not only the opportunity for an education within the discipline of Environmental Management but also incorporates a strong base for experiential learning.

- Opportunities exist for program graduates in Nevada and beyond for employment. Many existing and future jobs require a basic knowledge of science and hands-on-training.

- The program is highly invested in scientific knowledge, experiential learning and critical analysis. Employment opportunities exist in the private and government sectors.

4. The program will collaborate with local and state-wide entities to identify needs for students who understand science and its application. These activities are continuously assessed to adapt to the rapidly changing needs of employers (see below) and to assist in the recruitment and economic development efforts of the state.

For example, this program has the support of the following private companies and government agencies (see attached letters): Clark County Water Reclamation District, Nevada Department of Environmental protection, Kinross-Round Mountain Mining Corporation, Broadbent & Associates, Ninyo & Moore, NOVA Engineering, Western Technologies, OGI Environmental, SWCA Environmental Consultants, Terracon, Wright Engineers, and SW Geotechnical Engineering.

v. Other related programs in the System

The BASEM is a specialist level degree that is not available at any other institutions within the Nevada System of Higher Education (NSHE).

E. Evaluation of need for the program

i. The need for the program and the data that provides evidence of that need

There are four (4) reasons this program is warranted at CSN:

1. This program is available to all students, including non-traditional and place-bound populations. According to research, non-traditional and place-bound students will be most impacted by the development of this degree program (1-2). Many of these students are part of the "Sandwich Generation," students who have primary caretaking responsibility for their own children and their aging parents (1-3). Among other factors, these responsibilities restrict their access to educational opportunities and advancement. CSN is uniquely situated to address the needs of these populations in Nevada.

CSN is a certified Hispanic Serving Institution (HSI) and addressing the needs of this population is one of its primary missions.

Sources

(1) Understanding Place-bound Students: Correlates and Consequences of Limited Educational Opportunities (Social Psychology of Education, 2004, 7(3):353–376)

(2) It's Not Enough to Get Through the Open Door: Inequalities by Social Background in Transfer from Community Colleges to Four-Year Colleges (Article · Mar 2006 · Teachers College Record).

(3) Extending Notions of Campus Climate and Diversity to Students' Transition to College. (Article Mar 2008 · The Review of Higher Education)

2. Faculty in the Physical Sciences Department were approached by representatives from local environmental firms with concerns about the lack of hands-on-training graduates have even after completing a standard degree. They expressed concern about the cost of training a recent graduate with little hands-on-training (experiential learning) and having to invest on the job training upwards of 2 to 5 years. Industry leaders requested that CSN create an Applied Science degree in the field of environmental management to respond to their need. Consequently, the proposed BAS degree was created to meet the need in southern Nevada for technically-trained scientists. This degree will offer place-bound and nontraditional students educational advancement with job placement opportunities. It will also fill an identified job gap in the community (see attached letters of support).

Industry voiced that they cannot afford to hire an undertrained workforce in this new economy. This is a common issue across the nation for instance, Carol D'Amico stated that "We know from survey after survey that employers are expressing concern over the quality of college degrees and are becoming more reliant on credentials that they, themselves, sanction." (1) CSN is aware that knowledge and applied skills are being demanded by employers, consumers, and students. CSN is invested in making certain that skills learned in the classroom translate into skills for the workforce.

Many private companies and government agencies (see attached letters) are part of the Industry Advisory Committee and support the creation of this degree path at CSN (e.g. Clark County Water Reclamation District, Nevada Department of Environmental protection, Kinross-Round Mountain Mining Corporation, Broadbent & Associates, Ninyo & Moore, NOVA Engineering, Western Technologies, OGI Environmental, SWCA Environmental Consultants, Terracon, Wright Engineers, and SW Geotechnical Engineering).

Below are examples of comments of industry professionals regarding this proposed program :

Joseph W. McGee, P.G., C.E.M, Terracon

"traditional degree graduates have little applied science training, requiring firms to invest in extensive training after graduation"

Todd Croft, C.E.M., Supervisor, Nevada Department of Environmental Protection

They need "a good understanding of ... Federal laws...soil classification... groundwater sampling... Hydrogeologic setting... good data [and] time management skills"

Jeffrey S. Palmer, P.E., C.E.M. Principal Scientist, Ninyo & Moore

"In the past 15 or so years, we have found that recent college ... graduates are ill-prepared to enter the job market, as they all seem to lack practical scientific training"

James Bristow, P.E. Principal Engineer, NOVA Engineering

“While universities and colleges are seeing their ... enrollment numbers continue to increase, the graduates have little applied science training”

Lawrence Kennedy PhD, P.E., Env. Manager, Kinross Mining Corporation

"We strongly believe that the workforce needed in the industry today can be developed within the talented students we already have in the state. A program such as this will be a catalyst for this development and will provide a caliber of talented professionals that will be highly sought after in the job market."

Source: (1) Exploring the Future of Community Colleges: A compilation of essays by contemporary leaders.

https://ferris.edu/HTMLS/administration/academicaffairs/extendedinternational/ccleadership/alliance/documents/ImagineMore_Exploring-the-Future-of-Community-Colleges_2014.pdf

3. According to the 2016 Nevada High Demand Occupation Analysis and United States Department of Labor, Bureau of Labor Statistics, data trends highlight the need for environmental expertise. Data suggest that the field is growing rapidly. Environmental related jobs in Nevada are expected to grow at a rate of 11%, consistent with national trends. In fact, the United States Department of Labor, Bureau of Labor Statistics reports that job growth is expected to exceed national averages in other fields.

"Employment of environmental ... specialists is projected to grow 11 percent from 2014 to 2024, faster than the average for all occupations. Heightened public interest in the hazards facing the environment, as well as the increasing demands placed on the environment by population growth, is expected to spur demand for environmental scientists and specialists."

