Academic Program Review
Cardiorespiratory Sciences
Associate of Applied Science

Spring 2019

Table of Contents

Introduction

The AAS Cardiorespiratory Science program is a part of the Health Related Professions Department which is, in turn, a division of the Engelstad School of Health Sciences. The CSN Cardiorespiratory Sciences department consists of 3 full-time faculty, as well as 1 classified administrative assistant.

Cardiorespiratory Sciences (CRS) is a multi-disciplined, multi-credentialed program, preparing students in care, management, and life-support of individuals having deficiencies and abnormalities associated with the cardiopulmonary system. A successful graduate of this program will obtain credentials from the American Heart Association, Cardiovascular Credentialing International, and the National Board for Respiratory Care.

Respiratory Care Practitioners (RCPs) and cardiac technicians work with people of all ages in hospitals, clinics, offices, home health, schools, public health, military, and the Federal Government. As our nation moves toward health care reform, these practitioners will continue to be in a valuable profession, thus ensuring job security.

"Respiratory Therapist" was named as #26 out of the top "100 Best Jobs" according to U.S. News 2019.

The Cardiorespiratory Sciences Program provides a quality academic experience preparing Respiratory Care Practitioners (RCPs) and Cardiac Technicians. The graduate will possess the attitudes, skills, and knowledge required to think critically, communicate effectively, and provide self-direction while administering care.

This program emphasizes developing competencies that integrate protocols, clinical practice guidelines, and critical pathways into an efficient cardiorespiratory care plan. The program includes classroom, laboratory, and clinical practice instruction. Critical thinking, patient assessment, and critical care skills are emphasized in preparing the student/graduate to sit for both certification and registry level testing.

College, School, Mission Statements

CSN Mission Statement

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

Engelstad School of Health Sciences Mission Statement

The mission of the Engelstad School of Health Sciences is to provide high-quality, student-centered, certificate and degree programs offered to meet the needs of state and local communities.

Background: AAS Cardiorespiratory Science

The AAS Cardiorespiratory Science program has been active since 1993. The program had started as a certificate of achievement program but to comply with acceleration and national credentialing stands the program was advanced to an AAS degree. The cardiorespiratory program AAS degree requires 81 credits with 31 credits of general education coursework and 50 credits of special program requirements.

The degree sheet follows on the next page (Figure 1).

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS)

Cardiorespiratory Sciences

REQUIRED CREDITS: 81 **DEGREE CODE: CARD-AAS**

PROGRAM DESCRIPTION

Cardiorespiratory Sciences (CRS) is a multi-disciplined, multi-credentialed program preparing students in care, management, and life-support of individuals having deficiencies and abnormalities associated with the cardiopulmonary system. A successful graduate of this program will obtain credentials from a national laboratory credentialing agency, the American Heart Association, Cardiovascular Credentialing International, and the National Board for Respiratory Care.

The Cardiorespiratory Sciences Program provides a quality academic experience preparing Respiratory Care Practitioners and Cardiac Technicians. The graduate will possess the attitudes, skills, and knowledge required to think critically, communicate effectively, and provide self-direction while administering care.

The program emphasizes developing competencies that integrate protocols, Clinical Practice Guidelines, and critical pathways into an efficient cardiorespiratory care plan.

A limited entry program, students must attend a health programs orientation and meet with a health programs advisor for additional counseling prior to acceptance in the program. The Cardiorespiratory Sciences Program is accredited by The Commission on Accreditation for Respiratory Care (CoARC). The Commission on Accreditation for Respiratory Care, 1248 Harwood Road, Bedford, TX 76021-4244, (817) 283-2835 **www.coarc.com**.

STUDENT LEARNING OUTCOMES

- Acquire and evaluate clinical data.
- Assess the cardiopulmonary status of patients.
- Practice abilities required for performance of prescribed diagnostic studies such as: obtaining blood samples, blood gas analysis, pulmonary function testing, and polysomnography.
- Evaluate data to assess the appropriateness of prescribed respiratory care.
- Construct patient, family, and community education programs.
- Practice prescribed respiratory care treatments, managing life support activities, evaluating and monitoring patient responses to such therapy and modifying the prescribed therapy to achieve the desired therapeutic objectives.

PLEASE NOTE - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

GENERAL EDUCATION REQUIREMENTS (31 CREDITS)

	CR	SEMESTER
MATHEMATICS MATH 124 or above	3	
ENGLISH COMPOSITION ENG 100 or 101 or 102 or 113 or 114	3-5	
COMMUNICATIONS BUS 108; COM 101, 102, 215; JOUR 102; THTR 105	3	
HUMAN RELATIONS ALS 101; ANTH 101, 112, 201, 205; HIST 105, 106, 107, 150, 151, 210, 247, 260; HMS 130, 135B, 265B; MGT 100B, 283; PHIL 135; PSC 201; PSY 101, 102, 207, 208, 261; SOC 101 or above	3	
NATURAL SCIENCE BIOL 223 **and** 224 **and** 251	12	
FINE ARTS/HUMANITIES/ SOCIAL SCIENCES AM 145 or above; ANTH 101 or above (except 102); ART 101 or above; COM 101 or above; DAN 101; ECON 100 or above; ENG 223 or above; GEOG 106 or above; HIST 101 or above; International Languages 101B or above; MUS 101 or above; PHIL 101 or above; PSC 101 or above; PSY 101 or above; SOC 101 or above; THTR 100 or above; WMST 113	3	
U.S. AND NEVADA CONSTITUTIONS PSC 101; or HIST 101 **and** HIST 102; or HIST 101 **and** HIST 217	4-6	