Promotion from technician to specialist within an environmental specialty requires a baccalaureate degree. Educational opportunities are presently limited for non-traditional and place-bound students.

4. According to NSHE's publication "Expanding by Degrees NSHE's Role in Building a New Nevada," Nevada's college achievement rate is 27.5 percent for students by age 25. In 2012, 30.1 percent of Nevadans between the ages of 25 and 34 held an Associate's degree or higher, well below the national average of 41.1 percent.

According to the same publication, 58 percent of all jobs in Nevada will require a degree of post-secondary training by 2020, producing a huge gap in skills among workers. This gap in skills must be closed if Nevada is to build a strong and diverse economy. This gap can be closed with this program as stated by Dr. Lawrence Kennedy of the Kinross - Round Mountain Mining Corporation.

“Public higher education is central to this statewide effort. Not only is a college degree the ticket to a better job, better pay, and long-term stability; it is the foundation for a stable, stronger and more diversified [Nevada] economy. If we are to build a New Nevada by expanding and diversifying our economy, it must be by degrees – more certificates, associate, baccalaureate, and advanced degrees that are closely aligned with our state's economic development plan.”

According to NSHE, Nevada is “...committed to increas[ing] the number of students graduating with a degree or credential of value by 2020. In addition, Complete College America strongly emphasizes closing the attainment gap for historically underrepresented populations.” (1)

Studies have shown that between 2002 and 2012, NSHE's enrollment gap between Caucasian and minority students decreased from 39 % to 7 % (1). The number of degrees conferred during that time period to minority students system-wide increased by 171% (1). According to Expanding by Degrees NSHE's Role in Building a New Nevada, "much has been accomplished, but there is much work left to do....." Consequently, they have launched a number of initiatives to help create diverse and inclusive policies, practices, and institutions.

NSHE recognizes that as one of the "least educated" states in the country, Nevada cannot continue to make strides "without significant investment." (1)

Therefore, the creation of a new BAS in Environmental Management at CSN is a logical path to address the above goals of NSHE and the State of Nevada.

Source:

(1) Expanding by Degrees NSHE's Role in Building a New Nevada, January 22, 2015. Nevada System of Higher Education. Accessed December 15, 2017. <https://nshe.nevada.edu/wp-content/uploads/Expanding-by-Degrees-NSHE-Strategic-Plan-2015.pdf>

ii. Student population to be served

This program is intended for all students. However, as previously outlined, it would specifically address the needs of underrepresented populations, including non-traditional and place-bound minority students.

iii. Procedures used in arriving at the decision to offer the program

Three (3) primary factors lead to this proposal:

1. According to research, non-traditional and place-bound students will be most impacted by the development of this degree program (1-3). It has been shown that non-traditional and place-bound students have a low rates of success and degree completion when they are required to transfer institutions (1-3). However, students who do not have to transfer institutions complete BAS degrees at a rate of 81% (2). The majority of students entering BAS programs are minority, place-bound and/or non-traditional students (3,4).

Also, according to Mary Fulton, such a program is "designed to expand access to low-income, first-generation or older students, many of whom may not have considered pursuing a bachelor's degree...[it provides] flexibility [in] course schedules ... well-suited to ... life circumstances of nontraditional students." She goes on to explain that "[such a program will] provide a seamless transition for students who start at a community college and therefore do not have to transfer to a four-year institution and a new setting." (5)

Sources

(1) Understanding Place-bound Students: Correlates and Consequences of Limited Educational Opportunities (Social Psychology of Education, 2004, 7(3):353–376)

(2) It's Not Enough to Get Through the Open Door: Inequalities by Social Background in Transfer from Community Colleges to Four-Year Colleges (Article · Mar 2006 · Teachers College Record).

(3) Extending Notions of Campus Climate and Diversity to Students' Transition to College.
(Article Mar 2008 · The Review of Higher Education)

(4) Extending Notions of Campus Climate and Diversity to Students' Transition to College.
(Article Mar 2008 · The Review of Higher Education)

(5) Community colleges expanded role into awarding bachelor's degrees. April, 2015.
<https://files.eric.ed.gov/fulltext/ED556034.pdf>

2. Industry professionals have voiced concern about the cost of training a recent graduate with little hands-on-training (experiential learning) and having to invest on the job training upwards of 2 to 5 years (see attached letters). They stated that they cannot afford to hire an undertrained workforce in this new economy. CSN is aware that knowledge and applied skills are being demanded by employers, consumers, and students. CSN is invested in making certain that skills learned in the classroom translate into skills for the workforce.

3. Environmental related jobs in Nevada are expected to grow at a rate of 11% and job growth is expected to exceed national averages in other fields. Promotion from technician to specialist within an environmental specialties requires a baccalaureate degree.

iv. Organizational arrangements required within the institution to accommodate the program

This Program will be under the Department of Physical Sciences Environmental Science discipline. The Physical Sciences program will remain as configured with a Director of the BASEM program appointed. Instructors for specific BASEM 300/400 level courses will be recommended by the Program Director and Faculty to the Department Chair(s).

Laboratory facilities for the BASEM program are located in the H and G buildings on the West Charleston campus and the main building of the North Las Vegas campus. Classroom space is available on the West Charleston and North Las Vegas campuses for lecture courses. Existing classrooms and laboratory facilities have the most up-to-date instructional resources (i.e. classrooms, laboratory equipment) available.

The program will utilize current full-time faculty and resources to achieve program goals and course assignments. The upper division classes will utilize online resources and will include lecture, experiential learning, laboratory and classroom exercises, and other available techniques.

The following full-time faculty will teach in the BASEM program:

Douglas B Sims, Ph.D., Environmental & Geological Sciences, Director (1.0 FTE), tenured.

Lois Alexander-Merkler, Ph.D., Biology, (0.1 FTE), tenured.

Mark Garner, Ph.D., Chemistry (0.1 FTE), tenured.

Cindy Shroba, Ph.D., Geology (0.1 FTE), tenured.

Amanda Hudson, Ph.D., Chemistry, (0.1 FTE), tenured.

Carrie Preite, Ph.D., Biology, (0.1 FTE), tenured.

John Keller, Ph.D., Environmental & Geological Sciences, (0.1 FTE), tenured.

Melissa Giovanni, Ph.D., Environmental & Geological Sciences, (0.1 FTE), tenure tracked

Other specialized faculty from the Physical and Biological Science departments will also be utilized to teach specific courses covered in this program.

v. The timetable, with dates, for implementation steps

The first step (step one) of the BASEM was the creation of the AASEM program; going live in Fall of 2019. The AASEM is the foundation for the first two years of the BASEM. The AAS was designed to have students complete all prerequisite courses before application to the BASEM program (step two). Courses have been selected, prepared and approved for the BASEM according to NSHE CCN guidelines. The design of steps one and two will lead to a higher than normal success rate of students in the BASEM program.

The proposed BASEM degree is planned to go live in Fall of 2020 with its first graduates in Spring 2022.

vi. If this or a similar program already exists within the System, what is the justification for this addition

The BASEM program is a specialist level degree that is not available within any other Nevada System of Higher Education (NSHE) institution.

vii. Evidence of employment opportunities for graduates (state and national). Include information on institutional review of the need for the program based on data from the Nevada P-20 Workforce Research Data System (<https://www.nevada.edu/ir/Page.php?p=workforce>), including the supply/demand reports at <http://npwr.nv.gov/reports/student-completion-and-workforce-part-ii/>.

This program is designed to lead to one of several potential career paths. These could include environmental careers in the public sector, biology, chemistry, geology and environmental scientist in the private sector, and pre-professional careers where graduate school follows completion of the BAS program.

As stated previously, careers in the sciences related to environmental skills are projected to grow 11% through 2024 according to the United States Department of Labor, Bureau of Labor Statistics (<https://www.bls.gov/ooh/life-physical-and-social-science/environmental-scientists-and-specialists.htm>). It is known that this field is one of the fastest growing occupations as evidenced by:

(1) All scientific specialties represented in this degree within Nevada are expected to grow at rates similar to the national average for all scientific occupations.

(2) A large portion of Nevada is public land managed by agencies of the federal government. In order for this land to be utilized for activities such as mining, water resources, ranching, and development, technical scientists will be needed for operations to interface with the managing agency. This often requires specific federal designations and qualifications that this degree would provide. The best option for creating scientists for these positions is to educate place-bound and non-traditional students.

Students in this degree program will qualify for specialist level employment that specifically requires a BAS in a related science. It was identified as part of a review of student and employer needs. The review determined a need for trained environmental specialist degree.

Because the field is so diverse and fast moving, it is difficult to list all of the career options available to students with a BAS degree. Salaries and Career Outlook Overview according to the U.S. Department of Labor, Bureau of Labor Statistics:

Career	Mean Wage	Projected Growth
Env. Sci. Tech	\$44,190	12.0%
Env. Sci./ Spec.	\$68,910	11.0%
Geology Tech.	\$56,470	16.0%

Source: <https://www.bls.gov/ooh/life-physical-and-social-science/environmental-scientists-and-specialists.htm>

Salary and job examples from the Nevada Governor's Office of Science, Innovation and Technology position and wages are presented below:

Career	Mean Wage
Geology Tech.	\$44,658
Env. Sci. Tech.	\$60,902
Hazardous Mat. Worker	\$37,669

Source: <http://osit.nv.gov/>

A BASEM degree is extremely versatile and applied towards any organization where teams are assembled to handle unique, goal-specific projects. Positions can be found across the environmental industry however, education at the baccalaureate level is required.

4. The heads of several environmental firms suggested that CSN consider creating a Bachelor of Applied Science degree in the field of Environmental Management focusing in technical aspects of the fields (see attached letters). Employers expressed concerns for the lack of hands-on-training students have after completing a traditional Bachelor's degree. They explained that the cost of training a new graduate with little experiential learning was a significant investment of 2 to 5 years. Furthermore, many of their staff require a Bachelor's degree for promotion beyond that of a technician and therefore, become locked in their position when lacking that education (see the attached letters).

Industry has made it clear that they can no longer afford an undertrained workforce in this new economy. CSN is aware that knowledge and applied ("hands-on-") skills are being demanded by employers, end users, and students. Industry recognizes hands-on-skills learned at the baccalaureate level are a reality, a must, when considering new hires.

F. Detailed curriculum proposal

i. Representative course of study by year (options, courses to be used with/without modification; new courses to be developed)

See attached program guided pathway

ii. Program entrance requirements

Admission requires a completed AASEM degree or equivalent in courses meeting the AASEM requirements with an appropriate GPA (2.0 in all course work). This open-door policy is an effort to recruit all students including diverse populations of underserved communities.

Students interested in the BASEM program will be required to attend an orientation during spring semester prior to start of the fall semester. Topics covered in the orientation include: entry and admission processes, costs, financial aid, application deadlines, and relevant services available to students admitted into the program. For students not able to come to campus, a phone/Skype meeting will be arranged before the fall start date. All students will be advised by the Program Director(s) or faculty.