SPECIAL PROGRAM REQUIREMENTS (50 CREDITS)

			CORE REQUIREMENTS (46 credits)
CRS 111	Introductory Concepts of Cardiorespiratory Sciences	3	
CRS 112	Introductory Concepts of Cardiorespiratory Equipment	1	
CRS 115	Clinical Practicum I	4	
CRS 121	Advanced Concepts of Cardiorespiratory Sciences	3	
CRS 122	Advanced Concepts of Cardiorespiratory Equipment	1	
CRS 123	Applied Cardiorespiratory Assessment	3	
CRS 124	Cardiorespiratory Pharmacology	3	
CRS 125	Clinical Practicum II	4	
CRS 135	Clinical Practicum III	3	
CRS 211	Neonatal and Pediatric Cardiorespiratory Care	3	
CRS 212	Neonatal and Pediatric Cardiorespiratory Equipment	1	
CRS 213	Cardiorespiratory Diagnostics	3	
CRS 214	Cardiorespiratory Diagnostics Equipment	1	
CRS 215	Clinical Practicum IV	4	
CRS 221	Continuity of Cardiorespiratory Care	3	
CRS 222	Seminar for Success	1	
CRS 225	Clinical Practicum V	4	
HIT 117B	Medical Terminology I	1	
Choose one group (4 credits)			
Group 1:			
EGG 131	Technical Physics I	3	
EGG 131L	Technical Physics I - Lab	1	
Group 2:			
PHYS 110	Conceptual Physics (or above)	4	

CR SEMESTER

NOTE

- Course numbers with the "B" suffix may be non-transferable for a NSHE baccalaureate degree.
- Course numbers with the "H" suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit www.csn.edu/honors.
- In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
- Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.
- This is a limited-entry program. Some of these courses are program prerequisites and MUST be completed before a student is considered eligible for entry into the Program. Students MUST attend a Health Programs orientation and meet with a Health Programs advisor for additional advisement.

Figure 1: AAS Cardiorespiratory Science 2016-17 degree sheet. The degree sheet has been constant since 2015-16.

Program Evaluation: Enrollment

Overall enrollment has trended upward over the last three years

Enrollment Totals for Cardiorespiratory Science Programs (Fall 2015 – Fall 2018)

SCHOOL NAME	DEPT NAME	PROGRAM CODE	PROGRAM NAME	Fall16	Fall17	Fall18	Grand Total
Engelstad School of Health Sciences	Health Related Professions	CARD-AAS	Cardiorespiratory Sciences- AAS	33	36	43	**112**

Program Evaluation: Completions

The program completion rate is high with a current retention rate of 97%

Graduation Totals

SCHOOL NAME	DEPT NAME	PROGRAM CODE	PROGRAM NAME	Academic Year of Graduation Date* 16	17	18	Grand Total
Engelstad School of Health Sciences	Health Related Professions	CARD-AAS	Cardiorespiratory Sciences- AAS	14	12	20	46

Accreditation

This AAS program has obtained accreditation with the Commission on Accreditation for Respiratory Care. The program must file an annual report that includes benchmarks in The following areas.

(Figure 2)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	Threshold	Current Period 3 year average 2017-2015	Previous Period 3 year average 2016-2014
Retention	N/A	100%	92%	100%	95%	82%	90%	86%	85%	70%	97%	95%
Job Placement	70%	92%	92%	86%	100%	100%	62%	100%	75%	0%	90%	92%
CRT Credentialing Success	80%	100%	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%
RRT Credentialing Success	70%	100%	92%	86%	100%	100%	75%	85%	88%	0%	92%	92%
TMC High Cut Score Pass Rate	70%	92%	100%	100%	N/A	N/A	N/A	N/A	N/A	0%	97%	100%
Overall Employer Satisfaction	N/A	100%	N/A	100%	100%	100%	100%	100%	100%	80%	100%	100%
Overall Graduate Satisfaction	N/A	100%	N/A	100%	100%	100%	100%	100%	100%	80%	100%	100%
On-Time Graduation Rate	95%	100%	100%	64%	100%	100%	100%	85%	88%	70%	88%	88%

Figure 2: Outcome table from Program 2018 annual report to CoARC

The program successfully completed a site visit review in 2018 and is through the year 2028. (Appendix A)

Demand for Cardiorespiratory Science Courses

There is considerable demand for Cardiorespiratory Science courses. Figure 3 shows the number of students that have signified interest by declaring CRS as their major. The CRS program is a limited entry program the total number of students identified by institutional research is the total number of declared students not the total number admitted to the program. The total number of admitted students is capped by our credentialing board at 25 students annually. the total number of enrolled has dropped with the phasing out of the AAS program and transition to a BAS program.