Specific Entry Process:

1. Full-time admissions is in the Fall Semester.
2. Applications are due by end of April prior to Fall start; applications arriving later will be considered if space is available.
3. Students submit a resume and current college transcripts.
4. Applications will be reviewed to ensure that minimum requirements and prerequisites are met.
5. Two letters of recommendation are required (preferably from a previous instructor or employer)
6. Students will be notified of acceptance by the middle of June.
7. Start dates other than Fall will require program approval and are only recommended for part-time students.
8. Course sequencing and scheduling will be done in consultation with the BASEM Director and program faculty.
9. Students may enroll in individual classes outside of his/her student cohort, if they meet entry qualifications and space is available.

iii. Program completion requirements (credit hours, grade point average; subject matter distribution, preprogram requirements)

This program will be run with a cohort structure during the third and fourth years. Cohort learning is when a relatively small group of students (approx. 15 and 25) start and finish their degree program together. The learning will take place in a traditional and online format, or a hybrid of the two. Students will further benefit from the cohort structure as students typically hunger for the camaraderie that a cohort situation offers.

Some of the major benefits of cohort programs include:

1. Students know at the beginning of a program exactly when their program of study will end.
2. Strong cohort programs will usually have strong cohort administrators. This is necessary in order to organize and keep everything on track as the students of that particular cohort move (hopefully seamlessly) through the program.
3. Students know when they will take classes, with whom. Cohort classes are usually pre-planned. No searching through registration booklets and websites trying to find the class that they need!
4. Cohort programs offer community building and collaboration opportunities.
5. Students build relationships with people who have similar goals.
6. Networking opportunities are created among students with similar goals.

Along with the “positives” of cohort programs there may be “negatives,” depending on how you view the situation, and your specific academic and lifestyle needs. These include:

- A pre-set list of classes, dates, times, and places. Cohort students proceed in lock-step with one another, which can be good for many, but if you fall out of step you risk your future in the entire program. With a cohort a student will still have the camaraderie even if they fall out of sync of the classes. We have designed this program so that students can pick up a class outside of the cohort so that they can still complete the program.
- A strong cohort administrator. Because this person’s main objective is to keep the cohort running smoothly, you will run up against opposition if you are in need of much (or any) flexibility during the cohort program.

A cohort program of study can be the best way to operate and complete a degree if the student requires definite parameters due to personal obligation.

This course has a total number of credits of 121; 61 credits during the AASEM degree portion and 60 credits during the BASEM degree portion. Students will be required to have an overall Grade Point Average (GPA) of 2.0 out of a 4.0 scale and a 2.0 in all course work to graduate .

See the AASEM and BASEM Guided Pathways for course distribution, subject matter and prerequisites.

iv. Accreditation consideration (organization (if any) which accredits program, requirements for accreditation, plan for attaining accreditation - include costs and time frame)

Due to the strong interdisciplinary and applied nature of the curriculum of the BASEM, there is currently no program specific accreditation that is appropriate.

v. For certificates only: Name of any state, national and/or industry recognized certification(s) or licensing examination(s) for which certificate prepares the student, if applicable

N/A

G. Institutional Review Process

i. Date of Faculty Review (may include additional information, as needed)

The CSN BASEM steering committee met on January 9, 2017 and approved courses and pathway. Courses were sent out through CurricUNET and emails to all registrars at other NSHE

institutions for comments. There was no negative feedback from the other institutions concerning courses. On May 4, 2018, CSN curriculum committee approved all courses created for the BASEM degree pathway for inclusion into the next catalog.

ii. Describe the process for review and approval by the appropriate academic policy body of the institution

The institutional review process is:

1. Faculty member creates and submits proposal.
2. Next, the Department Chair reviews proposals and recommends for approval. The Department Chair:
 - a. Reviews resource requirements associated with curricular proposals.
 - b. Evaluates curricular viability and integration with other programs.
 - c. Determines relevance of the curricular proposal to the Academic Master Plan.
 - d. Reviews outcomes for measurability and assessment. This includes, but is not limited to assessing and approving an included general course curriculum map; assessing and approving an included program outcome matrix; and assessing and approving an included three-year assessment plan.
 - e. Reviews teach-out plans for degree and certificate deactivation proposals. If any outcomes or assessment measures change as a result of the teach-out plan, those items must be approved by the Office of Assessment.
 - f. Reviews course syllabi to ensure they meet Faculty Senate syllabi policy requirements.
3. Registrar and Librarian review the proposal.

The Registrar:

- a. Checks for course number availability in MyCSN. Check the NSHE Common Course Numbering Database to make sure the correct number is being used.
- b. Determines the impact/effects that new, modified, or deactivated courses have on degrees.
- c. Checks for issues/concerns regarding course prerequisites including making sure these can be coded correctly in MyCSN.
- d. Maintains the consistency of catalog information.
- e. Checks for completeness and accuracy of forms including, but not limited to Common Course Numbering forms, Program Change/Deactivations forms, etc.

The Librarian:

- a. Reviews new curriculum proposals for resources needed via library support.
 - b. Assesses the proposal to determine if the library currently has the resources needed to support the proposed course.
 - c. Assesses the proposal to determine if the library will be able to acquire any other needed resources for the course.
 - d. If there is accreditation involved with the proposal, assesses if the library plays a role and if so, assesses if the library can fulfill the duties this role requires.
4. Next, the School Dean reviews proposals and recommends for approval.

The Dean:

- a. Reviews the resource requirements associated with curricular requests.
- b. Evaluates the curricular viability and integration with other programs.
- c. Determines the relevance of the curricular request to the Academic Master Plan.

5. Next, the School Curriculum Advisory Committee (SCAC) reviews and recommends for approval.

The SCAC:

- a. Receives initial curricular requests from faculty.
- b. Reviews the correctness of the request, including completion of appropriate forms, attachment of supporting/necessary documentation, and securing appropriate signatures.
- c. Strives for consistency and prevent unnecessary redundancies in the curriculum.
- d. Follows a majority vote rule to approve decisions in curriculum matters.
- e. Follows a set timeline in coordination with the FSCC.
- f. Returns incorrect or incomplete requests to initiating faculty members for revisions as needed.