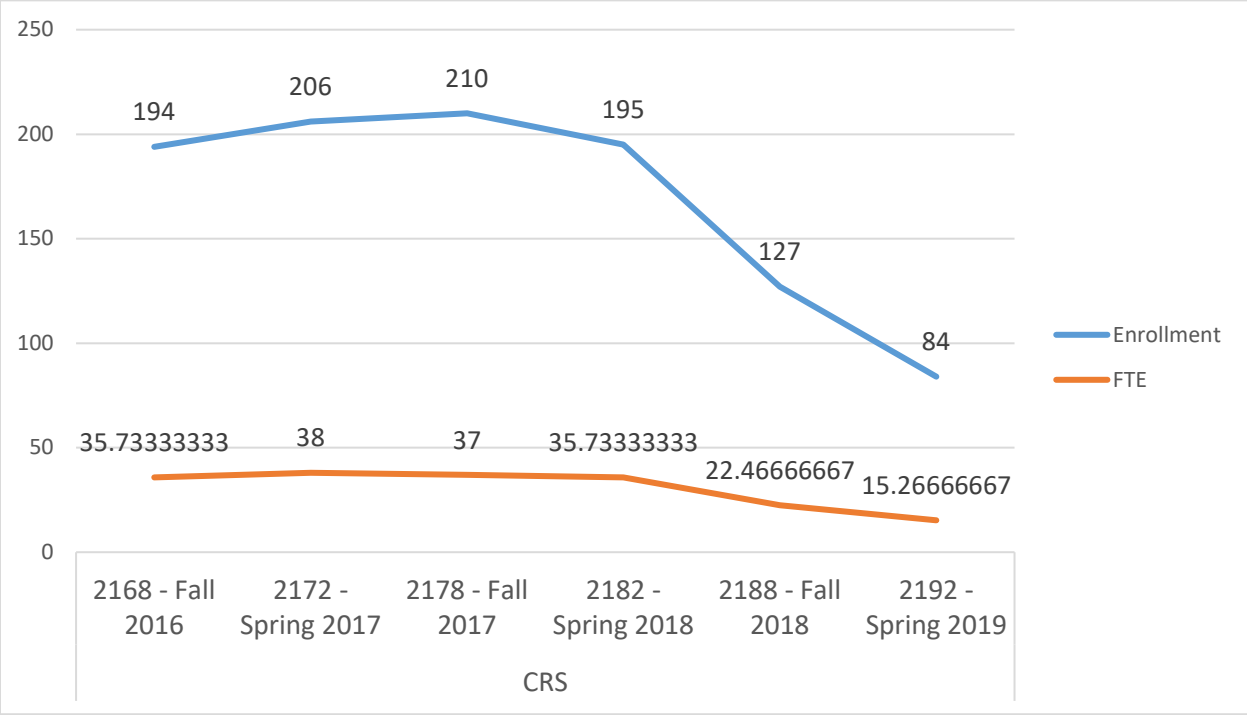

Figure 3: Overall number of students that have declared Cardiorespiratory Science as their major.

STUDENT LEARNING OUTCOMES

The primary student outcomes are:

- Acquire and evaluate clinical data.
- Assess the cardiopulmonary status of patients.
- Practice abilities required for the performance of prescribed diagnostic studies such as: obtaining blood samples, blood gas analysis, pulmonary function testing, and polysomnography.
- Evaluate data to assess the appropriateness of prescribed respiratory care.
- Construct patient, family, and community education programs.
- Practice prescribed respiratory care treatments, managing life support activities, evaluating and monitoring patient responses to such therapy and modifying the prescribed therapy to achieve the desired therapeutic objectives.

These outcomes can best be measured by the graduate's performance on the National Board of Respiratory Care's national credentialing tests. These include the Therapist multiple choice exam. (Figure 4)

	2018	2017	2016	2015
Graduates	20	12	13	14
Passed CRT	16	12	13	14
% Passed	80%	100%	100%	100%
Threshold	80%	80%	80%	80%

Figure 4 data reported by the NBRC for 2015-2018

And the NBRC Clinical Simulation Exam (Figure 5)

	2018	2017	2016	2015
Graduates	20	12	13	14
Passed RRT	14	12	12	12
% Passed RRT	70%	100%	92%	86%
Threshold	0%	10%	10%	10%

Figure 5 data reported by the NBRC for 2015-2018

Note 2018 data is not complete in that all graduates have not attempted the exam yet.

The program has been recognized for the last four years with the Distinguished Registered Respiratory Therapist Credentialing Success Award (appendix 2)

Program Narrative: Program – AAS Cardiorespiratory Science

Core Mission

1. **How does this program relate to the Mission and Core Themes of the College?**
    - The AS Cardiorespiratory Science program is designed to create opportunities and enrich the lives of our diverse students by providing them with inclusive access to the quality educational background needed to pursue national credentialing, licensure and employment in the field of Respiratory Care

2. **To the best of your knowledge, how and to what extent is this program essential due to state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?**
    - All applicants for national credentialing must be graduates of CoARC approved the program for respiratory care. The CSN AAS is the only public respiratory program in the state of Nevada.
    - Respiratory Therapists in the state of Nevada are licensed by The Board of Medical Examiners. One of the requirements for obtaining licensure is national credentialing.