6. Next, the Screening Committee (SC) reviews proposals and recommends for approval.

The SC:

- a. Reviews the requests forwarded by the SCACs for correctness and clarity, Common Course Numbering-related issues, transfer and articulation issues, counseling concerns, attachment of supporting/necessary documentation, and any other relevant issues and/or concerns.
- b. Forwards approved requests to the FSCC meeting.
- c. Returns incorrect or incomplete requests to initiating faculty members for revisions as needed.

7. Next, the Faculty Senate Curriculum Committee (FSCC) reviews proposals and recommends for approval.

The FSCC:

- a. Implements all current NSHE and college policies and procedures for the development and revision of courses, programs, and other elements of the curriculum.
- b. Receives and acts on curriculum and program requests submitted by the SCACs.
- c. Serves as the approval authority for the inclusion of current and new curricular information to the catalog.
- d. Strives for consistency and prevent/remove unnecessary redundancies in the curriculum.
- e. Assures that all components of the curriculum adhere to the standards and policies of the Nevada System of Higher Education (NSHE) and the Northwest Commission on Colleges and Universities.

8. Finally, the proposals recommended for approval are forwarded to CSN's Vice-President for Academic Affairs (VPAA) so they may complete the administrative portion of the curriculum approval process. The process may include approvals from the following groups depending on the nature of the proposal:

- a. an approval from CSN's Executive Leadership Team.
- b. an approval from NSHE's Council of Presidents (CoP).

- b. an approval from NSHE's Academic Affairs Council (AAC).
- c. an approval from NSHE's Academic, Research and Student Affairs Committee (ARSA) and Board of Regents (BoR).
- d. an approval from the Northwest Commission on Colleges and Universities (NWCCU).

H. Readiness to begin program

i. List the educational and professional qualifications of the faculty relative to their individual teaching assignments

The following full-time faculty will teach in the BASEM program:

Douglas B Sims, Ph.D., Environmental and Geological Sciences, (1.0 FTE), tenured.

Lois Alexander-Merkler, Ph.D., Biology (0.1 FTE), tenured.

Mark Garner, Ph.D., Chemistry (0.1 FTE), tenured.

Cindy Shroba, Ph.D., Geology (0.1 FTE), tenured.

Amanda Hudson, Ph.D., Chemistry, (0.1 FTE), tenured.

Carrie Preite, Ph.D., Biology, (0.1 FTE), tenured.

John E Keller, Ph.D., Environmental and Geological Sciences, (0.1 FTE), tenured.

Melissa Giovanni, Ph.D., Environmental and Geological Sciences, (0.1 FTE), tenure tracked

ii. List the anticipated sources or plans to secure qualified faculty and staff

Faculty used to teach courses that are part of this program will come from existing faculty in the School of Science and Mathematics. If part-time instructors (PTI) are required to teach a niche course, they will be recruited from industry or government. PTIs will be required to have the same level of education and experience as CSN faculty so that students are provided the highest level of education.

iii. Contribution of new program to department's existing programs (both graduate and undergraduate) and contribution to existing programs throughout the college or university

The BASEM program provides an advanced educational opportunity (e.g. baccalaureate attainment) with a seamless articulation for students who complete the AASEM degree or those who have all the prerequisite courses completed prior to application to the program.

Adding the BASEM to the CSN curriculum combines the synergies of four different disciplines (biology, chemistry, geology, and environmental science). These programs provide a strong foundation of efficiency that strengthen the entire college, department and this program.

This program will operate co-efficiently with the pre-existing AAS in Environmental Management, Department of Physical Science endorsement, offered at CSN, making use of existing courses for the first two years during the AAS-EM track, facilities and faculty.

The BASEM will also make use of AS degree courses already offered at the college, increasing enrollments in the BASEM over time, which are offered by faculty from various programs and departments within the School of Sciences and Mathematics.

Finally, the program will collaborate with local and state-wide entities (e.g. private sector, mining, government) to identify needs for students who understand science and its application. These activities are continuously assessed to adapt to the rapidly changing needs of employers and recruitment and the economic development efforts of the State of Nevada.

- iv. **Recommendations from prior program review and/or accreditation review teams**
The program was reviewed by numerous CSN faculty and industry professionals who all advocated for its development. Program review also recommended its development.

I. Resource Analysis

- i. **Proposed source of funds (enrollment-generated state funds, reallocation of existing funds, grants, other state funds)**

The program will utilize existing funds. The upper division courses are low overhead and utilize existing full-time faculty. Income derived from tuition and fees is

- ii. **Each new program approved must be reviewed for adequate full-time equivalent (FTE) to support the program in the fifth year. Indicate if enrollments represent 1) students formally admitted to the program, 2) declared majors in the program, or 3) course enrollments in the program.**

- a. **(1) Full-time equivalent (FTE) enrollment in the Fall semester of the first, third, and fifth year.**

1st Fall semester 9

3rd Fall semester 26

5th Fall semester 29

- (2) Explain the methodology/assumptions used in determining projected FTE figures.**

Projections of FTE are based on estimated headcount enrollment discussed below. Entry into the BAS Environmental Management is limited to those students who have completed the CSN AAS Environmental Management degree or an equivalent degree from a regionally accredited institution. Additionally, the program will be capped at a maximum of 20 students per year who are admitted to complete this degree.

Assumptions include a 10% drop rate each year. The first 3 years of the program will ramp up to the maximum of 20 admitted students.