3. **How and to what extent does this program relate to programs at other NSHE institutions (for example, overlapping programs, articulation or transfer relationships, etc.)?**
    - The AAS Cardiorespiratory Science program allows students to continue their education at CSN to receive a BAS with an emphasis in Respiratory Care
4. **How and to what extent does this program relate to programs at non-NSHE colleges in southern Nevada?**
    - The AAS Cardiorespiratory Science program is not designed to transfer to non-NSHE schools in southern Nevada.
    - As long as students take the correct combination of courses to transfer, the AAS Cardiorespiratory Science program allows for transfer to out of state BAS and MS respiratory programs.

5. **How and to what extent does this program depend upon prerequisite courses from other disciplines at CSN?**
    - The AAS cardiorespiratory program is heavily reliant on a number of different content areas. A particularly important area is the biology department students are required to complete BIOL223, BIOL224, BIOL251 before being admitted to the CRS program.

6. **How and to what extent does this program utilize other college resources for academic support (for example, library, technology, counseling, disability resource center, tutoring, writing or math centers, etc.)?**
    - Library: The CRS program maintains collections of textbooks in the library reference sections at the West Charleston campus.
    - Technology: Many instructors require the use of computers in their classrooms. For this reason, we are dependent upon OTS to provide us with the technology required.

- Math Resource Centers: Math resource centers are important for helping students master the math courses which serve as gateways into Cardiorespiratory science courses.
- Other Services: Testing, Counseling, and the Disability Resource Center are often utilized by Cardiorespiratory Science students.

Quality

7. **Does this program have an advisory board, or does the department have an advisory board relevant to this program?**
    - The Cardiorespiratory Science Program has an advisory board. It is comprised of members of the community including physicians, hospital administration, Current and former students, and member of the community at large. Full-time faculty makes decisions regarding curriculum in concert with college policies, the advisory board, and accreditation standards.

8. **If this program has a specialized accreditation, is this accreditation necessary for alumni licensure or employability?**
    - Yes, the program must maintain its accreditation with CoARC unable for graduates to be eligible to attempt the national credentialing exams. Being nationally accredited is now the minimum standard for licensure in all 50 states in the United States of America.

9. **How and to what extent does this program contribute to CSN's regional or national reputation?**
    - Cardiorespiratory Science students and faculty enhance CSN's regional and national reputation. CSN is recognized locally as the premier respiratory care program in the state with an ongoing 100% satisfaction rating from employers.
    - Students do extensive volunteer work in the community with such entities as the American Lung Association of Nevada and Opportunity Village.

10. **How and to what extent does this discipline/program support student extracurricular activities at CSN?**
    1. The program and department faculty support the following student extracurricular activities:
        - CSN CRS Students Club (Advisors: Professors Art Little and Cecilia Degenhart)
        - The CSN CRS students are regular volunteers at a number of community events

Demand

11. **Describe the level and nature of external demand for this program (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?**

    - Employment of respiratory therapists is projected to grow 23 percent from 2016 to 2026, much faster than average for all occupations. Growth in the middle-aged and older population will lead to an increased incidence of respiratory conditions such as pneumonia, chronic obstructive pulmonary disease (COPD), and other disorders that can permanently damage the lungs or restrict lung function. The aging population will, in

turn, lead to an increased demand for respiratory therapy services and treatments, mostly in hospitals.

- In addition, a growing emphasis on reducing readmissions in hospitals may result in more demand for respiratory therapists in nursing homes and in doctors' offices.
- Advances in preventing and detecting disease, improved medications, and more sophisticated treatments will also increase the demand for respiratory therapists. Other conditions affecting the general population, such as respiratory problems due to smoking and air pollution, along with respiratory emergencies, will continue to create demand for respiratory therapists.

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Respiratory Therapists, on the Internet at https://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (visited *February 12, 2019*).

1. **Describe the level and nature of external financial or practical support for this program (for example, grants, donations, employer or clinical partnerships, etc.)?**
    - The program was originally endowed with a grant from the Engelstad Family Foundation in 2009.
    - Subsequently, it has annually received money for capital equipment from Perkins Grants.

2. **What other options exist for students in the region to earn this degree or certificate?**

    - There are no other public CoARC accredited schools in the state of Nevada there are however two proprietary schools.

Areas of Concern and Recommendations

Department: Cardiorespiratory Sciences

Academic Year: 2017-18

Identified Areas of Concern:

1. **The program accrediting body (CoARC) the national credentialing organization and the national industry organization have all issued position papers supporting the moving of the moving of the entry-level degree for cardiorespiratory Science to a Bachelor degree at minimum. CoARC will no longer issue accreditation to any new programs that are not Bachelor level. They have asked that all program either transition to a Bachelor level or enter into a transfer agreement with a school that does.**
    - Proposed Solution: The program has already begun steps to merge the AAS degree with the existing BAS Cardiorespiratory degree so that the only track will be a BAS. Plans have been approved by the curriculum committee. The program is currently working with CoARC to extend accreditation to the BAS program.

2. **Due to the high number of credits currently needed to obtain an AAS in Cardiorespiratory Sciences (81) it is not unusual for students to both cap out their financial aid as well as run into the College excessive credit fees.**
    - Proposed Solution: By transferring to a BAS the number of credits that are used for both financial aid and excess credit fee consideration would be increased making it much less likely for students to run into these pitfalls.

I agree with the identified areas of concern and proposed solutions presented by the program director.

_____ _____

Cassie Gentry, HRP Department Chair Date

Appendix

The appendix contains data provided to the Department by CSN Institutional Research.

- Appendix A: Cardiorespiratory Science: Notification of Accreditation
- Appendix B: Cardiorespiratory Science: Certificate if of Distinguished Registered Respiratory Therapist Credentialing Success

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COARC~

COMMISSION ON ACCREDITATION
FOR RESPIRATORY CARE

March 23, 2018

Mike Richards, PhD, President
Respiratory Care Program
College of Southern Nevada
6375 W Charleston Blvd , W32E
Las Vegas, NV 89146

Dear Dr. Richards:

RE: Program Number 200452

At its March 2018 meeting, the Commission on Accreditation for Respiratory Care (CoARC) voted to confer Continuing Accreditation to the AAS Degree Entry into Respiratory Care Professional Practice Program at College of Southern Nevada.

The recent accreditation review conducted by CoARC recognizes the Program's compliance with the nationally established accreditation Standards. The next comprehensive evaluation of the Program, including an on-site review, is scheduled to occur no later than 2028.

In addition to the comprehensive evaluation, CoARC regularly monitors the Program's compliance with established outcomes assessment thresholds (Standard 3.09) through the Annual Report of Current Status submitted annually by the Program as well as other documentation that may be requested. The next Annual Report of Current Status is due by July 1, 2018.

The Commission commends you and your colleagues for your commitment to continuous quality improvement in education, as demonstrated by your participation in programmatic accreditation.

Sincerely,

Thomas R. Smalling, PhD, RRT, RPFT, RPSGT, FAARC
Executive Director

cc: Janice Glasper, MEd, Dean
Arthur Little, MBA, RRT, Program Director
Sarah Varekojis, PhD, RRT, Referee (Emailed)

1248 Harwood Rd• Bedford •Texas • 76021-4244
www.coarc.com (817) 283-2835 Office (817) 354-8519 Fax

CoARC

Commission on Accreditation for Respiratory Care

DISTINGUISHED REGISTERED RESPIRATORY THERAPIST
CREDENTIALING SUCCESS

presented to

COLLEGE OF SOUTHERN NEVADA

In recognition of the program's success in inspiring its graduates to achieve their highest educational and professional aspirations.

JULY 17, 2018

COMMISSION ON ACCREDITATION FOR RESPIRATORY CARE

CoARC President

CoARC Executive Director

Academic Program Review
Bachelor of Applied Science
Cardiorespiratory Sciences Program
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The Cardiorespiratory Sciences Program provides a quality academic experience preparing Respiratory Care Practitioners (RCPs) and Cardiac Technicians. The graduate will possess the attitudes, skills, and knowledge required to think critically, communicate effectively, and provide self-direction while administering care.

This program was developed as an adjunct to the already established AAS cardiorespiratory degree. Students in the AAS CRS degree program graduated with a minimum of 81 credit hours. Changes in the health care industry in general and in Respiratory specifically has led to an increased demand for therapists with advanced degrees. It is becoming increasingly common that supervisory positions in Respiratory Care require a Bachelor degree as a minimum. To that end, a program for previous AAS graduates was developed with an emphasis on such areas as leadership, education and mentoring, and research. This program builds on the AAS degrees stated goals of developing competencies that integrate protocols, clinical practice guidelines, and critical pathways into an efficient cardiorespiratory care plan. The program includes classroom, laboratory, and clinical practice instruction. Critical thinking, patient assessment, and critical care skills are emphasized in preparing the student/graduate to sit for both certification and registry level testing.

College, School, Mission Statements

CSN Mission Statement

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

Engelstad School of Health Sciences Mission Statement

The mission of the Engelstad School of Health Sciences is to provide high-quality, student-centered, certificate and degree programs offered to meet the needs of state and local communities.

Background: BAS Cardiorespiratory Science

The BAS Cardiorespiratory Science was approved in 2012 and admitted its first cohort in AY 2015-2016. The total number of credits needed for a BAS CRS degree is 121 with 47 credits of general education classes and 74 program-specific credits.

The degree sheet follows on the next page (Figure 1).

Cardiorespiratory Sciences

LIMITED ENTRY

BACHELOR OF APPLIED SCIENCE (BAS) REQUIRED CREDITS: **121**

DEGREE CODE: **CRS-BAS**

NOTE
- Course numbers with the "B" suffix may be non-transferable for a NSHE baccalaureate degree.
- Course numbers with the "H" suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit www.csn.edu/honors.
- In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
- Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.