- b. **(1) Unduplicated headcount in the Fall semester of the first, third, and fifth year.**

1st Fall semester 12

3rd Fall semester 34

5th Fall semester 39

- (2) Explain the methodology/assumptions used in determining projected headcount figures.**

As presented in section F.ii. above, students currently taking biology, chemistry, geology and environmental science classes at CSN were informally polled about their interest in enrolling in a program toward a BAS in Environmental Management from CSN. Of 765 students polled (unduplicated count), 239 responded "Yes," they would be interested, 296 responded that they would possibly be interested, and 230 said they would not be interested.

If a third of those current CSN students responding "Yes" (239) to being interested in completing a BAS in Environmental Management program at CSN, this would indicate that at least 80 students per year would be interested in applying to the program. As stated above, with 296 students possibly interested in the BAS-EM program per semester, obtaining a conservative incoming class each fall semester of 20 is achievable.

CSN data tells us that 60% of students persist from the first year to the second year. That means 40% do not persist. We used the 40% to determine how many returning students we would lose from one fiscal year to the next. The rationale is that we can point to this number as "actual" data for why the percentage was chosen.

Additionally, we assume that the "returning students" all graduate at the end of their second year. So we only used the new student number to calculate the returning students for each fiscal year.

iii. Budget Projections – Complete and attach the Five-Year Program Cost Estimate and Resource Requirements Table.

See attached

J. Facilities and equipment required

i. Existing facilities: type of space required, number of assignable square feet, space utilization assumptions, special requirements, modifications, effect on present programs

The lecture halls and laboratory facilities that will house the AAS program are located on West Charleston and North Las Vegas campuses. These locations have the most up-to-date instructional resources (i.e. classrooms, laboratory equipment) available to instructors facilitating laboratory exercises.

ii. Additional facilities required: number of assignable square feet, description of space required, special requirements, time sequence assumed for securing required space

None required beyond existing facilities.

iii. Existing and additional equipment required

None required beyond existing equipment.

K. Describe the adequacy and availability of library and information resources

This was reviewed by the CSN Librarian as part of the process. Upon review, no additional resources are required from the Libraries as the current collections and services will support the needs of this program.

The CSN Libraries have a location at each of the main campuses, as well as an extensive online library, with staff available to provide instruction, support, resources and other services to all students.

CSN Library Services facilitate student success by fostering discovery and critical thinking through:

1. Exemplary instructional programs that support student learning, civic engagement, ethical use of information, and lifelong evidence-based decision making.
2. Providing equitable access to diverse viewpoints and quality resources.
3. Welcoming and highly qualified staff committed to supporting the needs of the CSN community.
4. Cross-departmental and community partnerships that enrich the College experience.
5. Positively impacting the student experience through innovative technology accessible within inclusive and engaging virtual and physical spaces.
6. Access through CSN and the NSHE system to a plethora of online systems (e.g. Sciencedirect) for journal articles, books, and research oriented materials.
7. Access to inter-library loans through the CSN library and NSHE system, making it easy for students and faculty to locate and use any resource required for teaching and learning.

As designed, the CSN library requires no additional materials to support this program at this time.

L. Student services

i. Describe the capacity of student support services to accommodate the program. Include a description of admissions, financial aid, advising, library, tutoring, and others specific to the program proposal

The College of Southern Nevada (CSN) has full capacity to support the BASEM degree program. We offer a wide variety of student support services designed to ensure our students have a successful experience and accomplish their educational goals. Programs such as those noted below are at the center of accommodating this degree program.

1) Admissions – CSN’s Admissions Office realizes that the admissions process can be very intimidating for many of our students, which is why we have knowledgeable staff who can address concerns and help students navigate the process. Some of the services provided are:

- Assisting future and returning students, international students, and gifted minor students with the admission process to address issues such as testing, residency requirements.
- Course Registration Information for in class and on-line courses.
- Cashier’s Office.
- Records and transcripts.
- Transfer information to CSN and other NSHE institution and transfer credit evaluation.
- Declaration of a Major.

2) Financial Aid - CSN understands that paying for a college education can be challenging for our students. Services and Information available for students include:

- Free Application for Federal Student Aid (FAFSA workshops on all of the main campuses to assist students and their parents with completing applications.
 - Academic and CSN Scholarships.
 - Federal Work Study Opportunities.
 - Grants and Loans.
 - Cost of Attendance.
-
- Dual and concurrent enrollment programs for qualified high school students that want to get a head start on their higher education.

3) Advising & Coaching Services - Our advisors/success coaches provide crucial assistance for new students who need help navigating the ins and outs of CSN. They can also help every student gain the skills needed to succeed in college. Specifically, the department provides the following:

- Academic advising and course planning for first-time college students, undecided students without a declared major and new and returning Associate of General Studies (AGS) Students.
- Skill-coaching in time management, self-advocacy, goal clarification, study skills and the development of personal plans for academic success.
- Clarification of institutional policies and procedures.
- Referrals to other campus resources.
- Student Orientation for Success (SOS).
- Online Advising Services (ACS Chat Room) and Email Communication.
- E-ALERT referrals from faculty.
- Coaching services.

4) Library Services - Facilitate student success by fostering discovery and critical thinking through:

- Exemplary instructional programs that support student learning, civic engagement, ethical use of information, and lifelong evidence-based decision making.
- Providing equitable access to diverse viewpoints and quality resources.
- Welcoming and highly qualified staff committed to supporting the needs of the CSN community. Library staff offers support for students completing research assignments and students can also complete an interactive introduction to a research tutorial. Additionally, students can bring their topic or assignment to one of the libraries for one-on-one assistance locating and citing quality information with a librarian.
- Cross-departmental and community partnerships that enrich the college experience.
- Positively impacting the student experience through innovative technology accessible within inclusive and engaging virtual and physical spaces.

5) Centers for Academic Success (Tutoring) –The goal of the Centers for Academic Success (CAS) is to provide quality academic assistance and support classroom instruction through several academic support services to foster students' overall academic success through:

- Math/Science resource center.
- Communication Center.
- Reading and Writing Center.
- Supplemental Instruction.
- One-on-One Tutoring.
- Center Tour, Class Visit, & Workshop Requests.
- Online Appointment Scheduler.
- Other Support Services.

6) Student Recruitment & College Connections – Consists of dedicated professionals who provide personal assistance to prospective and newly admitted CSN students throughout the entire college exploration, intake, admissions, and course registration process. In addition to working with traditional high schools, recruiters also work with local businesses, community

groups, government agencies, and underserved populations to increase access to CSN's many educational and occupational opportunities.

7) Disability Resource Center (DRC) - The DRC makes every effort to ensure each CSN campus and learning center is fully accessible to students with disabilities. Our Disability Resource Center not only offers accommodations for students in need, but also gives them the opportunity to speak with one of our highly qualified disability specialists. A disability specialist will answer questions and make sure potential obstacles are addressed up front so nothing interferes with students' academic pursuits. DRC also offers adaptive equipment to those who qualify to ensure equal access to all CSN sponsored activities. Services include:

- Classroom Accommodations (Note Taking Assistance, Lab Assistant).
- Testing Accommodations (Extended Time, Reader, Scibe).
- Sign Language Interpreter.
- Alternative Text: (view more information below).
- Adaptive Equipment Loan.
- Adaptive Computer Lab.

8) Veterans Education and Transition Services (VETS) – The VETS Center works as a liaison between CSN students and the Department of Veterans Affairs to assist veterans and their dependents with their educational benefits and academic needs. The Center not only certifies enrollment, it provides timely and accurate information on VA related issues, as well as a place for our veteran students to socialize and study.

Student benefits for veterans include:

- Assistance with educational benefits application.
- CSN admission assistance.
- Liaison to veteran's regional office.
- Study location.
- Personal academic counseling.
- Information on local job opportunities.
- Veteran work-study possibilities.

i) ReEntry Program - Assists individuals with significant barriers to education and/or employment, including single parents, displaced homemakers, students with disabilities, educationally disadvantaged students and individuals interested in nontraditional occupations (for their gender) in Career and Technical Education (CTE) fields.

j) TRIO Student Support Services Program – Is funded through a grant from the U.S. Department of Education to provide guidance, advocacy and academic support to low income, first generation and disabled students seeking to earn an associate's degree and/or transfer to a four-year institution.

k) Child Care/Early Childhood Education (ECE) Lab - The ECE Lab offers programs for children age 6 months through 5 years and functions as a laboratory observation and practicum site for students studying early childhood education and related fields. ECE has served CSN for over 40 years providing:

- Hands-on, field based experiences in the ECE Lab Program.
- Model care and education programs for children ages 6 months through 5 years.
- Parent education and involvement programs.
- Community partnerships.

ii. Describe the implications of the program for services to the rest of the student body

The BASEM degree program will afford many non-traditional and place-bound CSN students to take courses exposing them to the Environmental Management field and producing a strong technical background in the sciences. Because it is a technical-generalist degree within the sciences, that focuses primarily on the understanding of our natural and man-made environments, students will complete specializations within biology, chemistry, geology or environmental science. Many of these same courses can be used to fulfill other STEM degree program requirements.

If a student, for example, with an AS in Biological Science decides to pursue the BASEM degree, it would eliminate the need to repeat many of those courses. Students who already have an AAS in Environmental Management are also prime candidates for the BASEM. True to most science degrees, this program will require significant field work, lab work, hands on learning, and other data-oriented efforts outside of the classroom setting, which will benefit all students taking these courses, regardless of their declared STEM degree program.

M. Consultant Reports – If a consultant was hired to assist in the development of the program, please complete subsections A through C. A copy of the consultant’s final report must be on record at the requesting institution.

i. Names, qualifications and affiliations of consultant(s) used

N/A

ii. Consultant’s summary comments and recommendations

N/A

iii. Summary of proposer's response to consultants

N/A

N. Articulation Agreements

i. Articulation agreements were successfully completed with the following NSHE institutions. (Attach copies of agreements)

The program is self-articulating with the AASEM degree at CSN.

ii. Articulation agreements have not yet been established with the following NSHE institutions. (Indicate status)

The program is self-articulating with the AASEM degree at CSN.

iii. Articulation agreements are not applicable for the following institutions. (Indicate reasons)

The program is self-articulating with the AASEM degree at CSN.

O. Summary Statement

Faculty in the Physical Sciences Department were approached by industry representatives with concerns about the lack of hands-on-training graduates have even after completing a bachelor's degree. They expressed concern about the cost of training a recent graduate with little hands-on-training (experiential learning), having to invest on the job training upwards of 2 to 5 years. According to the Nevada Department of Administration, the population in Nevada is expected to grow through 2024, and beyond, placing additional stress on environmental resources and increasing the demand for technically-trained scientists. Consequently, careers in the sciences related to environmental management are projected to grow 11% through 2024. This program will provide a

pathway for non-traditional and place-bound students to earn a baccalaureate degree in close proximity to their homes. This is important because, upon degree completion, these students will fill projected job gaps in Nevada and surrounding areas. Non-traditional and place-bound students are unlikely to pursue higher education unless it is in close proximity to their homes. CSN is in a unique position to provide this access to these students.

The proposed program meets the needs of under-represented members of our community and employers, as well as fills job gaps in the State of Nevada. Finally, this program has the support and backing from the Clark County Water Reclamation District, Nevada Department of Environmental Protection, Kinross-Round Mountain Mining Corporation, Broadbent & Associates, Ninyo & Moore, NOVA Engineering, Western Technologies, OGI Environmental, SWCA Environmental Consultants, Terracon, Wright Engineers, and SW Geotechnical Engineering.