CARDIORESPIRATORY SCIENCES PROGRAM

GENERAL EDUCATION REQUIREMENTS (47 CREDITS)

MATHEMATICS (3 credits)
Recommended: MATH 124 College Algebra

ENGLISH COMPOSITION (6-8 credits)
Required: ENG 333 Professional Communications Recommended: ENG 101 Composition I

COMMUNICATIONS (6-8 credits)
Required: COM 340 Cross-cultural Communication in Healthcare Recommended: COM 101 Oral Communication

HUMAN RELATIONS (3 credits)
Recommended: PHIL 135 Introduction to Ethics

NATURAL SCIENCE (16 credits)
Required: BIOL 189 **and** 223 **and** 224 **and** 251

FINE ARTS/HUMANITIES/SOCIAL SCIENCES (9 credits)
Required: PHIL 302 and 311
Recommended: PSY 101 General Psychology

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)
Recommended: PSC 101 Introduction to American Politics

SPECIAL PROGRAM REQUIREMENTS (74 CREDITS)

CORE REQUIREMENTS (70 credits)

CRS 112	Introductory Concepts of Cardiorespiratory	1
CRS 115	Clinical Practicum I	4
CRS 121	Advanced Concepts of Cardiorespiratory	3
CRS 122	Advanced Concepts of Cardiorespiratory	1
CRS 123	Applied Cardiorespiratory Assessment	3
CRS 124	Cardiorespiratory Pharmacology	
CRS 111	Introductory Concepts of Cardiorespiratory Sciences	3

SPECIAL PROGRAM REQUIREMENTS CONTINUED

CRS 125	Clinical Practicum II	4
CRS 135	Clinical Practicum III	3
CRS 211	Neonatal and Pediatric Cardiorespiratory Care	3
CRS 212	Neonatal and Pediatric Cardiorespiratory Equipment	1
CRS 213	Cardiorespiratory Diagnostics	3
CRS 214	Cardiorespiratory Diagnostics Equipment	1
CRS 215	Clinical Practicum IV	4
CRS 221	Continuity of Cardiorespiratory Care	3
CRS 222	Seminar for Success	1
CRS 225	Clinical Practicum V	4
CRS 312	Cardiorespiratory Leadership Dynamics	3

EGG 131	Technical Physics I	
EGG 131L	Technical Physics I Lab	
PHYS 110	Conceptual Physics (or above)	

See Degree Plan on next page.

CRS 313	Education and Mentoring in the Cardiorespiratory Setting	3
CRS 315	Clinical Practicum VI	4
CRS 322	Research and Evidence-Based Practice	3
CRS 412	Long-Term and Palliative Survey of Cardiorespiratory Care	3
CRS 421	Essentials of Sleep	3
CRS 422	Special Project in Cardiorespiratory Sciences	1
CRS 425	Clinical Practicum VII	4
HIT 117B	Medical Terminology I	1

Choose one from the following (4 credits)

DESCRIPTION

The Bachelor of Applied Science program allows associate degree students and registered respiratory therapists the opportunity to build upon their current knowledge, enhance their current professional role and advance to broader careers.

Must be admitted to CRS BAS limited entry program.

STUDENT LEARNING OUTCOMES

- Summarize respiratory leadership characteristics and assess managerial techniques.
- Evaluate theory and practice of educational modalities in clinical and non-clinical settings.
- Verify advanced practitioner skills through clinical performance in specialty area.
- Validate cultivation of skills in specialty area through presentation or research project.
- Critically evaluate research methodology, analyses, and literature.

PLEASE NOTE - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

This is a limited-entry program. Some of tbese courses are program prerequisites and MUST be completed before a student is considered eligible for entry into the
Program. Students MUST attend a Health Programs orientation and meet with a Health Programs advisor for additional advisement.

Program Evaluation: Enrollment

Overall enrollment has remained steady the program continues to evolve. Some of the opportunities for improvement will be discussed in the narrative below.

Enrollment Totals for Cardiorespiratory Science Programs (Fall 2015 – Fall 2018)

SCHOOL NAME	DEPT NAME	PROGRAM CODE	PROGRAM NAME	Fall16	Fall17	Fall18	Grand Total
Engelstad School of Health Sciences	Health Related Professions	CARD-BAS	Cardiorespiratory Sciences- BAS	9	16	9	34

Program Evaluation: Completions

The program completion rate is good with a current graduation rate of rate of 65%. Opportunities for improvement will be discussed in the narrative below.

Graduation Totals

				Academic Year of Graduation Date*			
SCHOOL NAME	DEPT NAME	PROGRAM CODE	PROGRAM NAME	16	17	18	Grand Total
Engelstad School of Health Sciences	Health Related Professions	CARD-BAS	Cardiorespiratory Sciences- BAS	8	7	7	22

Accreditation

This BAS program does not currently have any special accreditation however the Commission on Accreditation for Respiratory Care has been notified of the plan to seek accreditation through them for the BAS program and the process has been begun.

Demand for Cardiorespiratory Science Courses

There is considerable demand for Cardiorespiratory Science courses. Figure 3 shows the number of students that have signified interest by declaring CRS as their major. The CRS program is a limited entry program the total number of students identified by institutional research is the total number of declared students not the total number admitted to the program. The total number of admitted students is capped by our credentialing board at 25 students annually. the total number of enrolled has dropped with the phasing out of the BAS program and transition to a BAS program.

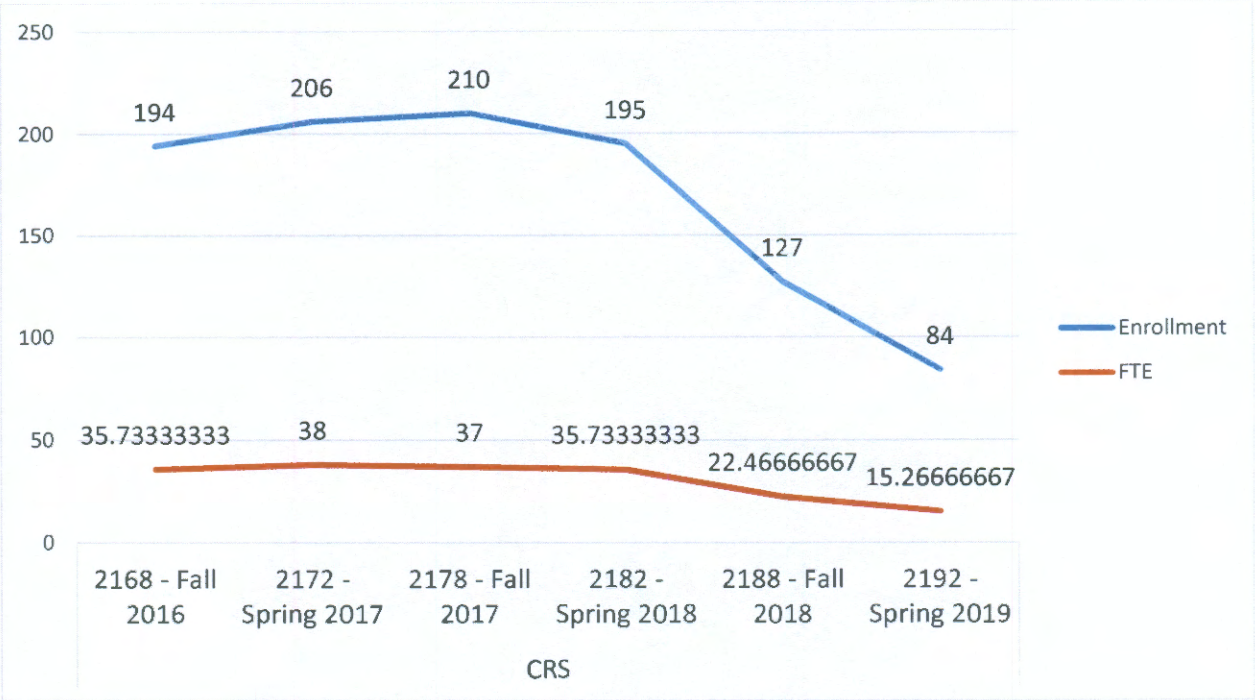

Figure 3: Overall number of students that have declared Cardiorespiratory Science as their major.

STUDENT LEARNING OUTCOMES

- Summarize respiratory leadership characteristics and assess managerial techniques.
- Evaluate theory and practice of educational modalities in clinical and non-clinical settings.
- Verify advanced practitioner skills through clinical performance in specialty area.
- Validate cultivation of skills in specialty area through presentation or research project.
- Critically evaluate research methodology, analyses, and literature.

These outcomes can best be measured by the graduate's performance in the program's capstone class CRS 422. In this class, the student must deliver a project that incorporates all aspects they have learned in the CRS BAS program such as leadership education and research

And the NBRC Clinical Simulation Exam (Figure 5)

CRS 422	2016	2017	2018
Enrolees	4	12	10
Completers	4	12	10
Average GPA	4.0	3.8	4.0

Note: This class is taken in their last the number of people taking this class and the number of people graduating per year does not match due to some learners have not completed all of their general education classes.

Program Narrative: Program – BAS Cardiorespiratory Science

Core Mission

1. **How does this program relate to the Mission and Core Themes of the College?**
    - The BAS Cardiorespiratory Science program is designed to create opportunities and enrich the lives of our diverse students by providing them with inclusive access to the quality educational background needed to pursue national credentialing, licensure and employment in the field of Respiratory Care

2. **To the best of your knowledge, how and to what extent is this program essential due to state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?**
    - There are no state or federal regulations that mandate a Bachelors degree.
    - Respiratory Therapists in the state of Nevada are licensed by The Board of Medical Examiners. One of the requirements for obtaining licensure is national credentialing.

3. **How and to what extent does this program relate to programs at other NSHE institutions (for example, overlapping programs, articulation or transfer relationships, etc.)?**
    - The BAS Cardiorespiratory Science program allows students to continue their education at CSN to receive a BAS with an emphasis in Respiratory Care
4. **How and to what extent does this program relate to programs at non-NSHE colleges in southern Nevada?**
    - The BAS Cardiorespiratory Science program is not designed to transfer to non-NSHE schools in southern Nevada.
    - As long as students take the correct combination of courses to transfer, the BAS Cardiorespiratory Science program allows for transfer to out of state MS respiratory programs.

5. **How and to what extent does this program depend upon prerequisite courses from other disciplines at CSN?**
    - The BAS cardiorespiratory program is heavily reliant on a number of different content areas. A particularly important area is the biology department students are required to complete BIOL223, BIOL224, BIOL251 before being admitted to the CRS program.