Proposed BAS – Environmental Management Guided Pathway

Fall 2020	Fall Semester (1st)	Course	
	CHEM 220	Introductory Organic Chemistry*	4
	CHEM 310	Environmental Chemistry	3
	BIOL 341	Principles of Ecology	3
	ENV 345	Env. Regulations, History, Law and Methods (OL)	3
	NRES 322	Soils	3
			16 credits
Spring 2021	Spring Semester (2nd)	Course	
	BIOL 211	Introduction to Field Biology *	4
	BIOL 305	Introduction to Conservation Biology	3
	ENV 260	Environmental Sampling and Analysis*	4
	GEOL 334	Environmental Geology	3
			14 credits
Fall 2021	Fall Semester (3rd)	Course	
	ENV 201	Environmental Toxicology	3
	ENV 360	Environmental Assessment Methods (Hybrid)	4
	GEOL 448	Field Geology I*	3
	GEOL 474	Hydrogeology	3
	XXX #	Capstone course*	3
			16 credits
Spring 2022	Spring Semester(4th)	Course	
	CHEM 330	Analytical Chemistry*	4
	GEOL 330	Introduction to Geochemistry	3
	GEOL 362	Principles of Stratigraphy and Sedimentation	4
	XXX #	Capstone course*	3
			14 credits
Total Credits			60

Note: The total number of credits required for the BAS in Environmental Management degree is 121 with 45 upper division (300/400 level) credits. This includes a completed AAS-EM degree of 61 credits.

OL: online

Hybrid: classroom and online

*: lab/course fee

Capstone courses (6 credits total) will have the following prefix depending on students focus:

- BIOL 492; Undergraduate Research
- CHEM 495 and 496; Senior Research in Chemistry I and II
- GEOL 495; Independent Study and Research
- ENV 492; Undergraduate Research

Program Resource Requirements. Indicate all resources needed including the planned FTE enrollment,
 projected **College/University: College of Southern Nevada** **Program: BAS Environmental Management**

I. PLANNED STUDENT ENROLLMENT

			FY 1: FY 21		FY 3: FY 23		FY 5: FY 25	
			FTE	Headcount	FTE	Headcount	FTE	Headcount
	A. New enrollments to the Institution		9	12	26	34	29	39
	B. Enrollments from Existing Programs		0	0	0	0	0	0

II. REVENUE

			FY 1: FY 21		FY 3: FY 23		FY 5: FY 25	
			On-going	One-time	On-going	One-time	On-going	One-time
	1. New Appropriated Funding Request		\$0	\$0	\$0	\$0	\$0	\$0
	2. Institution Funds		\$21,130	\$0	\$52,741	\$0	\$62,239	\$0
	3. Federal (e.g. grant, appropriation)		\$0	\$0	\$0	\$0	\$0	\$0
	4. New Tuition Revenues (registration fee) from Increased Enrollments*		\$32,025	\$0	\$83,265	\$0	\$92,873	\$0
	5. Other Student Fees (associated with the program)*		\$0	\$0	\$0	\$0	\$0	\$0
	6. Other (i.e., Gifts)		\$0	\$0	\$0	\$0	\$0	\$0
	Total Revenue		\$53,155	\$0	\$136,006	\$0	\$155,112	\$0

*revised May 2018

III. EXPENDITURES

			FY 1: FY 21		FY 3: FY 23		FY 5: FY 25	
			On-going	One-time	On-going	One-time	On-going	One-time
	A. Personnel Costs							

	1. FTE (Total FTE for all personnel types)	0.66	0	1.56	0	1.71	0
	Faculty	0.56	0	1.26	0	1.41	0
	Adjunct Faculty	0	0	0.1	0	0.1	0
	Grad Assts	0	0	0	0	0	0
	Research Personnel	0	0	0	0	0	0
	Directors/Administrators	0	0	0	0	0	0
	Administrative Support Personnel	0.10	0	0.20	0	0.20	0
	Other: _____	0	0	0	0	0	0
		Expenditures for personnel type below must reflect FTE levels in Section					
	2. Faculty	\$33,454	\$0	\$75,272	\$0	\$84,233	\$0
	3. Adjunct Faculty	\$0	\$0	\$2,475	\$0	\$2,475	\$0
	4. Graduate Assistants	\$0	\$0	\$0	\$0	\$0	\$0
	5. Research Personnel	\$0	\$0	\$0	\$0	\$0	\$0
	6. Directors/Administrators	\$0	\$0	\$0	\$0	\$0	\$0
	7. Administrative Support Personnel	\$5,996	\$0	\$15,590	\$0	\$22,605	\$0
	8. Fringe Benefits	\$12,705	\$0	\$27,815	\$0	\$30,805	\$0
	9. Other:	\$0	\$0	\$0	\$0	\$0	\$0
	Total Personnel Costs	\$52,155	\$0	\$121,152	\$0	\$140,118	\$0

4. Communications	\$0	\$0	\$0	\$0	\$0	\$0
5. Materials and Supplies	\$1,000	\$0	\$2,000	\$0	\$4,000	\$0
6. Rentals	\$0	\$0	\$0	\$0	\$0	\$0
7. Marketing materials and Advertising	\$0	\$0	\$0	\$0	\$0	\$0
8. Miscellaneous	\$0	\$0	\$12,854	\$0	\$10,994	\$0
Total Operating Expenditures	\$1,000	\$0	\$14,854	\$0	\$14,994	\$0

	FY 1: FY 21		FY 3: FY 23		FY 5: FY 25	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						
1. Library Resources	\$0	\$0	\$0	\$0	\$0	\$0
2. Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Total Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL EXPENDITURES (IIIA + IIIB + IIIC):	\$53,155	\$0	\$136,006	\$0	\$155,112	\$0

Budget Notes (optional):