6. **How and to what extent does this program utilize other college resources for academic support (for example, library, technology, counseling, disability resource center, tutoring, writing or math centers, etc.)?**
    - Library: The CRS program maintains collections of textbooks in the library reference sections at the West Charleston campus.
    - Technology: Many instructors require the use of computers in their classrooms. For this reason, we are dependent upon OTS to provide us with the technology required.
    - Math Resource Centers: Math resource centers are important for helping students master the math courses which serve as gateways into Cardiorespiratory science courses.

- Other Services: Testing, Counseling, and the Disability Resource Center are often utilized by Cardiorespiratory Science students.

Quality

7. **Does this program have an advisory board, or does the department have an advisory board relevant to this program?**
    - The Cardiorespiratory Science Program has an advisory board. It is comprised of members of the community including physicians, hospital administration, Current and former students, and member of the community at large. Full-time faculty makes decisions regarding curriculum in concert with college policies, the advisory board, and accreditation standards.

8. **If this program has a specialized accreditation, is this accreditation necessary for alumni licensure or employability?**
    - The BAS program does not currently maintain accreditation with CoARC however as the program advance to only a BAS degree we will pursue accreditation. See the areas of concern section for more information. For graduates to be eligible to attempt the national credentialing exams. Being nationally accredited is now the minimum standard for licensure in all 50 states in the United States of America.

9. **How and to what extent does this program contribute to CSN's regional or national reputation?**
    - Cardiorespiratory Science students and faculty enhance CSN's regional and national reputation. CSN is recognized locally as the premier respiratory care program in the state with an ongoing 100% satisfaction rating from employers.
    - Students do extensive volunteer work in the community with such entities as the American Lung Association of Nevada and Opportunity Village.

10. **How and to what extent does this discipline/program support student extracurricular activities at CSN?**
    1. The program and department faculty support the following student extracurricular activities:
        - CSN CRS Students Club (Advisors: Professors Art Little and Cecilia Degenhart)
        - The CSN CRS students are regular volunteers at a number of community events.

Demand

11. **Describe the level and nature of external demand for this program (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?**

    - Employment of respiratory therapists is projected to grow 23 percent from 2016 to 2026, much faster than average for all occupations. Growth in the middle-aged and older population will lead to an increased incidence of respiratory conditions such as pneumonia, chronic obstructive pulmonary disease (COPD), and other disorders that can permanently damage the lungs or restrict lung function. The aging population will, in

turn, lead to an increased demand for respiratory therapy services and treatments, mostly in hospitals.

- In addition, a growing emphasis on reducing readmissions in hospitals may result in more demand for respiratory therapists in nursing homes and in doctors' offices.
- Advances in preventing and detecting disease, improved medications, and more sophisticated treatments will also increase the demand for respiratory therapists. Other conditions affecting the general population, such as respiratory problems due to smoking and air pollution, along with respiratory emergencies, will continue to create demand for respiratory therapists.

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Respiratory Therapists, on the Internet at https://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (visited *February 12, 2019*).

1. **Describe the level and nature of external financial or practical support for this program (for example, grants, donations, employer or clinical partnerships, etc.)?**
    - The AAS program was originally endowed with a grant from the Engelstad Family Foundation in 2009 at that time a survey was conducted to determine community interest in a BAS CRS program the response was overwhelmingly positive.
    - Subsequently, it has annually received money for capital equipment from Perkins Grants.

2. **What other options exist for students in the region to earn this degree or certificate?**
    - There are no other public BAS CRS programs in the state of Nevada.
    - A few proprietary schools offer online BAS CRS programs.

Areas of Concern and Recommendations

Department: Cardiorespiratory Sciences

Identified Areas of Concern:

1. **The program accrediting body (CoARC) the national credentialing organization and the national industry organization have all issued position papers supporting the moving of the moving of the entry-level degree for cardiorespiratory Science to a Bachelor degree at minimum. CoARC will no longer issue accreditation to any new programs that are not Bachelor level. They have asked that all program either transition to a Bachelor level or enter into a transfer agreement with a school that does.**
    - Proposed Solution: The program has already begun steps to merge the BAS degree with the existing BAS Cardiorespiratory degree so that the only track will be a BAS. Plans have been approved by the curriculum committee. The program is currently working with CoARC to extend accreditation to the BAS program.

2. **Due to the high number of credits currently needed to obtain a BAS in Cardiorespiratory Sciences (81) it is not unusual for students to both cap out their financial aid as well as run into the College excessive credit fees.**
    - Proposed Solution: By transferring to a BAS the number of credits that are used for both financial aid and excess credit fee consideration would be increased making it much less likely for students to run into these pitfalls.

3. **Students are all credentialed Respiratory Therapists that are working in the community due to the fact that they all have jobs and presumably homelives it has proven difficult for them to finish the program in the originally planned time frame.**
    Students have been allowed to complete at their own pace. Due to the structure or lack thereof, it is often difficult to know where in the process individual students are. With the advancement to just a BAS CRS degree, students will move along with their cohort. This will serve to increase on-time graduation. Students will not be eligible to obtain national credentials or licensure until they have completed all courses and graduated for the program.

I agree with the identified areas of concern and proposed solutions presented by the program director.

Cassie Gentry

Cassie Gentry, HRP Department Chair

3-29-19

Date